

**Worlds Apart:
SMEs, e-Business and Policy Initiatives**

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Dedicated to the memory of

Tasha
(29/8/1989 – 30/12/2002)

and

Porus
(29/5/2003)

Declaration

The research in this thesis constitutes work carried out by the candidate. The thesis is 96,782 words in length, exclusive of index, footnotes, bibliography and appendices, and complies with the stipulations set out for the degree of Doctor of Philosophy by the University of London.

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"Reality is messy"
Ormerod, 2001

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Articles

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Wiggins, A. (2006). "EU SMEs and e-Business Innovation" in *The Encyclopedia of E-Commerce, E-Government and Mobile Commerce*. Mehdi Khosrow-Pour, (Ed.), IDEA Group Publishing, Hershey, PA, USA.

Book Chapters

Wiggins, A. (2005). "SMEs & Government Policies – Worlds Apart: the UK Experience 1999-2004" in Al-Qirim, N.A.Y. (ed.), *Global Electronic Business Research in Small- to Medium-Sized Enterprises: Contemporary Issues, Implications and Future Trends*, IDEA Group Publishing, Hershey, PA: 179-212.

Wiggins, A. (2004). "e-Commerce Policies in the EU: Enhancing the Competitiveness of SMEs through Innovation" in Corbitt, B.J. and Al-Qirim, N.A.Y. (Eds.), *e-Business, e-Government & Small and Medium-Sized Enterprises: Opportunities and Challenges*. IDEA Group Publishing, Hershey, PA: 156-183.

Wiggins, A. (2003). "Managing the Adoption and Implementation of e-Business: Two UK SME Case Studies" in Sharma, S.K. and Gupta, J.N.D. (Eds.), *Managing e-Business in the 21st Century*. Heidelberg Press, Vic: 413-432.

Galliers, R.D. and Wiggins, A. (2002). "Internet Retailing in the United Kingdom" in Elliot, S. (Ed.), *Electronic Commerce: B2C Strategies and Models*. John Wiley & Sons, Oxford: 179-215.

Conference Papers

Wiggins, A. (2006). *UK Policy Initiatives Aimed at Stimulating SME e-Business Innovation*, at ICEC 2006: The Eighth International Conference on Electronic Commerce, Fredericton, New Brunswick, Canada, August 14-16 2006.

Wiggins, A. (2004). *The Strategic Implications of the Adoption and Implementation of e-Business by UK SMEs in light of EU Policy Initiatives: Seven Case Studies*, presented at IRMA Doctoral Symposium, New Orleans, USA, 23-26 May: 1452-1455.

Wiggins, A. (2003). *EU Innovation Policies: Their Impact on Entrepreneurs and SMEs*, presented at 3rd European Conference on e-Government, Trinity College, Dublin, Ireland, 3-4 July: 463-474.

Wiggins, A. (2003). *The Adoption and Implementation of e-Business by UK SME Start-Up Pure Players: Two Case Studies*, presented at the 4th Annual Global Information Technology Management (GITM) World Conference, Calgary, Alberta, Canada, 8-10 June: 224.

Wiggins, A. (2002). *The strategic implications of the adoption and implementation of e-business by SMEs in the UK in light of EU policy initiatives*, presented at the 2nd International Workshop "New Models of Business: Managerial Aspects and Enabling Technology" held by School of Management, St. Petersburg State University, St. Petersburg, Russia, 26-28 June: 57-64.

Wiggins, A. (2002). *Enhancing Competitiveness through Innovation Policies*, presented at a TRAM (Training and Research Actions in Multimedia) seminar in Professional Training in Digital Media Management, sponsored by the MEDIA Plus Programme of the European Community and the French Institut National de l'Audiovisuel, held in Milan, Italy, 21-23 May: 59-76.

Thesis Abstract

This thesis draws together and reconciles three seemingly dichotomous “worlds”: small- and medium-sized enterprises (SMEs), e-business and government policy making. A significant number of EU and UK government projects and policy initiatives have been introduced in recent years to motivate e-business adoption and implementation by SMEs, yet the relatively low take-up rate strongly indicates that these policies and initiatives are failing. Designed as a preliminary study, this research ascertains the practical impact of such policy initiatives on SMEs, based on the experiences of seven UK case studies, with a view to instruct constructive and feasible changes in policy making. The implication is that future policy initiatives may become more appropriate, coherent and accessible to SMEs, resulting in greater opportunities for them, a greater level of innovation adoption by them, and an economy that is – as a direct result – more dynamic.

In this “problem situation,” both the SMEs and the policy makers who aim to serve them are joint owners of the problem situation. There is a very real need to think about ways to bring these “actors” in disparate “worlds” together into a more collaborative arrangement, and to consider how government policies that are currently failing SMEs might have more relevance – it would seem that most SMEs are unaware of many of the services and initiatives provided by their government. Ascertaining what SMEs want and need, designing policies and services in light of this, and finding better ways of letting them know these services are available, would seem to be the key.

Through a narrative research approach informed by Action Case Research (ACR) and Dialogical Action Research (Dialogical AR), in combination with Soft Systems Methodology (SSM) conceptual modelling, this doctoral research develops our understanding of SME policy initiatives in the UK and the EU. The thesis addresses the absence of well-structured multiple case study designs in the literature, and tests existing knowledge about SMEs and policy generation in an original way. The development of appropriate and complementary (ACR and Dialogical AR) analysis tools constitutes a methodological extension of the SSM conceptual modelling process for ISD, which focuses on social, political and cultural factors and the social construction of problems and

solutions. The thesis is an exploration of complex and ill-structured problem situations with multiple owners that can be viewed from a variety of stances – this has rarely been featured in the literature. This research is also an extension of SSM theory development, in that SSM has not been widely used in the SME environment, and there are very few examples of iteration having taken place in the literature. The research is an interpretive approach to the study of a domain about which we know very little. As such, it provides a contribution to literature, theory and practice.

A (1981) study by Galliers *et al.* is drawn upon. Although that study was originally applied in a very different context, it nonetheless parallels this doctoral research, in that both examine a complex and difficult real world system with a utilitarian approach, and in that both are soft systems studies that draw together anachronous worlds and suggest a way of pursuing a dialogue that is meaningful to all involved parties.

The research concludes with a proposal to incentivise SME owner/managers to attend workshop(s), in order that an in-depth and meaningful dialogue between policy makers and SMEs can develop, and in order to draw out attitudes and issues previously unexpressed. Policy makers would thus be able to build on the findings in order to generate and advertise more appurtenant policies for SMEs, thereby bringing these “worlds” together.

Chapter 1

Introduction

1.1 BACKGROUND

The motivation for this research arises from a practical problem. The research attempts to find a way to draw together and reconcile three seemingly dichotomous worlds: small- and medium-sized enterprises (SMEs), e-business and government policies. A significant number of projects and policy initiatives have been generated by governments in recent years to stimulate the SME sector, not least with regards to motivating them to incorporate e-business¹ into their business operations. This research examines such EU and UK policies and initiatives, measured against the experiences of seven UK SME case study organisations that have adopted and implemented e-business, and ascertains to what extent these policies and initiatives facilitated their success. Bringing to light the concerns that the SME, e-business and policy initiative views, practices and canons are “worlds apart,” the thesis serves as a preliminary study aiming to both inform and set the scene for subsequent work to take place outside the domain of PhD research. Accordingly, the research sets out an agenda for what needs to be done.

The seven case organisation principals recognised the potential strategic opportunities offered by e-business, and wholeheartedly sought to realise them.² However, other than

¹ e-Business (electronic business) is defined for the purposes of this doctoral study as those activities related to the business operations of an organisation conducted over networks or the internet. By no means purely transactional, e-Business therefore encompasses all e-commerce activities (those business activities related to the actual buying and selling of goods and services among organisations over networks or the internet), including email. In this research, the terms “e-business,” “e-commerce,” “ICTs” (information and communication technologies) and “conducting business online” are used interchangeably, as they are all conceptualisations that relate to electronic business practices.

Chapter 2.3 contains detailed information about e-business.

² Companies that have adopted e-business believe that it contributes to improved performance in four main ways:

- The development of new products and services.
- The generation of new customers and business channels.

the need for compliance with legalities (such as taxation and VAT), none of the seven case organisation principals was remotely aware, or was a conscious beneficiary, of any EU or UK government projects, policies or initiatives intended specifically to benefit them.³ (This conclusion is supported by additional research, which is presented in Chapters 2, 3 and 4.) It would seem, therefore, to be the case that such projects, policies and initiatives (although doubtless well-intentioned and certainly well funded) are failing in that they do not reach their intended audience. The overall low take-up rate of e-business amongst SMEs is also a strong indicator of a lack of success for these initiatives (Accenture, 2001; HM Treasury, 2001c; DTI, 2002c; SBS, 2004a; 2004b).

Figure 1.1 illustrates these two worlds, (seemingly) doomed not to collaborate until they increase their understanding of each other. Based on evidence arising from and presented throughout this research, it would therefore seem that policies developed for the benefit of SMEs could be better targeted to their intended audience, and that crucial changes need to be made to policy formulation.

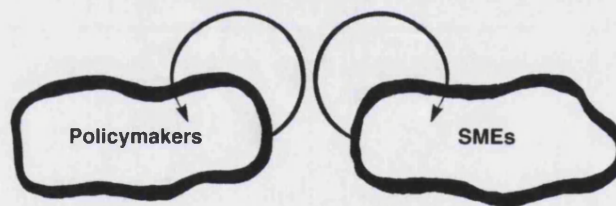


Figure 1.1 – Worlds apart: SMEs and policy initiatives

It is appropriate, then, that this research explores ways to begin to engender a meaningful dialogue with a view to a real collaboration between SMEs and policy makers. This collaboration is necessary for governments, the public sector and policy makers to better

-
- A reduction in costs.
 - Improved productivity (HM Treasury, 2001c).

Appendix A contains a comprehensive list of potential benefits arising from e-business adoption and implementation.

³ Both EU and national laws are covered in this research. While national law and EU law are mutually dependent, EU laws take precedence over national law. The EU typically issues directives (a form of legislation) to member states that become law after approximately two years (Schulze and Baumgartner, 2000).

serve and stimulate SMEs. One implication, therefore, of this research is that future policy makers may become better informed about what SMEs themselves feel they “need” and about what sort of policies and initiatives might work. The introduction of more appropriate government policies could assist more SMEs to not only understand the relevance of e-business in relation to their operations, but also to employ strategies that would enable them to harness the opportunities that e-business enables.

The literature is marked by a (relative) lack of empirical research on SME adoption and implementation of technology, and many impact studies that do exist have overlooked the key actors: the SME owner/managers and their employees (Brock, 2000; Dixon *et al.*, 2002). Southern and Tilley (2000) suggest that this is due to a lack of analytical clarity in research conducted on SMEs. This absence in the literature has in turn led to a limited conceptual understanding of the relationship between SMEs and technology. Comparatively little is known about the use of Information and Communications Technologies (ICTs), let alone e-business, in SMEs, and much longitudinal research has tended to be marginalised by cross-sectional studies. A considerable body of the research that has been carried out in this field has taken a deterministic view of e-business, predicated on the assumption that its adoption and implementation is a good thing for SMEs. In addition, research conducted from the perspective of an SME owner/manager can tend to reinforce the view that technology in SMEs only has meaning and can only be measured in the context of business activities (Blackburn and McClure, 1998; Fuller and Southern, 1999; Southern and Tilley, 2000). Nevertheless, it cannot be overlooked that managerial support and a sense of strategic direction would seem to be fundamental to ensuring e-business adoption and implementation success in SMEs (Blackburn and McClure, 1998).

In short, it can be said that the research explores the disjuncture between the macro-level policy initiatives designed to stimulate e-business adoption and implementation by SMEs and the micro-level needs and priorities of SMEs. The thesis proposes how this disjuncture could successfully be addressed. Having broadly introduced the topic in this section of the chapter, the remaining sections lay out the structure, content and *raison d’être* of the thesis.

- The next section of the chapter explains the research focus of the thesis. In particular, it describes the nature and context of SMEs, and provides an overview of how government policies designed to facilitate their adoption and implementation of innovation technologies are failing.
- Following from this, section 1.3 relates the research problem situation and objectives. Given that this thesis explores a complex and ill-structured problem situation, the problem's "ownership" and the variety of stances from which the problem can be viewed are ascertained. In addition, the problem solving activities of the study are explained.
- Section 1.4 provides an overview of the thesis' research methodology and theoretical approach, and describes how they are aligned with the focus of the study.
- The ensuing section outlines the stages of the research process, thereby providing an overview of the thesis.
- Section 1.6 presents the contributions of the research to literature, theory and practice.
- The final section of the chapter summarises the thesis. It also describes the advances made by the research, synthesises the findings and suggests future research directions.

Thus, we move to the next section of the chapter, which explains the research focus of the thesis.

1.2 THE RESEARCH "PROBLEM SITUATION" IN FOCUS

The conceptual framework synergising the key issues of the study that are under-researched in the separate canons are now – as a direct result of this research – explicitly articulated. Keeping in mind that the thesis constitutes a piece of exploratory research, the researcher worked towards achieving a synthesis of the literature that enabled a framework to emerge from the research itself. The Literature Review (presented in and constituting Chapters 2, 3 and 4) showed that SMEs are under-researched and that the relevant canons need to be brought together. The findings of the research also clearly show that policy development needs to be more theoretically informed.

From the offset of the research, it was crucial that the nature and context of SMEs was appreciated: SMEs have their own unique qualities in terms of their environment, structure, psycho-sociological climate, management, and technology usage (Ein-Dor and Segev, 1978; Welch and White, 1981; Pahl, 1984; Weber, 1985; Oakey, 1985; Raymond, 1985; 1989; 1990b; Cheney *et al.*, 1986; Clegg, 1990; Cornford *et al.*, 1991; Granovetter, 1992; Reynolds *et al.*, 1994; Mulhern, 1995; Thompson and McHugh, 1995; Murphy, 1996; Westhead and Storey, 1996; Chen and Williams, 1998; Bunker and MacGregor, 2000; Gibb, 2000; Smallbone *et al.*, 2000; Castleman *et al.*, 2000; Castleman and Coulthard, 2001; Thong, 2001; Tatnall and Burgess, 2002). Much of what applies to large firms simply does not apply to SMEs, as their advantages stem from different business characteristics. SMEs face different challenges, and by no means do they emulate the ability and willingness of larger organisations to adopt, utilise and manage technology: indeed, to *innovate*. Tending to suffer from “resource poverty” (Thong *et al.*, 1993), SMEs often lack the internal resources and external networks necessary for ready access to the knowledge, skills, technologies, time and finance on which e-business success depends. The difficulty of identifying and obtaining appropriate sources of finance and technical skills, especially, affects SMEs disproportionately.

A large organisation can take advantage of economies of scale, spreading out fixed costs through the product line. An SME, while unable to do this, is (usually) more flexible than a large organisation, and is (usually) able to react more quickly to market forces (Troye-Walker, 1998a; 1998b; Chappell and Feindt, 1999). However, while SMEs are theoretically able to take advantage of niche markets, as they operate with limited resources, they are less able to afford disasters or failure (Gerwin, 1990; Carter, 1990; Thong *et al.*, 1993; Iacovou *et al.*, 1995; MacGregor and Bunker, 1996; Tidd *et al.*, 1997; Poon and Swatman, 1997a; 1997d; Dennis, 2000; Nunes and Cunha, 2000; Walczuch *et al.*, 2000; Thong, 2001; Dixon *et al.*, 2002; Huang *et al.*, 2004). On the other hand, SMEs tend to share the advantages of an absence of bureaucracy, and have informal and efficient communication systems (Oakey, 1985; Olave and Neto, 2001).

The nature of SMEs is explored in some detail in Chapter 2. To supplement this, a comprehensive referenced list of SME characteristics is presented in Appendix B of the thesis. SME characteristics are therein sub-divided into the following topic areas:

- How SMEs differ from large businesses.
- Strong owner influence/centralised management.
- Higher risk levels.
- Difficulties recognising and obtaining appropriate sources of finance.
- Intuitive decision-making.
- Informal and inadequate planning processes.
- Lack of control over external environment.
- Poor record keeping.
- Intrusion of family values.
- Strong desire for independence.
- Reluctance to take risks with/spend money on technology.
- Limited use/knowledge of technology.
- Limited market share.
- Narrow product/service range.
- Narrow education/experience/skills levels.
- Limited resource base.
- Flexibility to react to market conditions.
- Lower wages/opportunities for staff.
- Formal and informal networks and alliances.

Despite these constraints on their business operations, SMEs are crucial to the economic vitality of all nations. They are a key driver of economic growth, as their dynamism stimulates competition and innovation throughout the economy as a whole (Troye-Walker, 1998b; Reynolds, 1998; Audretsch *et al.*, 2001; DTI, 2003a; SBS 2004a). (This is explained in more detail in Chapter 2.) Consequently, the health of the SME sector is crucial to the success of a government's economic and productivity agenda. It can be argued, therefore, that appropriate policy initiatives should be formulated to create favourable conditions in which SMEs can thrive. To that end, the EU and UK governments have oriented a significant number of actions in order to foster, if not actually finance, SMEs. Among the number of policies and initiatives developed to support and stimulate the SME sector have been those specifically designed to promote ICT and e-business adoption and implementation. The UK political environment has both senior and committed political leadership on e-economy topics, in addition to a

supportive national regulatory regime. The total cost of UK government services to SMEs is estimated to be approximately £8bn annually (SBS, 2004a; 2004b). Such policies and initiatives are discussed in some detail in Chapter 4, and are outlined in Appendices K and L.

Despite the perceived advantages of adopting and implementing e-business, ICT and internet usage by SMEs is still relatively undeveloped, and the smaller the enterprise, the less statistically likely it is to use technology, let alone operate as an e-business (Southern and Tilley, 2000; Dixon *et al.*, 2002; SBS, 2002c; Tucker and Lafferty, 2004). In fact, many small businesses in the UK still do not own a computer, citing cost as a major barrier to doing so (FSB, 2002a; 2002b). Those SMEs that do operate online tend to use the internet only to send emails, to transfer files or documents, and to gather information (See Figure 1.2). In a 2001 survey, 25% of SMEs responded that they did not believe that the internet was relevant to their business, and 11% felt that they lacked the skills or knowledge to go online (SBS, 2002c).

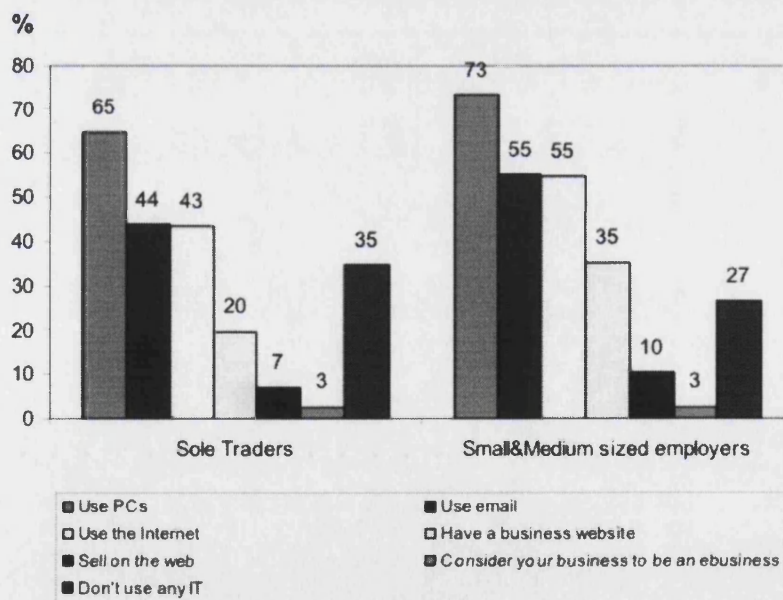


Figure 1.2. – Use of ICTs by UK SMEs (HM Treasury, 2001c: 146)

Although the majority of UK SMEs have access to the internet, only a minority (between 6-10%) regard it as their preferred way of dealing with government. SMEs tend to be

critical of many government websites, finding them difficult to navigate (HM Treasury, 2001c; Bennett and Robson, 2003a; 2003b; 2003c). Indeed, Accenture (2001) analysed more than 1,000 UK government websites, accessed through 80 portals, each with its own character and navigation requirements. SMEs simply do not have the time to learn how to use them all or to discover where the information they need might be located. *The International Benchmarking Survey* (DTI, 2002c) found that only 50% of UK SMEs go online to find out information about local or central government services. Unfortunately the SMEs that do, tend to find it “very difficult” to ascertain what support and services are available to them (Accenture, 2001; DTI, 2002c). This difficulty is due in part to the perception of inconsistency regarding the support and services on offer – EU and UK government services for SMEs seem to be fragmented, confusing and difficult to access (Harding, 2002). There appears, therefore, to be a need to address the quality of business advice, and to universalise the level of co-ordination and collaboration of services between all public and private sector providers and their intermediaries. (This conclusion is elaborated upon throughout the Literature Review in Chapters 2, 3 and 4. Clarification on these issues is also provided in the findings from the case organisations, presented in Chapters 7, 8 and 9. These findings are synthesised in Appendices O and P.)

Two factors further compound the problem:

- First, the UK is rated as “low” in provision of services online (Accenture, 2001) (See Table 1.1).
- Second, although 73% of government services directed towards SMEs have some degree of electronic presence, in practice many of these are simply online equivalents of the paper-based services already available, and so offer insufficient additional value to users over their paper-based equivalents (Accenture, 2001; HM Treasury, 2001c).

% of UK Government services available online of which	73
% at publish level	70
% at interact level	25
% at transact level	5

**Table 1.1 – Percentage provision of UK government services available online
(from HM Treasury, 2001c: 147)**

While government departments and agencies employ a range of feedback techniques to ascertain the needs of the SME community, feedback is (usually) obtained mainly from large-scale multiple-choice surveys. For instance, checkbox ticks determine the SBS and Business Link service satisfaction levels. This is likely to bring about skewed results, as on the one hand, these agencies serve only those SMEs that approach them (statistically a very small proportion); and on the other, the SME owner/manager might be polite and mark up – respondents cannot always gauge what a service should be delivering (and therefore what they in turn should expect), and in such scenarios tend to mark up, rather than down. Multiple choice questionnaire responses also have a number of additional disadvantages:

- A very low response rate.
- Answers that are shaped by the multiple-choice format.
- Questions that are formulated by government (or their agencies) to meet targets and satisfaction objectives (SBS, 2004a; 2004b).

Therefore, despite many government departments reporting high/improved SME satisfaction levels, this is not necessarily a true indication of the situation, as these measures can produce inflated results to meet government targets. One example is provided by the Inland Revenue (IR) reporting that its usage and satisfaction levels with support services are high (IR, 2003), but another government survey conducted at the same time (Small Business Research Trust, 2001) found that while almost 4 in 10 SMEs said they needed advice or information on government regulations, approximately half of these were unsuccessful in obtaining it. Results are further removed from a realistic interpretation because government departments often rely on consulting firms or other representative bodies to provide an SME perspective (HM Treasury, 2001c). Although the IR *does* run a number of focus groups with SMEs, they are organised thematically, co-ordinated by independent consultants, and the results are interpreted in accordance with target objectives (HM Treasury, 2001).

These methods are no substitute for more intensive – and direct – means of assessing the needs of SMEs, particularly when formulating delivery mechanisms. Such evidence unambiguously indicates that SMEs and policy makers do not currently communicate effectively, and that SMEs are not being asked directly what they themselves want and need. (These issues are presented in some detail throughout the Literature Review in Chapters 2, 3 and 4, and supplemented in Appendices A, C, E, F, K and L. Clarification on these issues is provided by the findings from the case organisations, presented in Chapters 7, 8 and 9. These findings are synthesised in Appendices O and P.)

Viewed from this standpoint, both the SMEs and the policy makers who aim to serve them are the joint owners of – and actors in – the “problem situation.” There is a very real need to think about ways to bring them together into a more collaborative arrangement and to consider what sort of system might be more mutually beneficial. These considerations stimulated and motivated the genesis and development of the research questions (a description of which is featured in Chapter 6.2). The research questions underpinning the research are:

- How can government policies and initiatives motivate SMEs to adopt and implement e-business?
- In the case of UK SMEs, how and why is e-business adoption and implementation taking place?
- What are the debates, activities and concerns arising from UK SME adoption and implementation of e-business and what do these debates suggest about EU and UK policy initiatives?

The debates introduced here are intended to elucidate and place the research “problem situation” in focus. They are developed in the next section of the chapter, wherein the research problem situation and the research objectives are contextualised.

1.3 RECONCILING WORLDS APART: THE RESEARCH PROBLEM SITUATION AND THE RESEARCH OBJECTIVES

As the problem situation at the core of this research is both complex and ill-structured, particular attention needed to be paid, not only to ascertaining problem ownership, but also to considering the variety of potential stances from which the problem situation could be viewed. Such problem situations are ripe for SSM analysis, but have rarely been explored (Galliers *et al.*, 1981; Checkland and Scholes, 1990b).⁴

As has been explained, the researcher had embarked upon an exploratory study. The initial period of background literature research and the interviews with the seven case organisation principals enabled her to form a number of tentative conclusions about the problem situation. The evidence for – and explanation and analysis of – these conclusions are presented throughout the thesis. However, these conclusions are also outlined in brief here:

- There are a number of different agencies at all levels of government.
- Inter-agency communication and co-operation generating and sponsoring programmes designed to assist SMEs could be improved.
- There is a broad range of attitudes towards the way in which services should be provided for SMEs in general, and towards the adoption and implementation of e-business by SMEs, in particular.
- There is an absence of a commonly-held policy with respect to the adoption and implementation of e-business by SMEs amongst all the agencies involved.
- Little direct interaction and dialogue between SMEs and policy makers seems to take place.
- SMEs are often oblivious to these policies and initiatives (except regarding their having to comply with taxation and VAT-related regulations).

The evidence for these conclusions is presented throughout the Literature Review (Chapters 2, 3 and 4) and the findings arising from the case studies (Chapters 7, 8 and 9). (Supplementary evidence and references are provided in the Appendices B, D, I, K, L, O and P.) Arising from these initial conclusions, the researcher formed the opinion – in line with Galliers *et al.* (1981: 102) – that a more appropriate distribution of resources

⁴ The researcher's exploration of the subsequent literature brought to light no more recent evidence to the contrary in the literature.

(financial and otherwise) is integral to understanding the inter-related problems of attitudes, policies, information and communication related to such issues.

Figure 1.3 presents an illustration of the failings of the current policy generation situation.

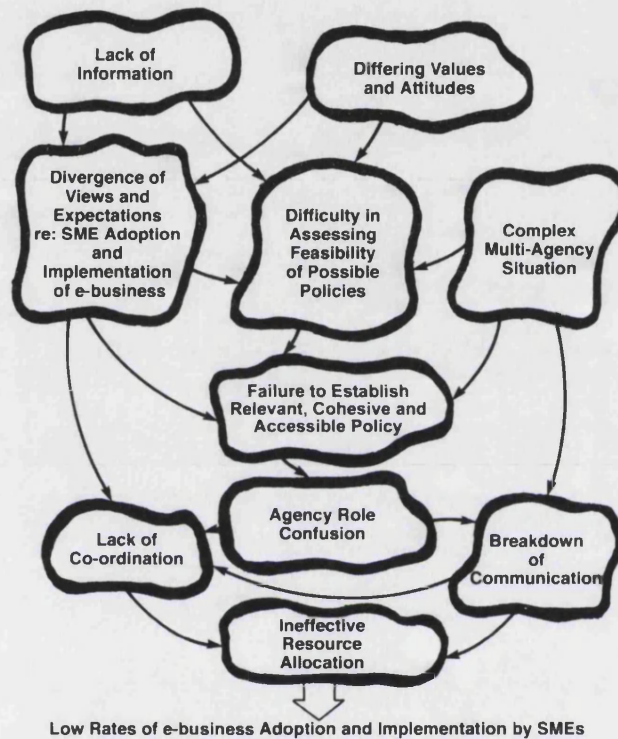


Figure 1.3 – Related problems with policy generation leading to low rates of e-business adoption and implementation by SMEs (adapted from Galliers *et al.*, 1981: 103)

Following on from the discussions (or “reflective dialogues”) with the SME case organisation principals, the researcher concentrated the focus of the research project onto policy formation and attitude identification. Her aim was to establish a systemically desirable and culturally feasible policy approach for motivating the adoption and implementation of e-business by SMEs (Checkland, 1981; 1991; 1995; 1999a; 1999b; 2001a; 2001b; Checkland and Scholes, 1990a; 1990b; Checkland and Holwell, 1998; Van Akkeren and Cavaye, 1999a; 1999b). She wanted to achieve a systems perspective in line with Galliers *et al.*’s (1981: 102) goal of creating a “policy identification, selection and

implementation system.” This outlook clarified the subsequent course of the research. Knowledge of the SME socio-cultural climate, in addition to the systemic implications of policies, would seem to be necessary for policy makers to successfully resolve the situation. Choosing which policies should be explored by capturing them in Root Definitions and then modelling their respective systems must necessarily take into consideration the various “actors” and “owners” operating in various environments and embodying any number of plausible values and attitudes. As a result, it is a complicated process. Chapter 5 presents the justification for this research approach.

According to Galliers *et al.* (1981), it is essential to: -

- Identify activities:
 - Know the problem content situation.
 - Define the basic parameters of the system to be served by the policy.
 - Identify options in the situation.
- Select activities:
 - Define activities implied by the options.
 - Identify the resource requirements of the activities.
 - Identify the implications of the options in the situation.
 - Know the resource constraints.
 - Know the decision-makers’ requirements.
 - Select a feasible policy.
 - Appreciate the culture of the situation.
- Implement Activities:
 - Identify policy implementation options.
 - Identify actors’ attitudes.
 - Assess support for policy.
 - Select implementation strategy.
 - Implement.

Galliers *et al.* (1981) proposed the utilisation of a generalised model in order to rationalise such debates. Figure 1.4 provides a conceptual model of the problem-solving activities of this system.

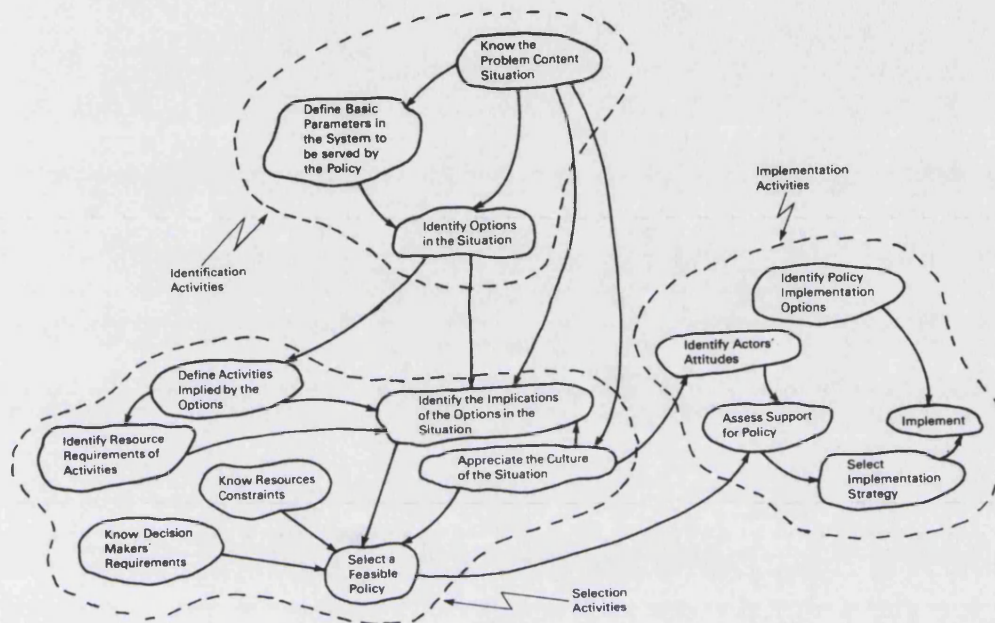


Figure 1.4 – The problem solving activities of the study (Galliers *et al.*, 1981: 104)

In both this research and the (1981) Galliers *et al.* study, a large number of policy options existed. Rather than attempt to select a single policy to be pursued, the researcher decided that it would be more appropriate to assist and empower those responsible for formulating the relevant policies by assessing the implications of each decision on a “decision tree” and then leaving the choice to them. Those concerned with the services provision are (often) the best equipped to assess the feasibility and desirability of a given policy. Therefore, the various differing attitudes between agencies need to be better informed, and then “orchestrated,” as per Galliers *et al.* (1981), in order to come together into a coherent whole, in order that the decision takers in the different agencies are in a position to decide on relevant, cohesive and accessible policies. It is desirable and appropriate, therefore, to include SMEs in the dialogue regarding the generation of the

policies intended for their own benefit. The researcher also believed, in line with Galliers *et al.* (1981: 107),⁵ that the formulation of policy was “best viewed” as an *ongoing* activity.

A large number of policy options exist. The researcher therefore reasoned that the use of SSM conceptual modelling provided a sound basis for critically deconstructing these options: the kind(s) of logic being used and the sort(s) of philosophy being enacted could be opened up to examination and contrasted with alternatives. Methods of constructing and denoting worth could thereby be compared to one another, even when fundamental differences were apparent. (This viewpoint proved particularly useful when the researcher conducted cross-sector analyses where economic measures of priorities and social

⁵ The formulation and reformulation of policy is an ongoing activity, subject to changing attitudes and environmental factors (Galliers *et al.*, 1981). There are so many possible policies and initiatives that it is not practicable to capture each one in a Root Definition and to identify all the activities implied by each of these policies. According to Galliers *et al.* (1981), crucial procedural decisions are needed for each of the systems identified, as in each case, the agency will have to decide if it is to “operate” the system or to take on the role of a “co-ordinator” of other agencies possibly better equipped to offer the services required by the decision activities. However, as each decision can be considered to imply a (potential, at least) system, the implications of decisions can be shown by modelling the “decision – implied” systems and by identifying the subsequent activities that their implementation would require through a Decision Tree.

Each decision could be considered to imply a system: the implications of decisions can be shown by modelling the “decision-implied” systems and thereby identifying the activities that their implementation would require. In this way, each of the “decision – implied” systems can be modelled in order to identify the organisational, resource and cultural implications of each. Policy makers would thereby be enabled to make an informed decision on the basis of an assessment of the implications of the necessary activities implied by a given decision by relating policy decisions to the systems implied by the Decision Tree (as illustrated in Figure 1.5).

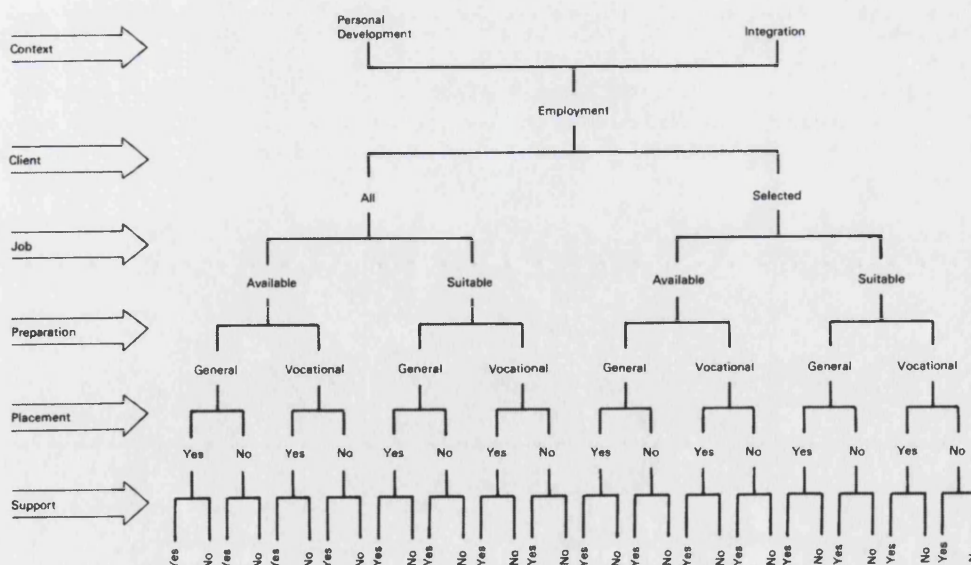


Figure 1.5 – Decision tree (Galliers *et al.*, 1981: 107)

concerns were in conflict.) SSM conceptual modelling was used as the vehicle for developing such a systems approach to policy formation. The process goes through a number of iterations, which refine the nature of the problem(s) and eventually draws the potential conclusion(s) to the fore. This “spiral of iterations” is illustrated in Figure 1.6.

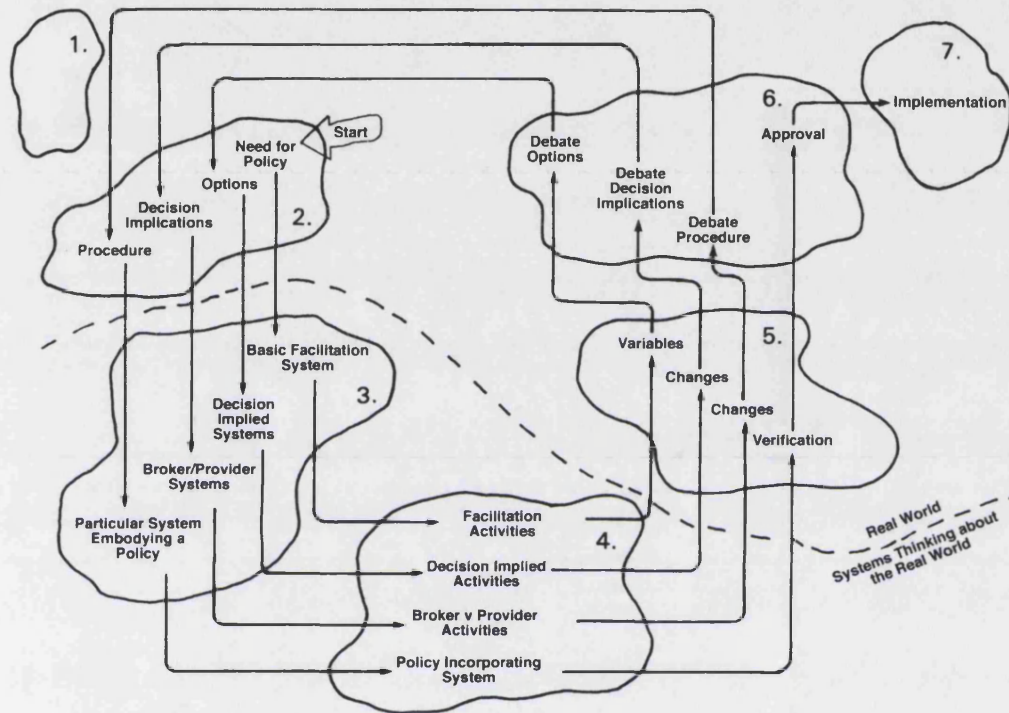


Figure 1.6 – A systems approach to policy formulation (based on Galliers *et al.*, 1981: 111)

The following “events” are illustrated in this “spiral of iterations”:

- That successive iterations could ameliorate the options available, the decisions to be made, and the alternatives.
- That a “perceived need” for a commonly agreed policy is identified in the building of the “rich picture” of the problem situation (Stage 2).
- That this leads to the definition and conceptualisation of the basic activities such a system would require (System 4).

- That the comparison of these activities with the “rich picture” (Stage 5) enables alternative views to emerge.
- That the debate completing the first iteration extends the understanding of the problem situation “from one accepting the need for a policy to one appreciating the options available” (Stage 2).
- That acknowledging and considering the available options is a crucial part of taking decisions when formulating policy. However, each decision could in turn be seen to imply a system that, when modelled (Stage 4), defines the decision-implied activities.
- That a comparison of these activities with the problem situation (Stage 5) indicates the changes that would have to take place if the decisions were to be implemented.
- That a debate about these changes (Stage 6) could lead to an understanding of their organisational, resource and cultural implications.
- That the resulting understanding of those involved could then evolve from knowledge of the options available to knowledge of their implications (which could, in turn, draw attention to the alternative options (Stage 2)).
- That when the role of “service provider” is contrasted with that of “service broker” and their respective systems are defined (Stage 3), the modelling of these systems (Stage 4) could indicate the different activities in which the relevant actors could engage.
- That the comparison of these activities with the current situation (Stage 5) provides a basis for a discussion about what is essential, but also provides an alternative view.
- That investigating what resources are required tends to make clear the fact that resources are intertwined with the inter-related problems of combining attitudes, policies, information and communication. In view of this, the emphasis of the project could likely evolve “from a consideration of resource requirements and allocation, to one of policy formation and attitude identification.”
- That by identifying the basic parameters of the policy “situation,” the range of possible decisions related to each parameter, and the implications of those decisions, would assist in the policy generation process.

- That successive iterations of SSM would clarify the process, as the composition and re-composition of policy is an “ongoing activity” subject to “changing attitudes and environmental factors” (Galliers *et al.*, 1981: 110-114).

This complicated approach was supported by discussions with the seven UK SME case organisation principals. These “reflective dialogues” made clear the need for more visible, appropriate and accessible policy initiatives. Despite the considerable EU and UK resources are allocated to formulate policies and initiatives to promote and enable the adoption and implementation of e-business by SMEs (details of which are presented in Chapters 2, 3 and 4 and Appendices K and L). However, it would seem that relatively few of these policies and initiatives seem to be visible to SMEs, let alone coherent, relevant and/or accessible (Accenture, 2001; HM Treasury, 2001c; DTI, 2002c; SBS, 2004a; 2004b).

There seemed to the researcher to be a very real and unambiguous need for a more in-depth, meaningful, collaborative dialogue between the two currently separate “worlds” of SMEs and policy makers to take place.

The findings of this research (as presented in Chapters 2, 3 and 4, and arising from the case studies presented in Chapters 7, 8 and 9, and supplemented in the associated appendices) make it clear that:

- Most UK SMEs are not aware of many of the services provided by the EU and UK governments (HM Treasury, 2001c; DTI, 2002c; SBS, 2004a); and
- The current proliferation of services confuses SME owner/managers.

A rationalisation of schemes and a co-ordination of effort and information between departments, in combination with improved policies and initiatives, would therefore likely improve the current situation. The research shows that ascertaining what SMEs want and need, designing policies and services in light of this, and finding better ways of letting them know that these services are available, would seem to be the key to achieving the desired improvements. A more customer-focused, joined-up approach to delivering

government services to SMEs may significantly improve service delivery. Even relatively small improvements could potentially have a cumulatively large impact.

In this real-world manifestation of a complex human activity system concerned with policy generation, an explicitly agreed common policy making process would seem to be essential, not only according to the seven UK case organisation principals, but to all the “actors” involved. The differing values and attitudes of these various “actors” in the problem situation can thus be taken into account. In the IS literature, less emphasis thus far has been placed on assessing cultural feasibility than has been placed on systemic desirability (Dixon *et al.*, 2002).

The process of setting up workshop(s) between SME owner/managers and policy makers, in addition to the questionnaire and interviews conducted in the course of this research, could make the relevant actors’ *Weltanschauung* explicit, and would enable discussion to be focused on the subject in an open and collaborative environment. This would no doubt increase awareness and understanding between – if not bring together – the relevant “actors” (the SME owner/managers and policy makers). In this way, they could both actively participate in a mutually beneficial collaboration with each other in the policy-making process. The actors involved would be placed in a situation where the ownership of the problem situation and addressing the resultant policy would be explicitly shared. As a result, these different “worlds” would no longer be, effectively, “worlds apart.”

This thesis provides the background research and sets the scene necessary for such a collaborative participation to take place. The concluding chapter presents a framework for policy development that shows how the theory might better work, illustrated in a model of a theoretical framework for policy initiatives that includes all the important aspects that the process should contain.

Throughout the thesis, the conceptual framework synergising the key issues that have been introduced here and that are under-researched in the separate canons is articulated. By presenting here the main key points that inform the research topic and the research approach, the parameters of the thesis begin to emerge in sharper relief. To consolidate the growing understanding of the research, and with these issues in mind, the next section

of the chapter provides an overview of the thesis' research methodology and theoretical approach.

1.4 THE RESEARCH METHODOLOGY

The term “information system” (IS) is often used to denote an inter-related system of ICTs, alongside the socially embedded nature of these technologies:

“Traditionally, an information system has been defined in terms of two perspectives: one related to its function; the other, to its structure. From a structural perspective, an information system consists of a collection of people, processes, data, models, technology and partly formalised language, forming a cohesive structure that serves some organisational purpose or function. From a functional perspective, an information system is a technologically implemented medium for the purpose of recording, storing and disseminating linguistic expressions as well as for the supporting of inference making. Through performing these elementary functions, IS facilitates the creation and the exchange of meanings that serve socially defined purposes such as control, sense-making and argumentation (i.e. the formulation and justification of claims). In either of these two perspectives on Information Systems, it should be noted that humans are included within its boundaries which means that the services provided by an IS in part depend upon human capabilities and contributions”

(Hirschheim *et al.*, 1995: 11-12).

“The study of information systems is a multi-disciplinary subject and addresses the range of strategic, managerial and operational activities involved in the gathering, processing, storing, distributing and use of information, and its associated technologies, in society and organisations”

(UKAIS Newsletter, May, 1995).

A detailed investigation of the IS discipline and its nature and status is beyond the scope of this thesis. However, the provision of an overview of the field is appropriate for the purpose of locating this research. The IS field addresses ICTs in their social contexts, as opposed to the technical study of computing or the various social science disciplines,

including management. For the purposes of this thesis, then, IS is taken to include the socio-technical network (the hardware, software and, not least, the social system) of the provision of information.

Information Systems Development (ISD) has been described as “an orthodoxy (centred around structured methods), with many complementary or alternative approaches, some based in practice, and some more academic” (Rose, 2000: 18). ISD encompasses the dual activities of analysing business systems and designing computerised information systems to support them. Technical accounts of ISD are often based on linear process models, which presuppose that development can be organised in a set of time-delineated steps that are consequent upon each other. Hirschheim *et al.* (1995), however, sees systems development as encompassing a range of activities in a social context, including the social factors involved in designing, building, implementing and maintaining an information system. Systems development can be considered to be “multi-dimensional social change” taken in order to “achieve or maintain” an objective (Lyytinen, 1987). It follows, then, that this research concentrates on the social rather than the technical elements of the problem situation. The choice of – and justification for – the Research Methodology is explained in Chapter 5. How the empirical data is linked to the theoretical framework derived from the literature is consequently explained in Chapter 6.

A combination of research methods was chosen by the researcher in order to increase the robustness and relevance of her research. This would, she felt, enable layers of analysis to develop, which, in turn, enabled her to compare interpretations and conclusions, qualifying the validity of the research (Kaplan and Douchon, 1988; Keen, 1991; Baskerville and Wood-Harper, 1996; Mingers, 2001a; 2001b). These reasons contributed to her justification for this choice of research methodology combination: ACR, Dialogical AR and SSM, all of which generated from Action Research. This distinctive mix of research methodologies provided her with the means to address this research agenda – ACR and Dialogical AR methods provided the focus for the research on the seven case studies, while SSM conceptual modelling examined how to resolve policy development with SME needs. ACR and Dialogical AR enable discussions to take place about the requirements of SMEs within the context of their organisational, or cultural, situation.

Broadly outlined here, this combination of methodologies enabled the definition of relevant “in-context” notions to emerge.

ACR is an amalgam of, and compromise between, intervention or change (Action Research) and interpretation or understanding (soft case study). Braa and Vidgen (1997) advocate ACR as a methodology providing a pragmatic and feasible approach for investigating subjects “in-context” on a small scale based on a deep conceptual understanding. It is a means of adapting SSM’s action research so that it can become useful as a realistic research strategy (Vidgen and Braa, 1997). (ACR is described in Chapter 5.3.6).

Dialogical AR (a form of Action Research proposed by Martensson and Lee, 2004) requires “reflective one-on-one dialogues” between a case organisation principal and the researcher to take place “periodically” in a setting removed from the organisation under review in order to reconcile theory with the organisational context. (Action Research is described in Chapter 5.3.2, and Dialogical AR is explained in Chapter 5.3.4.)

SSM provides an “explicit, organised and defensible” means of reconciling different perspectives in a way that is appropriate to all parties involved (Wilson, 2001). The process culminates with the construction of a “Rich Picture” of the articulated problem situations or issues (Checkland and Scholes, 1990a; 1990b; Wilson, 2001). This “Rich Picture” identifies the factors relevant to the research, and illustrates the information and resources of the situation. (SSM is described in Chapter 5.3.3.) A “Rich Picture” illustrating the problem situation explored in this thesis is presented in Chapter 10.6.

Soft systems studies (such as this) must be accurately expressed through their models.⁶ SSM is a way of understanding and working through complex real-life situations. SSM has not been used often in SME situations. Given that this research concentrates on reconciling three anachronous, asynchronous areas (that of the policy arena, that of e-business as a form of innovation, and that of SMEs), and also given that SMEs seem to be oblivious to extant policy initiatives, the researcher faced the challenge of how to construct appropriate SSM models that captured, linked, and then reconciled the

⁶ This is explained in some detail in Chapter 5.3.3.

complex problem situation. She borrowed the conceptual modelling process from the 1981 Galliers *et al.* soft systems study. Although that study had a very different context (that of defining and structuring the situation in London's Camden Council in order to organise open employment for handicapped people), the studies share the fundamental premise of attempting to draw together and reconcile two dichotomous worlds with government agencies as service providers within a soft systems study. By utilising the modelling process featured in *that* Galliers *et al.* study, it was possible for the researcher to illustrate the problem situation in *this* one, and to then draw conclusions about ways to structure a meaningful dialogue between the problem situation owners. She could thereby attempt a resolution of the problem of how to map the disparate "worlds" of this research.

This chapter has thus far examined the problem situation. This examination was followed by an introduction to the researcher's chosen methodological and theoretical approach. (The researcher explored a number of alternative theoretical and methodological approaches – these are described in Appendix M.) The methodological framework for the research has been outlined, a justification of the decision of the researcher to embark upon this course provided, and the research methods aligned with the focus of study. Finding a framework capable of supporting the researcher's aims was a decisive factor in her understanding to what extent – and how – her research priorities could be addressed. The links between the empirical data and the theoretical framework derived from the literature will be presented. The research procedures, and the data collection and data analysis techniques are introduced in order to enable the reader to clearly map the researcher's intellectual journey.

The next section of the chapter therefore develops the relevant theoretical concerns presented here in order to transform them into the detail of practical research design – the collection and analysis of valid empirical data. The development of the research thereby unfolds.

1.5 THE RESEARCH PROCEDURES

To a great extent, this research was a continual re-negotiation of the perceived problem(s). The specification of a problem situation was expressed and a proposal to

address it was articulated. The “reflective dialogue” with the UK SME case organisation principals threw into relief and defined the relevant issues, whilst attention on the government policies and services (and their delivery problems) led to more focused strategies as the deeper, more fundamental (yet subtle), problems gradually emerged. As the “practice” of research unfolded, key factors were established, and the relationships between these factors and their relative importance were identified.

In practical terms, the research was conducted in three main phases:

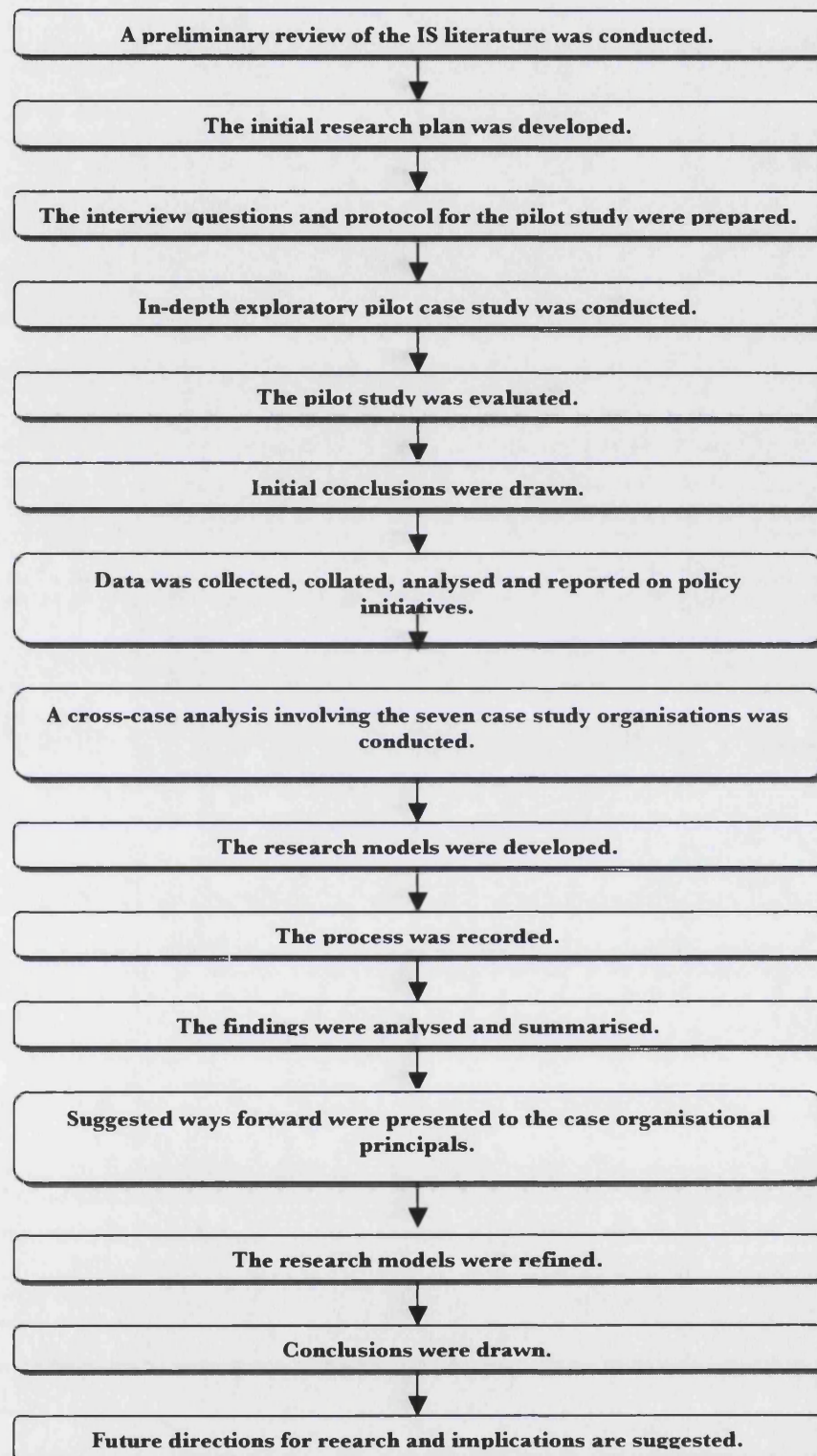
- First, the import of both SMEs and e-business were separately examined, then EU and UK government policies, services and initiatives generated for their benefit were reviewed. Emphasis was placed on hard data and substantive analysis. Detailed tables and charts were provided for each critical area, along with an overview of national data produced by international organisations, unclassified government data, and the results of original research.
- Second, a novel mix of methodologies (Action Case Research (ACR) and Dialogical Action Research (Dialogical AR)) was applied to the seven UK SME case studies. The researcher spent a considerable period of time with the case organisation principals in Dialogical AR-inspired “reflective dialogues.”
- Finally, the findings arising from the case organisations relating to the disparate “worlds” of the research were analysed and reconciled through the SSM conceptual modelling process. The conclusions the researcher arrived at were checked with the case organisation principals in order to ensure that they were systemically desirable and culturally feasible.

Looking back at the research period, these three main phases can be further broken down into the following steps:

- A preliminary review of the IS literature was conducted.
- The initial research plan was developed.
- The interview questions and protocol for the pilot study were prepared.

- An in-depth exploratory pilot case study was conducted in order to gain a better understanding of the nature of e-business adoption and implementation by SMEs, and to identify and consolidate the primary research questions and direction.
- The pilot study was evaluated.
- Initial conclusions were drawn.
- Data was collected, collated, analysed and reported on policy initiatives.
- A subsequent exploratory/explanatory cross-case analysis involving the seven case study organisations was conducted.
- The research models were developed.
- The process was recorded.
- The findings were analysed and summarised.
- Suggested ways forward were presented to the case organisation principals.
- The research models were refined.
- Conclusions were drawn.
- Future directions for research and implications are suggested.

These research steps are illustrated in Figure 1.7.

**Figure 1.7 – The Research Steps**

The researcher's analysis was focussed throughout the course of the research period on ascertaining how – and to what extent – EU and UK government policy initiatives aid SMEs to overcome the barriers to e-business adoption and implementation, and to assist them to formulate strategies for collaboration with SMEs. The pilot study (on Berkeley Square Gallery) focussed and prepared the researcher by clarifying what factors and issues were likely to be most important to UK SMEs. Following on from this, each of the case organisations were investigated in detail in order to gain a deeper understanding of all of the facets of the problem situation, and to identify important factors influencing SME e-business adoption and implementation.

There are particular advantages in conducting a case study in order to examine and understand a complex social phenomenon. The method enables “an investigation to retain the holistic and meaningful characteristics of life events – such as organisational and managerial processes” (Yin, 1994: 13). The case study can be seen as an empirical enquiry focussed on a particular phenomenon and its relation with its real-life context (Yin, 1994; 2002). Pettigrew (1989; 1990) has stressed the importance of a theoretical or purposive strategy for choosing cases to review, the rationale being that given the small number of organisations that can realistically be included, a selection strategy is needed to serve as a lens to magnify the research topic. In a similar vein, Eisenhardt (1989) suggests that selecting polar types of case studies is more likely to extend emergent theory. A concerted attempt was made in this research, therefore, to select very different SME cases that also had differing levels of e-business experience.

According to Drew (2002), there is a notable absence of well-structured multiple case study designs in the IS literature. Stake (1994) characterises collective case studies as instrumental case studies (those that provide insights into an issue or refine existing theory) extended to several cases. (Case Study research is described in detail in Chapter 5.3.5, while Chapter 6.4 describes the *modus operandi* for the selection of the case organisations participating in this study.)

The research concentrates on seven specific and detailed UK SME case studies. These are: -

- *Berkeley Square Gallery* <www.bsgart.com> - Established in 1988, this commercial London gallery has a staff of five that services a client base located mainly in the USA and Far East Asia.
- *Davis & Co.* <www.davisco.net> - A London law firm with a network of 40 lawyers and support staff built entirely around flexible and remote working.
- *Design Bridge* <www.designbridge.co.uk> - A privately owned group of four brand design companies with a staff of 145 people and a turnover of £12 million.
- *Foyles* <www.foyles.co.uk> - At one time the world's largest bookstore, Foyles has only recently embraced the most fundamental aspects of technology.
- *GF-X* <www.gf-x.com> - Founded in London in 1998, GF-X has developed a b2b trading platform to exploit the airfreight sector. The company has 80 employees and 75 contract technologists, with bases in London, New York, Dubai and Tokyo.
- *Lobster* <www.lobster.co.uk> - Established in 1999, Lobster caters to the sophisticated gourmet food niche market. The business focuses on delivering products that one could not find stocked in a typical supermarket.
- *Toast* <www.toastbypost.co.uk> - Started in 1997 in the kitchen of the Welsh countryside home of a married couple, this clothing company has turned into a multi-million pound mail order enterprise.

The case organisations were explored in interviews and Dialogical AR-inspired “reflective dialogues” with the case organisation principals. Three (Berkeley Square Gallery, Davis & Co. and Lobster) are presented in detail in Chapter 7. The remaining four case studies (Foyles, G-FX, Design Bridge and Toast) are outlined in somewhat less detail in Chapter 8. At the beginning of the research period, the latter four case organisations could all be classified as SMEs. However, by the time the researcher was writing up, due to either organisational growth or to having been purchased by a conglomerate, the case

organisations in the latter group no longer fit the criteria of an SME in UK and/or EU official government terms. The full research procedures were undertaken with these case organisations, however, and accordingly these cases are presented in Chapter 8 in order to accentuate and draw out the salient points in the discussion of the case studies *in situ*, which is presented in Chapter 9.

The semi-structured interviews (or “reflective dialogues”) with the case organisation principals were conducted within the context of their organisational and cultural situation, in line with Walsham’s (1995) “soft” case, or interpretivist, argument that interviews can “grasp” the interviewees’ enactments of their actions and events, in addition to their beliefs and aspirations. The nature of these “reflective dialogues” is explained in Chapter 5.3.4.

Informed by the literature, the researcher pre-established a set of categories and questions corresponding to the theoretical framework to direct the initial interviews. (These are featured in Appendix D.) However, the interviewees were actively encouraged to spontaneously express their views on any and all aspects of their operations and experience they considered to have been important and/or relevant. In this way, elements underlying the behaviour and attitudes within the case studies were elicited. The outcome of the interviews informed the subsequent models relating to government policy generation. (These models are presented in Chapter 10.)

A second set of questions was prepared as the fieldwork period came to an end, to mark the completion point for the “reflective dialogues” with the principals of the case study organisations. The primary motivation for asking this second set of questions was to identify whether – and if so, to what extent – the case organisation principals would/could be encouraged to donate their time and resources to participate with the policy makers who want to serve them, in order to generate more visible, appropriate and accessible policy initiatives for their benefit. (The second questionnaire is featured in Appendix I.)

Throughout all of the “reflective dialogues,” however, the interviewees were able to express their views on any and all aspects they considered important and/or relevant,

particularly as to how government policies could be rendered more appropriate to their needs. The researcher supplemented these interviews with interpretations of internal material and documents, external reports, industry reports, popular press articles, and observations. And as the research progressed, models drawn from the Galliers *et al.* (1981) SSM study were utilised to assist with analysis and definition. The Root Definitions (described in more detail in Chapter 5.3.3) expressed the “core” purpose of the perception to be modelled (Checkland and Scholes, 1990a; 1990b), and were combined with conceptual (“purposeful activity”) models. Used as analytical tools, these included several refinements of the “Rich Picture.”

Having introduced the core issues underlying the thesis, and having provided a clear justification for the choice of methodology, and having bolstered this choice rationalising the direct links between theory and the methodological work, the empirical data is thereby linked to the theoretical framework derived from the literature. In so doing, the justification for the research, in terms of both the topic and the chosen research method has been made more apparent. In addition, the description of how the research framework was utilised has been strengthened, and the pre- and post-fieldwork research influences and research framework have been made more explicit.

With this overview of the thesis in mind, the next section of the chapter introduces the contributions of the research.

1.6 THE CONTRIBUTIONS OF THE RESEARCH

The primary objectives of this research were: to make a methodological contribution to the IS literature (especially in relation to SSM theory development in multi-agency problem situations); and to set out a practical agenda for what needs to be done. Given that the thesis is also a novel synthesis of multi-methodologies, it utilises the distinctive combination of the complementary methods of ACR, Dialogical AR and SSM conceptual modelling, which has not previously occurred in the literature.

The introduction of e-business technologies into the business of SMEs is an important example of the multiple interests and concerns that come to bear on technology in

contemporary society. Within the management, IS and technology canons there is very little precedent for treating the diverse topical and theoretical issues raised by this example of technology adoption and implementation by SMEs and for examining relevant policies within the same analytical frame: disciplinary conventions tend to separate issues relating to organisational and technical domains into different spheres of interest, making it difficult to refer to the inter-relationships that exist between them.

The contribution that IS is in a position to make to SME and policy studies (which have until now remained largely at the margins of the IS canon), is signposted by this research. The interdisciplinary nature of IS places it in an excellent position to contribute to analyses of the complex inter-relationships surrounding SME adoption and implementation of e-business. The research has much to offer the IS canon in terms of deepening theoretical understandings of infrastructure and technology. It provides a basis for considering the implications of policy development. Issues concerning related dynamic market conditions and technology hype are also brought to the fore. The implications of these conditions with respect to the experience of SMEs are drawn out, adding a further dimension. These implications are linked to issues concerning not only policy development, but also network, partnership and consortia formation, critical time frames and contrasting priorities. The example of the seven UK case organisations during this time period is thereby, in itself, an important contribution to the IS literature.

The thesis addresses these research issues in the following ways:

- First, they are addressed through research design: an “in practice” view of e-business adoption and implementation and an interpretive approach to data collection and analysis prioritises events taking place in the field sites/case studies over theoretical distinctions.
- Second, the research issues are addressed through insightful use of SSM conceptual modelling to draw out the implications of relationships without recourse to the conventions of a particular subject discipline.

- Finally, the development of the complementary theoretical concepts of ACR and Dialogical AR forms an important contribution that can be extended to other disciplines in which these distinctive areas of concern converge.

The research design enabled the highly detailed aspects of technology adoption and implementation to be brought to the foreground of analysis. On account of this rich description, new dimensions are added to conceptions of e-business infrastructure. The diverse rationales that e-business technologies enact, and the complex nature and experience of SME adoption and implementation, are brought to the foreground, as are the choices inherent in e-business infrastructure design, adoption and implementation. Questions concerning the prioritisation of diverse concerns are raised. From this analysis, the implications of environment, embodiment and co-presence in technology adoption and implementation all offer important insights for IS literature.

In addition, the significance of contributing to more relevant and accessible theory generation is also implicitly suggested in the thesis. As well as extending the concept of e-business adoption and implementation by SMEs to include these interactions, the research engages with and examines several core concerns within the IS literature regarding theory development. The importance of this crossover is that it challenges theoretical parameters instated by the IS literature. A further contribution made to the IS literature, therefore, is to extend the concept of e-business adoption and implementation by SMEs to include the associated development of relevant government policies. Some researchers, including Jarvenpaa and Tiller (2000) have called for more policy studies in IS. The researcher thereby hopes that a greater scrutiny of the related values will henceforth be applied to SME organisational arrangements, partnerships and technical systems as much as it should be to their commercial practice.

Through the thesis' association with policy development, the concept of SME e-business adoption and implementation was deliberately designed in order to traverse traditionally distinct social (political, managerial and commercial) and theoretical domains. In this way, the significance of each domain to the other is drawn out in relation to the distinctive rationales for working with people, environments and material resources that the subject disciplines enact. The analysis that arises provides epistemic, pedagogic, commercial and

organisational concerns that contribute important dimensions to understanding SME e-business innovations. Taking into account these situated concerns and accounting for their significance can be seen to hold implications for both theory and practice.

The core concepts of the research were designed to enable reference to the range of actors who contribute to policy making designed to stimulate the adoption and implementation of e-business by SMEs. It can thereby be seen that integrating technology “in practice” is not necessarily subject to the same social and theoretical divisions that appear in the literature. Nonetheless, the theoretical concepts of ACR, Dialogical AR and SSM are shown to be highly relevant to processes of technology integration where the reconfiguration of technical arrangements is the site of multiple concerns. They contribute by facilitating reference to the:

- Varying character of epistemic values.
- Diverse methods through which subject disciplines construct rationality.
- Range of people, material resources and physical environments of which disciplines are comprised.

The empirical evidence that this research offers, therefore, represents an important contribution to the literature. As a cross-organisational study spanning a variety of subject disciplines, this study stands out from the majority of IS studies. The longitudinal aspect of the interpretive case studies is important as an account of contemporary developments in the adoption and implementation of e-business by SMEs, as an account of contemporary developments in technology use, and as a historical account capable of generating inter-relationships between diverse areas of relevance. In addition, this empirical evidence is designed to be utilised by policy makers.

The integration of these subject areas has not yet been sufficiently addressed by the IS literature. Part of the reason for this is the separation of pedagogic concerns into disparate bodies of research. The underlying nature of this separation is addressed in this research, and through its emphasis on empiricism, the crossover between theory and practice is opened up as an important area of analysis. Finally, this research moves beyond distinctions of management, policy development and technology studies as being

“either/or” propositions. In so doing, it draws out the significance of co-presence and the situated texture of the multi-disciplinary nature of IS. It follows that this research makes a valuable contribution to the methodological literature (in the sense that it expands the available understanding of possible methods for undertaking ISD).

The principal contributions arising from this doctoral study are:

- The thesis addresses the “notable absence” of well-structured multiple case study designs in the literature (Drew, 2002).
- The research tests existing knowledge about SMEs and policy generation in an original way.
- The development of appropriate and complementary ACR and Dialogical AR analysis tools constitutes a methodological extension of SSM conceptual modelling (incorporating ACR and Dialogical AR) for ISD, which focuses on social, political and cultural factors and the social construction of problems and solutions.
- The thesis is a soft systems exploration of a complex and ill-structured problem situation that has multiple owners and that can be viewed from a variety of stances – such research has rarely been considered in the literature (Galliers *et al.*, 1981).
- The thesis demonstrates a rich analysis and synthesis of the literature in its questionnaires and tables.
- The research is a new interpretation that builds on the findings of the Galliers *et al.* (1981) soft systems study. Although applied to very different circumstances, both studies examine a complex and difficult real world system with a utilitarian approach, both are soft systems studies that draw together two anachronous worlds, suggest a way of pursuing a dialogue that is meaningful to all involved parties, and examine a complex and difficult real world system with a utility of approach that in itself is a valuable contribution to knowledge.
- This research extends SSM, which has not been widely used in the SME environment: there are very few examples of iteration taking place in the literature.

- This thesis is an interpretive approach to the study of a domain about which we know very little.

Throughout the thesis, the conceptual framework synergising the key issues that are under-researched in the separate canons is explicitly articulated. In addition, the concluding chapter of the thesis includes a framework for policy development that shows how the theory might better work, illustrated in a model of a theoretical framework for policy initiatives that includes all the important aspects that the process should contain. The implication of this research is that future policy makers may become better informed about what SMEs need and about what sort of policies and initiatives might work.

The key contributions arising from the empirical research, in relation to the literature review, are clearly presented and summarised in tables in Appendices O⁷ and P.⁸

⁷ Appendix O - Findings Arising From the Case Studies Relating to the Literature Review. The references and information in this appendix is divided into the following subject areas:

- The barriers to adoption and implementation of e-business were significant enough to be reasons for not adopting e-business for these case organisations.
- Owner-manager is a passionate advocate of technology.
- Staff will usually only move on to another firm for a substantial pay rise, not career progression.
- Relied on existing physical infrastructure to deliver products to an online market.
- Considered knowledge to be a primary source of competitive advantage.
- Owner-manager likes to micro-manage.
- Making technological decisions based on advice from friends and/or the press, not experts.
- Limited computer skills of owner-manager.
- Amount of programming and maintenance work underestimated.
- Retrospective acknowledgement of need to define goals and strategies before launching online operations.
- Retrospective acknowledgement of need to define goals and strategies before launching online operations.
- Evaluating and updating online operations are often overlooked once a site has launched.
- The benefit of working more flexibly as a result of e-business adoption and implementation.
- The dual benefits of reduced costs and increased efficiency arising as a result of adopting and implementing e-business.
- Recognition of the value of organisational knowledge retention.
- The ability to “personalise” and uniquely target products and services to potential and existing clients as a competitive driver of benefits arising from e-business adoption and implementation.
- Espoused the benefits of SMEs engaging in formal and informal networking.
- Using networks and alliances to begin to operate in foreign markets.
- Formal networks can provide a number of advantages over stand-alone organisations, such as:
 - The sharing of financial risk (Jorde and Teece, 1989)
 - Technical knowledge (Marchewka and Towell, 2000)
 - Market penetration (Achrol and Kotler, 1999)
 - Internal efficiency (Datta, 1988)
- Their dealings with other businesses were informal and did not fall under any form of enforced governance, and thus were not considered to be either networks or alliances.
- Formal networks provide a number of advantages over self-directed SMEs including:
 - Technical knowledge
 - Assistance in product/service adjustment to suit a larger market
 - Assistance in business methods to suit business techniques

- Oblivious to extant government policies and initiatives to encourage SMEs to adopt and implement e-business.
 - Clients do not take full advantage of the technology available to them.
 - E-business enables small business operators to exercise new business models in established markets.
 - E-business enables small business operators to compete with larger organisations.
 - E-business enables small business operators to operate a niche business whilst obtaining access to a wider customer pool than would otherwise be the case.
 - E-business enables stock to be ordered daily.
 - Increased flexibility and scalability.
 - Fear of security risks a barrier to operating at full e-business potential.
 - Short-lived unsuitable alliances established due to lack of knowledge and/or experience.
 - SME, but with overseas branches.
 - Had to adopt e-business in order to remain competitive.
 - Market-dependent knowledge-based innovation.
 - Chaotic organisational structure.
 - A lack of investment in technology as a result of an SME owner/manager not understanding the advantage of adopting and implementing it.
 - e-Business enables small operators to operate niche businesses whilst obtaining access to a wider customer pool than would otherwise be the case.
 - Lack of financial and other resources hinders growth.
 - Interest in e-business and the internet grows as participants start gaining hands-on experience and realise its potential.
 - Recognition of the potential strategic opportunities offered by embracing e-business with regard to growing their market share.
 - Recognition of the potential strategic opportunities offered by embracing e-business with regard to surpassing competitors.
 - Recognition of the potential strategic opportunities offered by embracing e-business with regard to transforming their organisations.
 - Recognition of the potential strategic opportunities offered by embracing e-business with regard to personalising customer relationships.
 - Receiving the following benefits as a result of e-business adoption and implementation:
 - Costs.
 - Relationships with business partners.
 - Internal efficiency.
 - Quality of information as a result of e-business adoption and implementation.
 - Recognition of and support from senior management considered to be crucial to successful e-business SME adoption and implementation.
 - Recognition and employment of effective strategies to launch, adapt and maintain online operations considered to be crucial to successful e-business SME adoption and implementation.
 - Relevant analysis of the strategic opportunities e-business facilitates considered to be crucial to successful e-business SME adoption and implementation.
 - Comprehensive integration of e-business into the organisations' core activities (which in turn provide opportunities for further transformation) considered to be crucial to successful e-business SME adoption and implementation.
 - Formal planning processes resulted in a more focused approach being adopted.
 - Tactically, when the case organisations examined in this research looked to begin trading online, they aimed to provide additional channels to market.
 - Tactically, when the case organisations examined in this research looked to begin trading online, they aimed to increase agility, responsiveness, and/or the ability to react to changing market conditions (which would in turn increase market share).
 - Tactically, when the case organisations examined in this research looked to begin trading online, they aimed to achieve competitive advantage.
 - Tactically, when the case organisations examined in this research looked to begin trading online, they aimed to transform relationships with customers, suppliers and business partners.
 - Tactically, when the case organisations examined in this research looked to begin trading online, they aimed to redesign their business operations through innovating their organisations.
 - Tactically, when the case organisations examined in this research looked to begin trading online, they aimed to reduce overheads and costs per transaction.
-

- The data arising from these case organisations indicates that financial resources are not the leading factor in motivating or inhibiting an SME's adoption of e-business.
- Technology acquisition was customer oriented, in that they each sought a customer relationship management solution that consolidated information for better customer support and future sales growth.
- The barrier of e-Business not fitting (seamlessly) with their products/services was experienced.
- A lack of appropriate business models was experienced.
- Problems/issues with obtaining approval/raising funds for the investment and adoption costs were experienced.
- Problems with recognising, sourcing and allocating the relevant resources and skills were experienced.
- The culture of the company was a barrier to e-business adoption and implementation.
- Channel conflict issues were experienced.
- Lack of technical, operational and/or business management skills were a hindrance to e-business adoption and implementation.
- Uncertainty about adequate levels of acceptance by suppliers and/or consumers were experienced.
- e-Business didn't fit with the way their customers perceived their business.
- The advantage(s) of using e-business couldn't be seen.
- Customer education was needed.
- Development and operational issues such as disintermediation was experienced by the case organisations.
- Resistance at various levels (such as suppliers declining to provide products to purely online operations, supplier scepticism and reluctance to deliver directly to customers, a general lack of acceptance by suppliers and/or existing or potential customers, and channel conflicts).
- Difficulties with the implementation of business strategies (a lack of clear linkage between the organisation's business skills with the organisation's business strategies and the technology adopted).
- Lack of breadth in business skills and a lack of awareness of the range of other skills necessary to run an e-business.
- Operational issues, which varied according to each case organisation's). Technical difficulties arose in developing, implementing and operating the websites and systems. As a result, some of the case organisations (eg. Berkeley Square Gallery and Lobster) failed to maintain a continual program of website and system integration/innovation.
- The costs required to attract customers exceeded expectations.
- The requirement for ongoing funding for maintenance, expansion, and to cover operational losses.
- The necessity to revise and expand the initial business models and strategies employed.
- Unreliable strategic partners.
- Operating costs (although many of these costs were not technology investment costs per se, but rather human resource issues, such as staff training/re-training, and the costs of acquiring employees with new skills).
- Initially experienced difficulty locating IT providers they felt could trust to help them translate their businesses online / elected to take back design and maintenance to some extent, because online operations became an integral part of their business.
- The lack of assessment methodologies to gauge the costs of e-business relative to its performance.
- Determining ways to add value as margins grow slimmer.
- The emergence of new forms of delivery.
- Complacency.
- Staff resistance to change.
- Powerful trading partners seem to be accepted as technology leaders more readily than were governments.
- Fewer government interventions were recommended by the case organisation principals in the e-business area than in other areas where government provided other business support.
- The tendency of SMEs to prefer existing sources of advice rather than government-sponsored advisors.
- The participation rate of SME owner/managers in the suggested workshop(s) would (likely) be higher than the rate of respondents to questionnaires.
- Further research is considered to be needed in order to test the hypothesis of my proposed workshop(s) in an attempt to generate more appropriate policies for SMEs.

⁸ Appendix P - Findings Arising From the Case Studies Not Relating to the Literature Review. The references and information in this appendix is divided into the following subject areas:

- The firm has a proven track record of dealing with computer contracts, both for customers and for suppliers, and assists others.
-

Having examined the contributions of the research to literature, theory and practice, the next section of the chapter outlines a summary of the thesis. The concluding section of this chapter, it consolidates the discussion that has been presented in this chapter, summarising the implications drawn from the research, and concisely presenting all of the problem areas the thesis explores. This concise presentation is shown in order to illustrate how the thesis works towards drawing together and reconciling – in a “systemically desirable and culturally feasible” way – the asynchronous “worlds” of SMEs, e-business and policy makers.

1.7 SUMMARY OF THE THESIS

The introduction to the research areas that has been provided in this chapter has opened up to scrutiny the issues that will be explored in more detail throughout the thesis, and has the potential to gain a more nuanced understanding of how governments can contribute to SMEs’ successful adoption and implementation of e-business. The researcher believes that the most desirable circumstances for this will be achieved when appropriate policies are introduced. By identifying the major facilitators and inhibitors, this study may help government and industry bodies to provide appropriate information and support, and thereby facilitate e-business adoption and implementation by SMEs.

The research in this thesis encourages critical consideration of the reach and scope of government policies, both in terms of who is served by them and who is not, and in terms of the limits of their remit. It suggests a way of drawing together related issues. In this way, the research affords a greater scrutiny of relationships that imply a disaggregation of government services to SMEs. This, in turn, offers the potential to look into questions concerning SMEs’ issues associated with technological innovation. Further, the research deepens a critical awareness of the unfamiliar relationships and associations that the introduction of new technology brings, which also serves to highlight issues involved in integrating new technologies. The research also supports an awareness that SMEs are

-
- The level of growth experienced by the case organisations is uncharacteristic of the SME sector as a whole.
 - These case study principals also felt that many of the systems and practices they needed to operate effectively online were already in place before making the decision to launch online operations. They believed that, as a result, they would be subject to fewer operating costs than their competitors (this, however, has not proved to be the case in any of the case organisations).
 - Staff will usually only move on to another firm for a substantial pay rise, not career progression.
-

important, which brings levels of engagement and visibility to the fore of their operative processes, and their contribution *en masse* to the economies in which they operate.

The design of the research incorporates learning from empirical situations informed by theory. Devising a project that is informed by previous projects and that theoretically presents a sensible way of proceeding, however, results in difficulties as to how to define what constitutes practical or research success. The researcher intends that this exploratory research influences events – or precipitates change – in some observable way, both in the practical situation and in the research community.

The thesis is structured in ten chapters:

- In this first chapter, the motivation, background and objectives of the research have been presented and explained.
- With the research objectives specified, the attention in Chapter 2 turns to describing SMEs in more detail.
- Chapter 3 explains the nature of e-business and technological innovation.
- Chapter 4 presents an account of the relevant EU and UK policy initiatives.
- Chapter 5 reviews and discusses the research methodology, and describes the alignment of the research method with the focus of study.
- Chapter 6 details the research procedures, including the development of the research questions, the data collection and data analysis, the selection of the case organisations and the role of the researcher.
- Chapter 7 describes three UK SME case studies in some depth.
- Chapter 8 provides an overview of the remaining four case organisations.
- Chapter 9 illustrates the case organisation principals' perspectives, synthesises the research, and presents the rich understandings that have arisen.
- Finally, Chapter 10 describes the advances made in the research, makes conclusions and suggests recommendations for future research. Reflection on the work is organised in the following manner: an evaluation according to the criteria for interpretive research is followed by an exposition of some of the limitations of the research, then by the methodological, empirical and theoretical reflections. The thesis concludes with an outline of future research directions.

Figure 1.8 illustrates the layout and flow of the thesis' chapters.

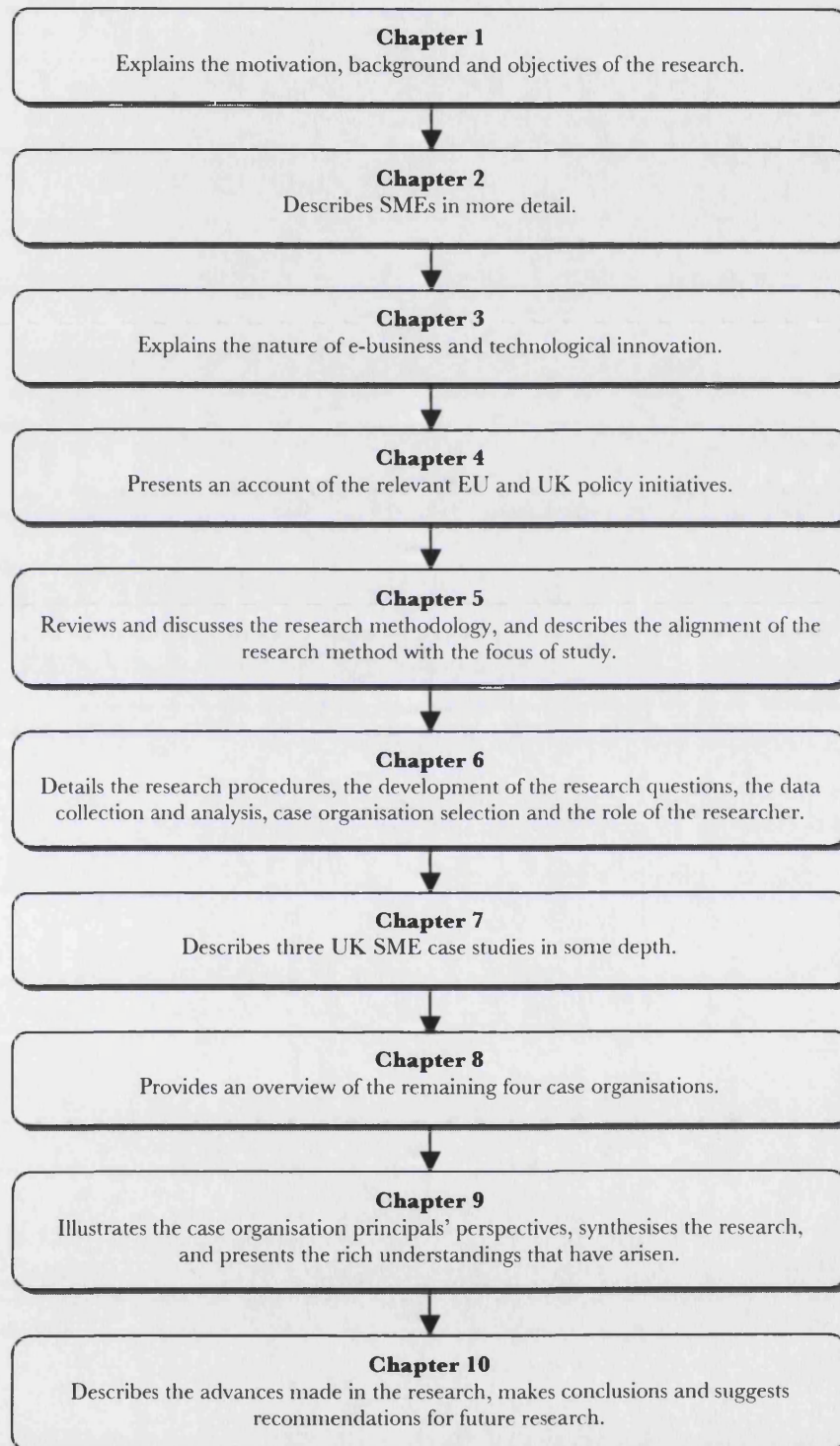
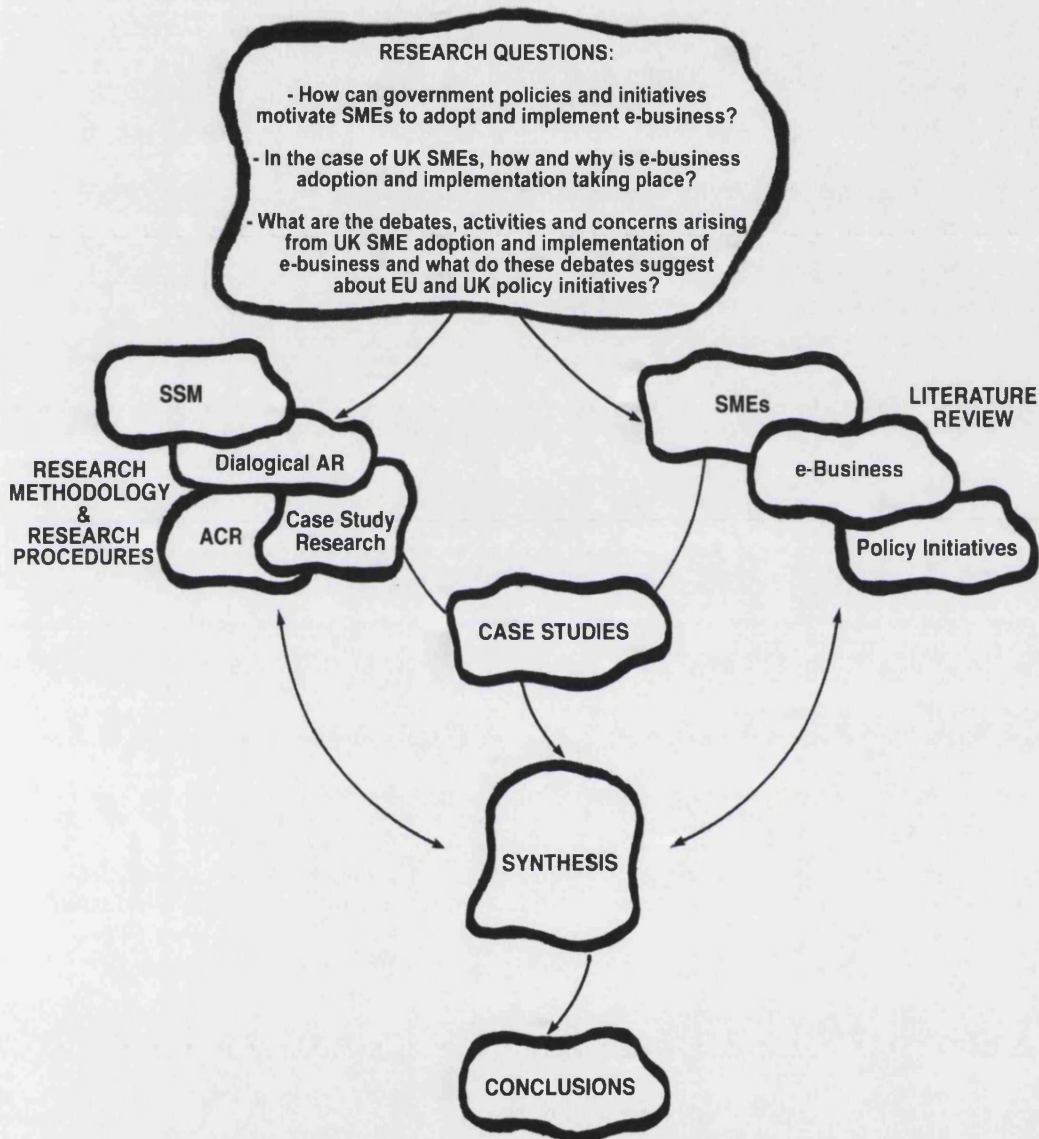


Figure 1.8 – The layout and flow of the thesis' chapters

Figure 1.9 illustrates the structure of the thesis.

**Figure 1.9 – Structure of the thesis**

The following three chapters form a triumvirate of thesis background investigations, exploring, respectively: SMEs; innovation and e-business; and EU and UK policy

initiatives developed to promote SME innovation and e-business adoption and implementation. Collectively, these three chapters form the thesis' Literature Review.

In the next chapter, the nature of SMEs is explored. The case is made that comparatively few empirical studies exist concerning e-business adoption and implementation by SMEs in the UK and the EU. A description of SME characteristics is followed by an explanation of entrepreneurship, of SME employee relations and training, of SME familial and social structures, and of the extent to which SMEs participate in networks and alliances. These issues are all central to the operations of an SME. An examination of SMEs was necessary in order to present the relevant key points that informed the choice of topic and the research approach relating to this aspect of the study. These debates are expanded upon in Chapter 3, in which the literature is drawn further upon so as to explore the nature of, and to extend questions concerning, the motivation(s) for, and genesis of, innovation. Chapter 4 concludes the triumvirate by outlining the situation of SME e-business adoption and implementation in the UK and the EU.

Supplementary information referred to in this chapter is located in the following appendices:

- Appendix A – The Advantages of e-Business Adoption and Implementation
- Appendix B – SME Characteristics
- Appendix C – Drivers to e-Business Adoption by SMEs
- Appendix D – Interview Questionnaire
- Appendix E – Barriers to e-Business Adoption by SMEs
- Appendix F – The Disadvantages of e-Business Adoption and Implementation
- Appendix I – Incentivisation/Workshops Questionnaire
- Appendix K – EU Policy Initiatives and Programmes Aimed at Stimulating Innovation and/or the SME Sector
- Appendix L – UK Policy Initiatives and Programmes Aimed at Stimulating Innovation and/or the SME Sector
- Appendix M – Alternative Theoretical and Methodological Approaches
- Appendix O – Findings Arising From the Case Studies Relating to the Literature Review

- Appendix P – Findings Arising From the Case Studies Not Relating to the Literature Review

Chapter 2

Background to the Research – SMEs

2.1 INTRODUCTION

Generally, there is a paucity of SME-focused studies exist concerning e-business adoption (Rotch, 1987; Brock, 2000; Dixon *et al.* 2002; Mathiyalakan, 2003). Even fewer studies offer a longitudinal analysis of e-business adoption and implementation by SMEs (Windrum, 2004). As e-business adoption and implementation is an ongoing process, it (usually) takes time before an organisation becomes fully engaged in the successful use of the technology it has adopted (Mathiyalakan, 2003). Generally, there is a paucity of studies on micro- and small businesses in the literature (Palvia and Palvia, 1999). The three case study organisations examined in detail in this research are micro- or small businesses. The remaining four case studies are appraised in somewhat less detail, in order to draw out the salient points brought to light by the research. The researcher thereby not only aims to address, at least in part, the vacuum of research on micro- and small businesses, but also to provide policy makers, researchers and SME owner/managers with more profound insights into e-business adoption and implementation. The extent of academic research on SMEs is not commensurate with their importance to the economy. This point is made clear in this chapter. Few studies in the literature have addressed IS issues in the context of SMEs, and those that have are usually subject to two main constraints.

First, the body of empirical research on IS, ICT innovation and e-business adoption is overwhelmingly biased towards observations of large – primarily US – organisations. Comparatively few SME-specific theories and models have been developed for adoption, implementation and evaluation (Huang *et al.*, 2004; Tabor, 2004). It is not clear to what extent the results can be extended to SMEs, as the management and organisational theories and practices that are applicable to larger organisations are not always applicable

to smaller ones (Blau *et al.*, 1966; Attewell and Rule, 1991; Thong, 2001; Mathiyalakan, 2003; Blili and Raymond, 2003).

Second, SMEs are often treated as a homogeneous group. Many studies base their analysis on the single common characteristic of organisation size (Poon and Swatman, 1996b; 1997b; Griffen and Golden, 1998; Chappell and Feindt, 1999). The influences of organisation size and business activity on different adoption patterns among SMEs have not been paid enough attention. In particular, all sizes of SMEs are usually bundled into the same category, despite there often being significant differences between micro-businesses and larger SMEs, as well as between smaller- and larger-sized organisations within the SME category. The researcher argues, therefore, that e-business adoption and implementation is related to variables other than size: the type of business (Palvia and Palvia, 1999), its growth orientation (Birley and Westhead, 1990), and its governance structure (Huang *et al.*, 2004) all play important roles in an SME's willingness and capacity to adopt and implement ICTs generally, and e-business specifically.

The literature is marked by a lack of empirical research (Rotch, 1987; Brock, 2000; Dixon *et al.*, 2002; Mathiyalakan, 2003). Many impact studies have overlooked the key actors, the SME owner/managers and employees. Despite the SME IS-related research that has been undertaken (Levy and Powell, 1998; 2002; Levy *et al.*, 1999; Raymond, 1992; 2001; Zinatelli *et al.*, 1996), comparatively little is known about ICT use in SMEs, let alone e-business, and much longitudinal research has tended to be marginalised by cross-sectional studies. A considerable body of the research that has been carried out has taken a deterministic view of e-business, predicated on the assumption that its adoption and implementation is a good thing for SMEs (Poon, 2000; Poon and Swatman, 1999a; 1999b). Southern and Tilley (2000) suggest that this is due to a lack of analytical clarity on SMEs, which has in turn led to a limited conceptual understanding of the relationship between SMEs and technology. Research conducted from the perspective of an SME owner/manager reinforces the view that technology in SMEs only has meaning and can only be measured in the context of business activities (Blackburn and McClure, 1998; Fuller and Southern, 1999; Southern and Tilley, 2000). Indeed, managerial support and a sense of strategic direction would seem to be fundamental to e-business adoption and implementation success in SMEs (Blackburn and McClure, 1998).

Although the relationship between ICT adoption and implementation and SMEs is firmly entrenched in government policy, challenges have arisen due to a lack of analytical clarity on SMEs and how they should be described (Southern and Tilley, 2000). This, in turn, has led to a limited conceptual understanding of the relationship between small businesses and ICTs (Brock, 2000). In addition, little is known about how SMEs respond to the opportunities provided by ICTs, if indeed they see technology as an opportunity. Even less is known about why and how small businesses use ICTs (Southern and Tilley, 2000; Dixon *et al.*, 2002).

In this chapter, and the two that follow, a critical review of the academic and government literature relating to SMEs, e-business and policy initiatives is provided. The primary objective of this doctoral research is to draw these three dichotomous worlds together and find a way to reconcile them. To further this aim, these three chapters establish grounds for understanding the issues that have been associated hitherto with these disparate areas in order to integrate them in the research. In order to understand how a basis for mutual concern and constitution can be achieved, it is first necessary to understand the landscapes within which they each sit. For this reason, the bodies of literature relevant to SMEs, e-business and policy initiatives are addressed.

The previous, introductory, chapter provided examples of the three areas of discourse in which the thesis is implicated: SMEs, e-business and policy development. In order to inter-relate these aspects of the research, they must first be explained in more detail. By considering the three distinct bodies of literature, the parameters of the research begin to emerge. Following this explanation, the presentation of the research methodology, which will be examined in detail in Chapter 5, places them in a broad ensemble.

In this chapter, SMEs are explored, and the case made that there is a clear need for comprehensive studies of SMEs in the UK and the EU. The unique characteristics of SMEs are also outlined. This outline is followed by an explanation of the attributes of entrepreneurship, and then by an examination of the issues related to employee relations and training, familial and social structures and networking, all of which impact on SMEs' fundamental business operations.

2.2 SMEs

There is no single definition of an SME. *The Bolton Report* (Bolton, 1971) recognised that a business's size is relevant to the sector it operates in (i.e.. an organisation of a given size would be considered small in relation to a sector where the market is large and there are many competitors, whereas an organisation of similar size would be considered large in another sector with fewer players and/or generally smaller organisations within it). Similarly, *The Bolton Report* recognised that it may be more appropriate to define a business' size by the number of employees in some sectors, but to use turnover in others. Schemes that are targeted at SMEs usually adopt a variety of working definitions depending on their particular objectives.⁹

⁹ The UK's DTI uses the following definitions in its reports:

- Micro business - 0-1 employees.
- Small business - 0-49 employees.
- Medium business - 50-249 employees.
- Large business - over 250 employees.

Section 248 of the UK's Companies Act of 1985 has a slightly different definition, stating that a company is "small" if it satisfies at least two of the following criteria:

- A turnover of not more than £2.8 million.
- A balance sheet total of not more than £1.4 million.
- Not more than 50 employees.

The Companies Act further states that a "medium-sized" company must satisfy at least two of the following criteria:

- A turnover of not more than £11.2 million.
- A balance sheet total of not more than £5.6 million.
- Not more than 250 employees.

In February 1996, the EU adopted a single definition of SMEs to be applied across all EU programmes and proposals dating from 31 December 1997. The Communication recommended that member states, the European Investment Bank and the European Investment Fund adopt the definitions. However, the communication permits the use of lower threshold figures, if desired (European Parliament, 2001; European Commission, 2003a).

The EU recommended definition for a "micro" business is that it must have a maximum of 9 employees. A "small" business must satisfy the following criteria:

- A maximum number of 49 employees.
- A maximum annual turnover of 7 million euros.
- A maximum annual balance sheet total of 5 million euros.
- The maximum percentage of 25% owned by one, or jointly by several, enterprise(s) not satisfying the same criteria.

The EU recommendation states that a "medium-sized" business must satisfy the following criteria:

- A maximum number of 249 employees.
 - A maximum annual turnover of 40 million euros.
 - A maximum annual balance sheet total of 27 million euros.
 - The maximum percentage of 25% owned by one, or jointly by several, enterprise(s) not satisfying the same criteria.
-

The importance of the SME sector as the cornerstone of a country's economic prosperity is widely recognised (Fitzpatrick, 1998; G8 GIS, 1999; NOIE, 2002). SMEs comprise approximately 95% of the enterprises in most nations, and are responsible for employing, on average, between 60-70% of the workforce (OECD, 2000a; 2000b; 2000c; 2002a; 2002b). The SME sector is crucial to the UK and the EU's competitive development (Mulhern, 1995; Lanström *et al.*, 1997; Anderson Consulting, 1999; Hegge, 2002; Atkinson and Hurstfield, 2004). In 2002, SMEs accounted for over 99% of the 3.8 million total number of registered UK businesses, and for 52% of the UK economy's turnover (£1 trillion), compared with 48% from the UK's 7,000 largest businesses (SBS, 2003a; 2003b; 2003c). Figure 2.1 illustrates the contribution of UK businesses to the economy according to their size.

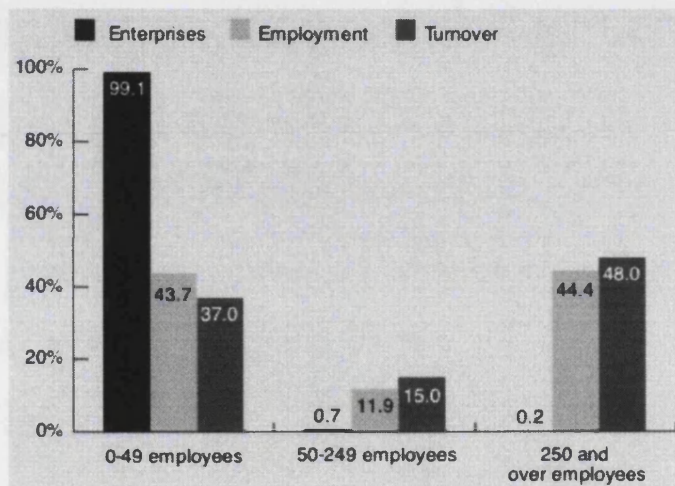


Figure 2.1 – Share of enterprises, employment and turnover by size of organisation, UK 2002 (SBS, 2003d: 14)

The SME sector is an important source of employment for the UK (SBS, 2002f; Small Business Research Trust, 2002). New businesses, especially smaller new businesses, are the greatest single source of new jobs in the UK, providing jobs at all points of the economic cycle (Keeble, 1998; SBS, 2004b). Despite SMEs being less likely to expand than large businesses, they account for 56% of the UK private sector workforce (Churchill and Lewis, 1983; Disney *et al.*, 2000; Dale and Morgan, 2001; SBS, 2004b). In any given year, SMEs are responsible for between 50-68% of UK job creation (Dale and Morgan,

2001; HM Treasury, 2001c; SBS, 2002a; 2002b; 2003b; Barnes and Haskel, 2003). Most job creation in the SME sector comes from start-ups rather than from the expansion of existing businesses (DeLone, 1981; 1988; Cooley *et al.*, 1987; Martin, 1989; DTI, 1993a; 1993b). Kim and Lee (1998) and Kennedy and Healy (1985) note that the “greater volatility” of SMEs translates to higher gains, losses and closures than for larger organisations. This volatility is illustrated by small businesses being responsible for around 66% of job losses (SBS, 2004b).

SMEs employ 12.6 million people in the UK, 6 million of whom are employed in organisations with fewer than 50 employees (this figure includes 2.3 million self-employed people, 1.6 million of whom are sole traders) (HM Treasury, 2001c; SBS, 2002a; 2002b; 2003b). According to the 2003 Small Business Service (SBS) Annual Survey¹⁰ (SBS, 2003b), just over 25% of SMEs have between one and nine employees, while fewer than 5% have between 10-49 employees. The proportion of SMEs employing 50 or more staff is minute, at just 0.7%. 69.5% of UK small businesses have no employees at all, and 25.3% have fewer than ten employees (SBS, 2003d). Figure 2.2 illustrates the size distribution of employees in UK SMEs.

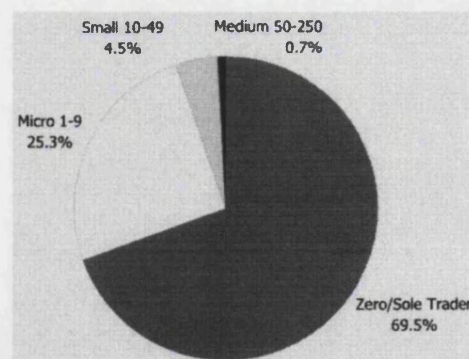


Figure 2.2 – Size distribution of employees in UK SMEs (SBS, 2003d: 18)

SMEs play a leading role in the development of new technologies and the creation of innovative products (Troye-Walker, 1998b). They contribute to local economic growth by providing local services and employment opportunities, and by enabling people to

¹⁰ Findings from the SBS Annual Survey 2003 (SBS, 2003b) are based on a sample of 8,693 UK SME respondents.

participate in the economic development of their own communities. SMEs also play a vital role in innovation, as the intermediaries between the public research infrastructure and large organisations, as developers of new ideas, and as adopters of new technologies (Fliegel and Kivlin, 1966; Chambers and Parker, 1999; IDC Research, 2001). SMEs have the potential to act as vehicles for the industrial and economic change of entire regions, as entrepreneurship attracts many who would otherwise withdraw from the labour market (Dou and Dou Jr., 1999; Countryside Agency, 2003). Entrepreneurship can thereby be a positive way out of unemployment, particularly in disadvantaged communities, where the potential wider benefits of enterprise can be even more significant. Small businesses often stimulate productivity growth amongst rival businesses (SBS, 2004b), and their dynamism can thus stimulate competition and innovation throughout the economy as a whole (CBI, 2000).

Due to increasing competitive pressure within the economy, incumbent organisations are motivated to increase their efficiency. If incumbent organisations are unable to match the productivity of either new organisations or of fast-growth SMEs, they are either forced to exit the market or their market share is reduced, thereby increasing the productivity of the market as a whole. In addition, by introducing new products and processes, SMEs create new markets (HM Treasury, 2001c; ICA, 2003). Even relatively small growth in the SME sector subsequently leads to greater national economic growth (Reynolds, 1998; Audretsch *et al.*, 2001; SBS, 2004b). Indeed, the growth of existing SMEs is a major factor in explaining the differential in productivity growth between the US and Europe (Bartelsman *et al.*, 2001).¹¹ The EU's member states have less open competition than the US does, due to comparatively heavy regulation (other than anti-trust laws)¹² and an industrial structure less conducive for e-business (OECD, 1997a; Addo *et al.*, 2003).

¹¹ The UK has enjoyed relatively strong growth in GDP per head in recent years. This has been achieved by a stable economic environment and a responsive regulatory framework. However, the UK still faces a persistent productivity gap of at least 20% compared to its major competitors – France, Germany and the USA (SBS, 2004b). As a result, the UK is still a middle ranking country in terms of the OECD's estimation of GDP per head (SBS, 2004b).

¹² EU antitrust laws prohibit agreements that negatively affect competition, but anti-competition agreements can be exempted if consumers can "share the fruit of economic progress" (Millar, 2000; Addo *et al.*, 2003). As a consequence, practices such as price fixing and market splitting are not illegal *per se* in the EU, if they can be demonstrated to benefit the consumer economically. Furthermore, these laws do not prohibit the existence of monopolies: instead, they regulate the behaviour of organisations with dominant positions and ban abusive conducts (such as the setting of unfair trading conditions and limiting production, markets or technological development).

Figure 2.3 illustrates the channels through which an active SME sector can increase productivity and economic growth:

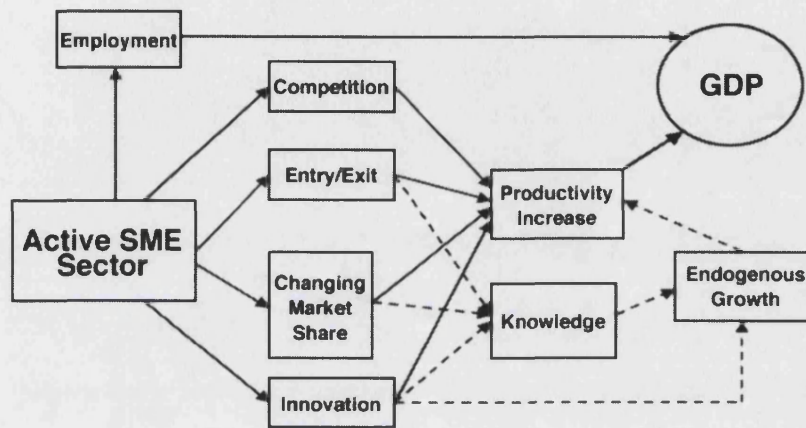


Figure 2.3 – The SME sector as a source of growth (HM Treasury, 2001c: 45)

Having established how crucial SMEs are to the economy, we now move on to the next section of this chapter, which describes how the unique characteristics of SMEs set them apart from larger organisations. These distinctions create particular issues when trying to understand the “value rationality” of SME owner/managers, since in day-to-day business operations, the organisational, entrepreneurial, familial and social structures in SMEs often differ from those of larger organisations. The description of SME characteristics is followed by explorations of the nature of entrepreneurship, of SME employee relations and training, and of familial and social structures in SMEs (each of which is an issue central to their operations), before turning to look at the extent to which SMEs participate in networks and alliances.

2.2.1 SME Characteristics

An understanding of the constitution and circumstances of SMEs is essential in order to be able to identify the fundamental differences between large and small organisations and the effects of these differences on innovation or ICT – and especially e-business – adoption and implementation (Ein-Dor and Segev, 1978; Cheney *et al.*, 1986; Boter and Lundstrom, 2001). Raymond (1985; 1990b) has stated that SMEs have their own unique qualities in terms of their environment, structure, psycho-sociological climate, management, and IS usage. This view is echoed by a number of other researchers

(Thompson and McHugh, 1995; Murphy, 1996; Bunker and MacGregor, 2000; Castleman *et al.*, 2000; Smallbone *et al.*, 2000; Thong, 2001; Curran and Blackburn, 2001).

Comparative studies of SMEs and large businesses have promulgated a characterisation of SMEs in the literature wherein SMEs: contain flat, flexible hierarchical structures; are dynamic by virtue of the owner/manager taking multiple roles in the daily running of the business; are more likely to have a closer and more direct relationship with their customers; have a limited resource base; and are more responsive to changes in demand than large organisations. SMEs benefit from organisational strengths that (often) eliminate the need for formal strategies to ensure effective communication and co-ordination (El Namaki, 1990; Tidd *et al.*, 1997). The characteristics of SMEs that would seem to affect e-business adoption and implementation most negatively include: their tendency towards centralisation of structure (which is linked to the proximity between ownership and management); their limited resources; and the fact that they have little to no control over their external environment (Raymond, 1985; 1990a; Westhead and Storey, 1996; Hill and Stewart, 2000; Gibson and Cassar, 2002). These inhibitors are often combined with a short-range management perspective (Welsh and White, 1981; Thong *et al.*, 1993; Smallbone *et al.*, 2000) in a turbulent environment that requires fast reactions from efficient management (Bekker and Staude, 1988; Peel and Bridge, 1998). As was noted in Chapter 1, a comprehensive list of references to SME characteristics is presented in Appendix B. A similarly comprehensive compilation of references on barriers to e-business adoption by SMEs is presented in Appendix E.

This rather simplified characterisation obscures the tremendous heterogeneity that exists amongst SMEs (Windrum and de Berranger, 2003; Windrum, 2004). Organisations categorised under the SME umbrella differ enormously, not only with respect to employee numbers and annual turnover, but also in their business activities, degree of international exposure,¹³ customer base(s), sector characteristics, and technological

¹³ Traditionally, SMEs wishing to export faced a number of internal and external obstacles (Dicht *et al.*, 1990; Devins, 1994; Hamill and Gregory 1997; Poon and Swatman, 1997a; Julien *et al.*, 1997; Bennett, 1997; 1998). About a fifth of UK small employers (20.8%) are exporters, conducting at least some of their business outside the UK. However, for most of these, their principal markets are close to home, with exports providing only a minority of their turnover. Only 4.2% of UK SMEs conduct most of their business abroad (SBS, 2003d). Bennett (1997; 1998) suggests that businesses that trade online felt less physical distance from foreign markets

sophistication. As a result, a great variety of organisational structures exist, some of which resemble those of large businesses, and some of which resemble those of micro-businesses.

The volume of research conducted from the perspective of SME owner/managers, many of whom founded and run “their” SMEs, is not commensurate with the importance of SMEs, either to their individual organisations or to the economy as a whole (Blackburn and McClure, 1998; Gray, 1998; Fuller and Southern, 1999; Southern and Tilley, 2000). The nature of entrepreneurship is therefore central to an understanding of SMEs and how they operate, and is explored in the following sub-section of this chapter.

2.2.2 Entrepreneurship

Entrepreneurial attributes such as creativity, flexibility and dynamism are associated with the SME sector. Entrepreneurship is the ability to seize business opportunities and exploit them to full advantage (Bifulco, 1997; Deakins, 1999; Poon, 2000). The importance of creating an environment rich with opportunities through the support of entrepreneurial characteristics cannot be overstressed (European Commission, 2001d). Entrepreneurship relies not only on individuals or groups possessing the skills to recognise and harness potential, but also on conditions that permit, encourage and sustain them in their endeavours. Governments¹⁴ can create the economic, fiscal and regulatory framework, infrastructure and environment in which entrepreneurs and the organisations they found and run are able to recognise, realise and maximise potential competitive advantage.

and were less concerned with resource constraints. Causal effect has not been established between this and perceptions of export barriers, though the finding could imply a generally more progressive and innovative attitude towards exporting than in organisations without websites. Logistics are usually not a problem within a country or within an economic region, but if an SME has little experience with international trade, then difficulties with monetary transactions, transport, insurance and duties may constitute a challenge (Kandasaami, 1998; Zimmerman and Mathiesen, 1998). The internet can generate sales leads by creating international awareness of an organisation's goods and services whilst avoiding many of the pitfalls of engaging in foreign cultures with foreign business practices, and without obtaining foreign representation (Boter and Holmquist, 1997; Gankema *et al.*, 1997; Bennett, 1998; Hornby *et al.*, 2002).

Key issues that affect IS professionals include: cultural, economic development, political/legal environment, technological status and national culture (Watson *et al.*, 1997: 92). SME owner/managers therefore need to exercise extreme caution when moving to a culture or economy with which they are unfamiliar. Their experience and expertise may be inappropriate if not irrelevant for a region with problems that are significantly different from their own (Watson *et al.*, 1997: 109-110).

¹⁴ In this research, the term “government” is defined as every body an SME meets from the public sector, including executive agencies and local, regional and national governments.

Although few government policies are specifically directed at creating an entrepreneurial culture, cumulatively all government policies affect the long-term factors that create conditions that (can) foster entrepreneurs (HM Treasury, 2001c). A stable and transparent economic and fiscal environment with steady economic growth can not only provide entrepreneurs with appropriate opportunities to foster entrepreneurial experiments, but also provide a chance to convince the market of their potential contribution (Bridge *et al.*, 1998; Carrier, 1999; Castleman and Cavill, 2001; Breen *et al.*, 2004).¹⁵

Entrepreneurship is closely linked to the psychological and behavioural aspects of individuals, and it would seem that an entrepreneur's personal initiative dominates the potential for an SME's success (McClelland, 1961; Chell *et al.*, 1997; Bifulco, 1997; Drucker, 1998; Culkin and Smith, 2000; Kuemmerle, 2002). Entrepreneurs share a commitment to the consistent and methodological exploration of possibilities to improve a business's potential (Donckels and Miettinen, 1997; Drucker, 1998). Entrepreneurs also share the distinctive characteristics of: feeling comfortable skirting the boundaries of propriety; assuming enormous personal risk; being willing to shift strategies quickly; being profoundly opportunistic; and doing whatever it takes to close a deal (Kuemmerle, 2002).

The EU-sponsored *SISMEs Report* (European Commission, 1996d) identified three main business drivers that propel SMEs to innovate: customer orientation, increasing competition, and time-to-market. As the vast majority of SMEs are founded and run by entrepreneurs, and as entrepreneurs are subjectively acting individuals, it is a major challenge to arrange effective support programmes for the provision of information and financial means, as their needs are heterogeneous (Kirzner, 1973; Lachmann, 1986; Curran and Blackburn, 1994; Johannisson and Monsted, 1997; Boter *et al.*, 1999). Relevant policy, therefore, depends on an understanding of what “really” drives entrepreneurship and innovation, the external barriers that prevent or delay it, and its impact on competitiveness and employment. The adoption of a comprehensive technology innovation support infrastructure would provide entrepreneurs with assistance through mentoring, alliances and networks, as well as increase the availability of, and

¹⁵ To this end, the UK has introduced its lowest ever corporation rates for small companies, the lowest starting rate for a major industrialised country, and comparatively generous R&D tax credits (HM Treasury, 2001a; 2001c). In addition, The Enterprise Act 2002 has reformed competition and insolvency law in order to ensure more open markets by removing much of the stigma associated with honest business failure (HM Treasury, 2001b).

enable access to, specific skills and tools (Jeal and Wroe, 1999; Leo and Booth, 2001). Incentive schemes and policies intended to lead to the sustained growth of the SME sector need, therefore, to take into account the culture, performance, and networking abilities of entrepreneurs and SMEs. This issue will be examined in some detail in Chapter 4.

Each year between 350,000 and 500,000 people in the UK start new businesses, representing between 10-13% of the total population of SMEs (HM Treasury, 2001c). Although the UK has one of the most favourable regulatory environments for starting a business (Nicoletti, 2000; Anderson/GrowthPlus, 2001), it is below average in terms of entrepreneurial activity (SBS, 2004b). The UK is only mid-ranked out of the 37 countries in the Total Entrepreneurial Activity (TEA) index, with a 5.4% score (compared to an average of 8.0% globally and a US score of 10.5%) (Harding, 2002). Table 2.1 illustrates the TEA Index.

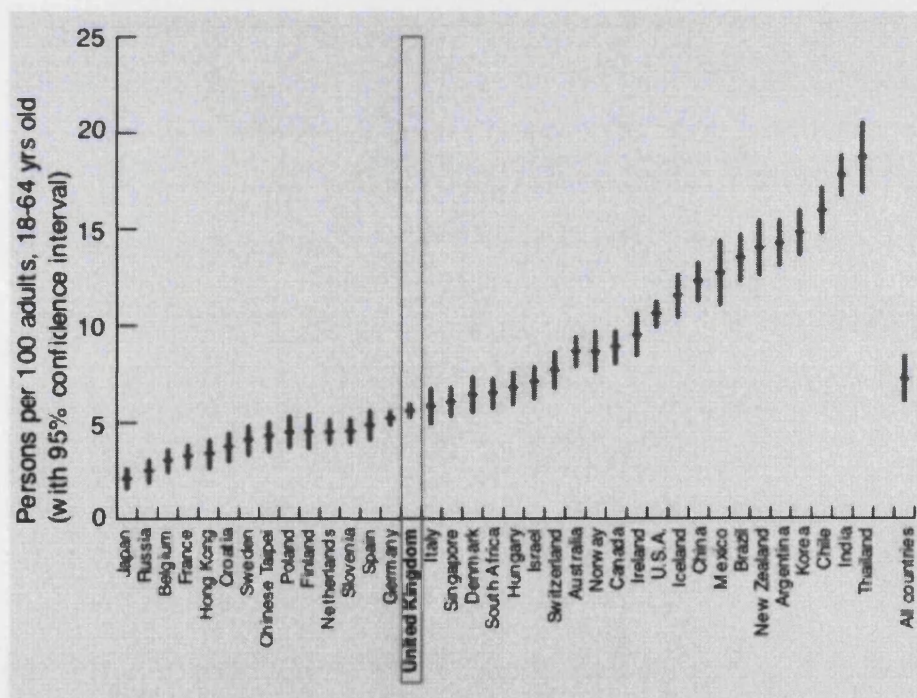


Table 2.1 – Total Entrepreneurial Activity (TEA) Index, 2002 (SBS, 2004b: 22)

UK performance is on a par with Germany and Italy, is higher than Japan and France, but is significantly lower than the US and Canada (Harding, 2002). There is still a wide

productivity gap between the US, France, Germany and other countries - SMEs have a crucial role to play in narrowing this gap (SBS, 2004b). Cultural factors would seem to be significant in explaining differences in enterprise activity between countries. One factor cited as a partial explanation for the disparity between US and UK levels of entrepreneurship is “fear of failure” (SBS, 2004b: 23). In the US, risk is seen as intrinsic to enterprise, and only 26% of potential entrepreneurs would not set up a business because of the risk of failure. The UK, however, measures at 34% (Flash Eurobarometer, 2002; SBS, 2004b). Fear of failure acts as a barrier to enterprise for between 28-34% of the UK population, compared with 20% of those in the USA (SBS, 2004b).

The main barriers to entrepreneurial activity are financial – there is a strong underlying fear of debt: 68% of potential UK entrepreneurs are scared of getting into debt. Although most entrepreneurs rely on their own resources, about a third have a bank loan or equity. Only 7% receive some form of public grant (HM Treasury, 2001c). Loss of income and security also prevents many potential entrepreneurs from starting a business or from becoming self-employed (Coveney and Moore, 1997; SBS, 2002b). 75% of potential UK entrepreneurs had not started a business because:

- They liked the security of working for someone else.
- Owning a business would be too much responsibility.
- They did not like uncertainty (Lloyds TSB, 2003).

Table 2.2 differentiates between the perceived risks that act as barriers to entrepreneurial activity in the US and the UK.

	US	UK
Uncertain income	45%	32%
Job insecurity	13%	16%
Risk of losing one's property	39%	64%
Devoting too much energy	15%	10%
Possibility of suffering personal failure	18%	14%
Possibility of going bankrupt	49%	54%

Table 2.2 – Frequency of perceived risk to entrepreneurial activity in the US and the UK (adapted from SBS, 2004b: 23)

However, the SBS Household Survey (2003b) found that the main motivations for starting a business were: the freedom to adapt their own approach to work (95%); to make more money (88%); and to be their own boss (82%). Indeed, 82% of those running their own UK business claim to enjoy it always or most of the time (Lloyds TSB, 2003; SBS, 2002b; 2004b). Self-employment is associated with flexibility over when, where and how much to work.^{16 17} Figure 2.4 illustrates rationales for UK business start-ups.

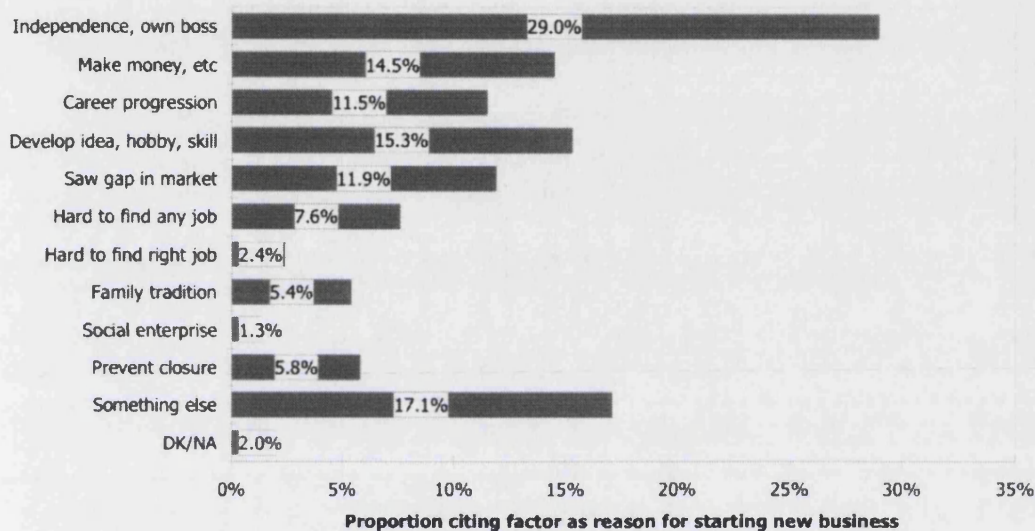


Figure 2.4 – Rationales for UK business start-ups, 2002 (SBS, 2003d: 31)

Despite the UK having one of the most favourable regulatory environments for starting a business, and despite government attempts to actively stimulate entrepreneurship (Nicoletti, 2000; Anderson/GrowthPlus, 2001; SBS, 2002d), the UK is below average in terms of entrepreneurial activity, and is only ranked “moderate” by international standards (Harding, 2002). Although it is comparatively very easy to start up a business in the UK,¹⁸ entrepreneurs seem to think that there are more requirements than is perhaps

¹⁶ Although this should make it an attractive option for those with carer responsibilities, and many mothers cite this as a relevant consideration, very few fathers do (Bell and La Valle, 2003; Lloyds TSB, 2003).

¹⁷ There is an increasing trend of professionals opting to start their own business later in their careers, which suggests a greater interest in work-life balance considerations as people become more financially stable (Barclays Bank, 2003).

¹⁸ When setting up a new business in the UK, the government requires that the following procedures are followed:

the case (OECD, 1999). In particular, the perception that regulations on employment wages and conditions, in addition to payroll tax, are difficult and demanding comprises a deterrent to potential entrepreneurs (Smith, 1998; HM Treasury, 2001c; Anderson GrowthPlus, 2001).

Having here examined the nature of entrepreneurship and how it fundamentally affects SMEs, the issues of SME employee relations and training are now examined in the next sub-section of this chapter, in order to ascertain how they might contribute to the development of a fuller understanding of how SMEs operate.

2.2.3 Employee Relations and Training

Although there is a notable lack of research on employee relations, recruitment and training amongst UK SMEs, McMahon (1994) found that SME owner/managers have a very haphazard approach to human resources. A (1984) study by Gunnigle and Brady found that the majority of SME owner/managers did not see a role for trade unions in their business operations. In fact, most of the owner/managers participating in that study claimed that if their employees joined a union they would, in turn, adopt a different management style. Further, some claimed that they would actually relocate or close down their organisation in retaliation, as they believed that unionisation would have an adverse effect on their management prerogative (Gunnigle and Brady, 1984). This finding was echoed by Lipset *et al.*, 1956.

Few SMEs were found to have formal communication mechanisms in place, either because (the owner/managers argued) the close relationship between employer and employee made them unnecessary, or because the owner/manager was “too busy” to develop such procedures. Nonetheless, the vast majority of the owner/managers participating in the Gunnigle and Brady (1984) study claimed to consult with their employees on holiday times, hours of work, and/or work shifts.

-
- Registering as self-employed with the Inland Revenue within three months (to pay Class II National Insurance contributions).
 - Registering a company name with Companies House.
 - Registering for VAT with Customs and Excise.
 - Registering to pay business rates on industrial or commercial premises (as many businesses are run from home to begin with, this applies mainly to the retail and manufacturing sectors) (SBS, 2003c).
-

Salaries and wages are usually considerably lower in SMEs (Kennedy and Healy, 1985; Wynarczyk *et al.*, 1993; Troye-Walker, 1998a; 1998b; Chappell and Feindt, 1999; Nunes and Cunha, 2000; Inland Revenue, 2001). Kennedy and Healy (1985) suggested several possible reasons for SME employees' acceptance of lower wages: a lower degree of unionisation, greater job satisfaction, and lower skills levels. McMahon (1994) found that for managerial and professional/technical employees in SMEs considerable emphasis was placed on individual or company rates, whereas for clerical and manual workers the emphasis was placed on national pay scales.

Hitchens and O'Farrell (1988) found that low skills levels, in combination with a lack of training, led to serious problems for SMEs. The human capital weaknesses of SMEs are not confined to management – inadequate expertise and skills are often found at a number of levels. This "skills gap" (especially at the intermediate supervisor level) means that the owner/manager becomes involved in sorting out even simple problems. Low skills translate into low productivity by ruling out the adoption of technology, as the SME owner/managers often do not realise that their companies need to improve their quality of skills, in part because they themselves have a skills shortage. Hitchens and O'Farrell (1988) further noted that UK SME owner/managers tend to have less technical knowledge of their products, and were not as well informed concerning the key competitive criteria in their specific industry segments, as were managers in larger organisations. The notable exceptions were those owner/managers who had worked abroad, who had gained experience in multi-national enterprises, or who were foreign nationals who had trained abroad (Hitchens and O'Farrell, 1988; McLarty, 1998).

As around 70-85% of SMEs in the UK are family businesses (HM Treasury, 2001c), familial domestic issues are paramount for many SMEs. From family-owned businesses with formalised family member roles, to the informal webs of association and assistance that are integral to family life, the "work-family balance" that struggles for acknowledgement in larger organisations is often at the forefront of SME owner/managers' concerns. The following sub-section of this chapter explores how SMEs deal with these familial and social structures.

2.2.4 Familial and Social Structures

Investments of time and money are not typically calculated with much precision in family-owned and/or small businesses (Tatnall and Burgess, 2002). To a significant extent, time is valued in terms of its opportunity cost separately from calculations about other business expenses. In addition, tasks and functions are less strictly divided in smaller organisations, especially, with initiatives (such as technological innovations) absorbed into the mainstream of business activities. This may result in a failure to adopt e-business or other innovative strategies that would afford competitive or market advantages (Castleman *et al.*, 2003; Castleman and Coulthard, 2001).

Women's business ownership in the UK is on a par with other European countries, but is far lower than US levels (HM Treasury, 2001c). It is estimated that 950,000 (approximately 26%) of the 3.8m SMEs in the UK are owned by women (ONS, 2001). However, this figure does not begin to capture the significant contributions that women make to co-owned family businesses. The distinction between "work" and "home" is particularly blurred for those who work from home and in family businesses (Pahl, 1984; Quesenberry *et al.*, 2004). This implies that the true contribution of women in the business sector is underestimated by surveys and statistics that rely on data provided by single owners.

Granovetter (1985) claimed that economic entities are "embedded" within their social context, and that networks of interpersonal relations are the key to understanding economic behaviour. His view fails, however, to take into account the ways that the economic/social actor makes decisions linked to their social and business lives. The distinctive social context of many SMEs shapes their approach to running their businesses. Weber (1985) argued that people act in terms of "value rationality" as a basis for economic behaviour. Business decision-makers are oriented to achieving recognised business goals (Clegg, 1990), but many SME owner/managers also weigh personal, domestic, community and lifestyle factors into their business decisions. Although this contradicts the assumption that economic behaviour is oriented to business performance, for SME owner/managers, value rationality is likely to either be significant to, or to dominate, business decision-making (Thompson and McHugh, 1995). This type of action is rational in that it is oriented to achieve goals not subject to financial calculation, and therefore not reducible to business outcomes. For many SME owner/managers, the value

rationality is strongly social and interpersonal. This is why SME owner/managers (often) do not show the same strategic rationalities as do managers of larger corporations, and why they are (often) uncomfortable with the efforts of governments and business groups to encourage formal networks and ways of operating (Mazzarol *et al.*, 1999; Gibb, 2000). These characteristics no doubt profoundly affect how SME owner/managers perceive e-business and also influences their technology adoption decisions and usage.

Nonetheless, SME owner/managers (usually) exercise direct control over their businesses because they are personally committed and involved. For the majority of the case organisation principals participating in this research, their business is at the core of their personal and social identity - to a great extent, they *are* their businesses. This is demonstrated (in Chapters 7, 8 and 9) by the way the case organisation principals talk with pride about the competitiveness and collaborative arrangements of their businesses, and their anticipated futures. There are a number of reasons as to why this is likely to be the case:

- Many SMEs are family-based - in these cases, family goals are likely to take precedence over business decision-making.
- Many small businesses are traditional enterprises that follow long-established practices and principles with traditional patterns of association and interaction.
- Some SMEs have been established by entrepreneurs who have consciously rejected employment in larger organisations because they wish to have independence, flexibility and/or freedom from supervision (even if the financial rewards are lower).
- Many SME owner/managers mistrust large corporations and government(s).
- Being an owner/manager may confer status and identity, the satisfaction from which may outweigh the economic benefits.
- Life-cycle issues are more likely to impinge on SME business decisions (eg. the anticipation of the sale or end of the company may precede the owner/manager's retirement for a number of years).
- The larger the organisation, the more specialisation it can afford, and the less likely it is to rely on direct control.

- For some SMEs, the primary goal has never been to achieve competitive advantage, growth or significant profit – their businesses are, in effect, leisure activities that pay for themselves (Pahl, 1984; Clegg, 1990; Thompson and McHugh, 1995; Gibb, 2000).

Although SME owner/managers tend to rely primarily on their family, friends, customers and suppliers for information and advice, alliances and networks could give individual entrepreneurs and SMEs ready access to the skills, capabilities and capacity necessary to compete globally, whilst allowing them to retain their culture and ownership characteristics. Acting as collective systems, smaller organisations are often able to perform better than large integrated organisations, in terms of their responsiveness to customer needs, flexibility, ability to identify and exploit opportunities, and to adopt new technologies (Jeal and Wroe, 1990). To what extent SMEs participate in such networks and alliances will be explored in the next sub-section of this chapter.

2.2.5 Networks and Alliances

Commercial relationships constitute the dominant form of interaction between organisations, but “non-market interactions” such as collaboration are becoming increasingly common in the EU (European Commission, 2001e). Such interactions include both formal and informal arrangements between companies operating in the same industry and between suppliers and customers along supply chains. On average, around a quarter of EU innovative businesses have been recently involved in some kind of collaborative arrangement (European Commission, 2001e).¹⁹ The rate of collaboration among innovating organisations increases with their size: around 20% of SME innovating organisations, approximately 50% of large innovating organisations in the manufacturing sector, and around 35% of non-collaborative innovators had introduced novel products in the previous three years, compared to 50% of those with innovation partnerships (European Commission, 2001e).

¹⁹ Among manufacturers, partnership was the most common form of collaborative arrangement, with other enterprises within the same company group (59%), followed by suppliers (49%), customers (48%), universities (38%) and public research institutes (33%). In the service sector, 68% of innovating collaborators worked with other enterprises in the same group, and collaborations with competitors were more than twice as common as those among manufacturers (European Commission, 2001e).

Thorelli (1986) defines a successful network as being two or more organisations involved in a long-term relationship. A network has also been described as being “an integrated and co-ordinated set of ongoing economic and non-economic relations embedded within, among and outside” organisations (Yeung, 1994: 476). Thus, for Yeung, a network embodies processes between organisations that may take a formal economic form, or that may be informal co-operative relationships, in which expertise and know-how are shared. Dahlstrand (1999) suggested that informal links might be conscious or unconscious network mechanisms. Other research (Keeble *et al.*, 1999; Day *et al.*, 1998; Davis *et al.*, 1999; O'Donnell *et al.*, 2001; Overby and Min, 2001; Damsgaard and Lyytinen, 2001) has stressed the importance of informal, rather than formal, inter-organisational links for SMEs.

Miles *et al.* (1999) suggested that SMEs decide to network as a result of a perception by an individual in an organisation that a given network may provide an opportunity to increase and capitalise on strengths without that organisation losing its identity. A number of studies have concluded that few SMEs are able to function to their potential without some form of inter-organisational relationship having been established (Gibb, 1993; Golden and Dollinger, 1993; Hastings, 1993; Ozcan, 1995; Gulati, 1995; Sachs, 1995; Gulati and Garguilo, 1999). Indeed, formal networks are often used by successful SMEs to “pool resources and talents together to reap results” which would not otherwise be possible (due to cost constraints and economies of scale) if the organisation “operated in isolation” (Dean *et al.*, 1997: 78). As SMEs' management structures are often flatter and less bureaucratic than those of larger organisations, so team and cross-functional orientation, in addition to efficient and informal communications, can become very influential (Raymond, 1985; Mulhern, 1995; Spender, 1996; Julien *et al.*, 1997; Lockett and Brown, 2000; Olave and Neto, 2001). Although successful SMEs usually learn to cultivate their customers to maintain their loyalty, formal strategic planning is usually uncommon (Pollard and Hayne, 1998; Giaglis *et al.*, 1999; Bunker and MacGregor, 2000; Jeffcoate *et al.*, 2000; 2002). Dealings with other SMEs can give rise to informal flows of beneficial information and advice (Auger and Gallagher, 1997; Tikkanen, 1998; BarNir and Smith, 2002), which benefit smaller organisations particularly (Kelley and Helper, 1999). For businesses that either provide a service or whose products are intangible, company image and reputation is crucial, and network membership can very often supply a stable,

trustworthy brand or image to potential customers (Mayon-White, 1993; Robertson *et al.*, 1996; Cropper, 1996).

Through involvement in formal and informal networks or alliances with a defined set of shared values, roles, responsibilities and governance, smaller businesses especially can access expertise at a number of levels, in addition to a buffer from the impact of market turbulence (Jarratt, 1998; Keeble *et al.*, 1999; Overby and Min, 2000). Such alliances and networks provide SMEs with a higher and more stable flow of information and resources (Rosenfeld, 1996; Miles *et al.*, 1999; Overby and Min, 2001; Premaratne, 2001). Long-lasting, stable collaborations between organisations can significantly increase their competitiveness (Buratti and Penco, 2001). Formal networks can provide a number of advantages over stand-alone organisations, such as:

- The sharing of financial risk (Jorde and Teece, 1989).
- Technical knowledge (Marchewka and Towell, 2000).
- Market penetration (Achrol and Kotler, 1999).
- Internal efficiency (Datta, 1988).

Other researchers have claimed that the SMEs that collaborate with business partners gain more benefit from technology adoption and implementation (Möller, 1992; Grönroos, 1994; Raymond and Bergeron, 1996; Gummesson, 1997), because networks, alliances and mentoring can provide SMEs with the assistance many need in order to adopt innovative ideas and practices, as well as to increase the availability of, and enable access to, specific skills and tools (Jeal and Wroe, 1999; Leo and Booth, 2001).

However, SMEs tend to be cautious about alliances and networks, despite the potential advantages of participation (Sengenberger *et al.*, 1990; Leo and Booth, 2001). Many SMEs avoid networking arrangements altogether, opting to remain self-directed (Sengenberger *et al.*, 1990; Drakopoulou-Dodd *et al.*, 2002). It would seem that relationships that are tightly coupled, especially, do not tend to suit the inclinations of many SME owner/managers: networks that are adaptable, dynamic and flexible would seem to be more attractive to them (Tikkanen, 1998; Achrol and Kotler, 1999; Overby and Min, 2000; Dennis, 2000; Marchewka and Towell, 2000). Factors such as the size

and the age of the organisation, its market focus, the educational level of its owner/manager, and the business sector it operates within, all contribute to an SMEs' capacity and willingness for not only formal network membership and participation but also technology adoption (Jeal and Wroe, 1999). A number of reasons for this are suggested in the literature. Drakopoulou-Dodd *et al.* (2002) found that more than 50% of SMEs derive their technical support, financial advice and business know-how from family and friends, while Dennis (2000) found that many SME owner/managers refuse to trust or co-operate with owner-managers of similar businesses in the same industry. Further, Gimeno *et al.* (1997) found that many SME owners negatively affect network potential by withholding information from their network partners.

Why is this so? By the very nature of business, all organisations relate to others and are therefore part of some form of mutually collaborative arrangement. While all businesses form relationships with suppliers and customers, it is the extent of the closeness, interdependence and consciousness of these relationships that determines whether or not they are part of a network. On the surface, these interactions may appear to be exchanges of goods and payments, but relationships cannot be measured or described merely in terms of financial transactions – for a relationship to be a network it requires a common set of goals (Nalebuff and Brandenburger, 1996). Network interactions can range from trading products to full alliances. The literature recognises a variety of strategic alliances as mechanisms for knowledge transfer (Carter, 1990; Mowery *et al.*, 1996; Tidd *et al.*, 1997; Dixon *et al.*, 2002; Thong, 2001). For example, an SME that is involved in product design for larger customers is involved in a process that involves innovation and understanding customer needs. This knowledge is seldom integrated into a wider strategic perspective, however, due to a preoccupation with day-to-day concerns (Chen and Williams, 1998; Chappell and Feindt, 1999; Loebbecke and Schäfer, 2001).

Links with customers and suppliers may replace the need to network formally by providing technical and marketing know-how for SMEs (Donckels and Lambrecht, 1997; Keeble *et al.*, 1999; European Commission, 2000a; Schindehutte and Morris, 2001). Other, less formal, networking can also take place through agencies such as small business associations and chambers of commerce, which provide advisory services, targeted knowledge and practical assistance to SMEs by means of legal, financial and technical

advice and/or training. They may also be skilled at representing the interests of SMEs in political lobbying and trade negotiations. Individual members of such networks usually operate formally within the umbrella organisation, but interact informally with fellow members (Dahlberg *et al.*, 2001). Such alliances can encourage innovation, expand product portfolios, and forge new supplier relationships (Maynard, 1996). However, a scarcity of resources usually restricts SMEs' activities in such alliances (Dyer, 1996), which do not necessarily protect SMEs, as network participants tend to learn as they go along how to better utilise networks and alliances as vehicles for gaining knowledge and skills whilst simultaneously protecting themselves from being “deskilled” (Lei and Slocum, 1992; Biemans, 1992).

Innovation (which will be discussed in the next chapter) seems to be strongly conditioned by proximity (or rather, the national and regional context in which it is embedded).²⁰ Policy supporting the social and cultural aspects of innovation and enhancing social capital as a key element of well-functioning regional innovation systems for SMEs involves broadening and extending the concept of network clusters. Providing R&D tax-reductions and/or subsidies is not enough to change the rationality or the boundaries of the innovation processes of SMEs. However, linking business angels, banks, venture capital funds and stock markets inter-regionally and trans-nationally may assist in the creation of a more entrepreneurial, innovative culture.

2.3 SUMMARY

In this chapter, the nature of SMEs was explored, and the case made that comparatively few empirical studies exist concerning e-business adoption and implementation by SMEs in the UK and the EU. A description of SME characteristics was followed by an explanation of entrepreneurship, of SME employee relations and training, of SME familial and social structures, and of the extent to which SMEs participate in networks and alliances. These issues are all central to the operations of an SME.

²⁰ Successful examples of the regional concentration of innovative small firms include Silicon Valley in northern California, the small machinery firms linked to Robert Bosch and Daimler Benz in Baden-Württemberg, and the industrial textile-producing districts in Italy (Cooke and Pavitt, 1997). In the UK, the Cambridge-MIT Institute is a self-sustaining local and regional innovative cluster of science parks, universities and large multi-national technology firms.

Table 2.3 synergises the key issues that arose from the review of SMEs in this chapter:

The Key Issues Arising from the SME Literature Review
<p><i>There is a clear and unambiguous need for comprehensive studies of SMEs adoption of e-business in the EU and the UK</i></p> <ul style="list-style-type: none"> • The extent of research on SMEs is not commensurate with their importance on the economy. There is a lack of studies relating to: <ul style="list-style-type: none"> • SME e-business adoption (Rotch, 1987; Brock, 2000; Dixon <i>et al.</i> 2002; Mathiyalakan, 2003). • The longitudinal analysis of e-business adoption and implementation by SMEs (Windrum, 2004). • Micro- and small businesses (Palvia and Palvia, 1999). • IS issues in the context of SMEs. • There is a limited conceptual understanding on the relationship between small businesses and ICTs (Brock, 2000; Dixon <i>et al.</i>, 2002; Southern and Tilley, 2000). • Much of the extant IS research into SMEs is subject to the following constraints: <ul style="list-style-type: none"> • Overwhelming bias towards observations of large, primarily US, organisations. • Few SME-specific theories and models have been developed for IS adoption, implementation and evaluation (Huang <i>et al.</i>, 2004; Tabor, 2004), and what is applicable for large organisations is not always appropriate for smaller ones (Blau <i>et al.</i>, 1966; Attewell and Rule, 1991; Thong, 2001; Mathiyalakan, 2003; Blili and Raymond, 2003). • SMEs are often treated as a homogenous group: <ul style="list-style-type: none"> ○ Many studies base their analysis on organisation size (Poon and Swatman, 1996b; 1997b; Griffen and Golden, 1998; Chappell and Feindt, 1999). ○ The influences of organisation size and business activity on different SME adoption patters have not been paid enough attention. • E-business adoption and implementation by SMEs should be related to variables other than size: <ul style="list-style-type: none"> • The type of business (Palvia and Palvia, 1999). • Growth orientation (Birley and Westhead, 1990). • Governance structure (Huang <i>et al.</i>, 2004). • Many impact studies have overlooked the key actors, the SME owner/managers and employees (Levy and Powell, 1998; 2002; Levy <i>et al.</i>, 1999; Raymond, 1992; 2001; Zinatelli <i>et al.</i>, 1996). • Much of the extant research has taken a deterministic view of e-business predicated on the assumption that its adoption and implementation is a good thing for SMEs (Poon, 2000; Poon and Swatman, 1999a; 1999b; Southern and Tilley, 2000). • Managerial support and a sense of strategic direction would seem to be fundamental to e-business adoption and implementation success in SMEs (Blackburn and McClure, 1998). <p><i>There is no one definition of an SME</i></p> <ul style="list-style-type: none"> • The Bolton Report (Bolton, 1971) recognised that it may be more appropriate to define a

The Key Issues Arising from the SME Literature Review

business' size by the number of employees in some sectors, but to use turnover in others.

- Schemes that are targeted at SMEs usually adopt a variety of working definitions depending on their particular objectives.
- A breakdown of the official definitions for micro-, small-, medium and large businesses in the EU and the UK are given in Section 2.2 of the chapter.

SMEs differ from large organisations

- Throughout the chapter, SME characteristics are presented. These are summarised in Appendix B – SME Characteristics.

The SME sector is the cornerstone of the economic prosperity of the EU and the UK

- SMEs comprise approximately 95% of the enterprises in most nations, and are responsible for employing between 60-70% of the workforce (Fitzpatrick, 1998; G8 GIS, 1999; NOIE, 2002; OECD, 2000a; 2000b; 2000c; 2002a; 2002b).
- The SME sector is crucial to the UK and the EU's competitive development (Mulhern, 1995; Lanstrom *et al.*, 1997; Anderson Consulting, 1999; Hegge, 2002; Atkinson and Hurstfield, 2004, among others).

Entrepreneurial attributes are associated with the SME sector

- Relevant policies depend on an understanding of what really drives entrepreneurship and innovation, the external barriers that prevent or delay it, and its impact on competitiveness and employment (Jeal and Wroe, 1999; Leo and Booth, 2001).
- It is important to create an environment rich with opportunities through supporting entrepreneurial characteristics (Bridge *et al.*, 1998; Carrier, 1999; Castleman and Cavill, 2001; Breen *et al.*, 2004; European Commission, 2001d; HM Treasury, 2001c).
- As the vast majority of SMEs are founded and run by entrepreneurs, and as entrepreneurs are subjectively acting individuals, it is a major challenge to arrange effective support programmes for the provision of information and financial means, as their needs are heterogeneous (Kirzner, 1973; Lachmann, 1986; Curran and Blackburn, 1994; Johannisson and Monsted, 1997; Boter *et al.*, 1999).
- An entrepreneur's personal initiative dominates the potential for an SME's success (McClelland, 1961; Chell *et al.*, 1997; Bifulo, 1997; Donckels and Miettinen, 1997; Drucker, 1998; Culkin and Smith, 2000; Kuemmerle, 2002).
- The UK is only mid-ranked on the Total Entrepreneurial Activity (TEA) index (Harding, 2002).

SME owner/managers have a very haphazard approach to human resources

- This aspect of SME operations is discussed in Section 2.2.3 of the chapter, and the findings
-

The Key Issues Arising from the SME Literature Review
<p>are comprehensively referenced in the summary provided in Appendix B – SME Characteristics.</p> <ul style="list-style-type: none"> • There is a notable lack of research on employee relations, recruitment and training amongst UK SMEs.
<p><i>Familial and social structures affect SMEs</i></p> <ul style="list-style-type: none"> • This aspect of SME operations is discussed in Section 2.2.4 of the chapter, and the findings are comprehensively referenced in the summary provided in Appendix B – SME Characteristics. • Investments of time and money are not typically calculated with much precision in family-owned and/or small businesses (Pahl, 1984; Tatnall and Burgess, 2002; Quesenberry <i>et al.</i>, 2004). • Tasks, functions and initiatives are absorbed into mainstream business activities – this may result in a failure to adopt e-business or other innovative strategies that would afford competitive or market advantages (Castleman <i>et al.</i>, 2003; Castleman and Coulthard, 2001).
<p><i>Formal and informal networks and alliances</i></p> <ul style="list-style-type: none"> • “Non-market interactions” such as collaboration are becoming increasingly common in the EU (European Commission, 2001e). • Few SMEs are able to function to their potential without some form of inter-organisational relationship having been established (Gibb, 1993; Golden and Dollinger, 1993; Hastings, 1993; Ozcan, 1995; Gulati, 1995; Sachs, 1995; Gulati and Garguilo, 1999). • However, SMEs tend to be cautious about alliances and networks, despite the potential advantages of participation (Sengenberger <i>et al.</i>, 1990; Leo and Booth, 2001; Drakopoulou-Dodd <i>et al.</i>, 2002). • The rate of collaboration among innovating organisations increases with their size – smaller businesses do not, for various reasons, explore the range of collaborative avenues open to them (European Commission, 2001e). • Formal strategic planning among SMEs is uncommon (Pollard and Hayne, 1998; Giaglis <i>et al.</i>, 1999; Bunker and MacGregor, 2000; Jeffcoate <i>et al.</i>, 2000; 2002). • SMEs that collaborate with business partners gain more benefit from technology adoption and implementation because networks, alliances and mentoring can provide SMEs with the assistance many need in order to adopt innovative ideas and practices, as well as to increase the availability of, and enable access to, specific skills and tools (Möller, 1992; Grönroos, 1994; Raymond and Bergeron, 1996; Gummesson, 1997; Jeal and Wroe, 1999; Leo and Booth, 2001).

Table 2.3 – The Key Issues Arising from the SME Literature Review

An examination of SMEs was necessary in order to present the relevant key points that informed the choice of topic and the research approach relating to this aspect of the study. These debates are expanded upon in the next chapter, in which, in order to develop the issues that have been presented here, the literature is drawn further upon so as to explore the nature of, and to extend questions concerning the motivation(s) for, and genesis of, innovation. Included is an examination of the IS, ICT, innovation and e-business bodies of literature, in order to identify the factors that compel organisations to adopt and implement e-business (this constitutes a core contribution of this thesis, as these canons are typically treated as separate), and an identification of the key benefits of e-business adoption and implementation. The next chapter concludes with an outline of the situation of SME e-business adoption and implementation in the UK.

Supplementary information referred to in this chapter is located in the following appendices:

- Appendix B – SME Characteristics
- Appendix E – Barriers to e-Business Adoption by SMEs

Chapter 3

Background to the Research – e-Business

3.1 INTRODUCTION

This chapter concentrates on e-business. The IS, ICT, innovation and e-business bodies of literature are all drawn upon, as many of the factors that compel an organisation to adopt and implement innovation are pertinent to the adoption and implementation of e-business. They have hitherto largely been treated as separate in the literature, however. This comprehensive embrace of the canons constitutes a core contribution of the thesis.

In this chapter, the potential benefits of e-business adoption and implementation are explored before the factors that either motivate or act as a barrier to adopt and implement e-business are outlined. Categorising e-business as innovation, the strategic organisational and management attributes that need to be put in place in order to ensure technological innovation adoption and implementation success are also discussed. Adoption and implementation factors are explained, and strategic issues relating to the management of change are examined. The chapter closes with an overview of the current UK situation of e-business adoption and implementation in preparation for the next chapter, which examines UK and EU government policies and initiatives generated to stimulate e-business adoption and implementation by SMEs.

3.2 E-BUSINESS

e-Business²¹ presents significant challenges to academic research, arising from:

²¹ As was described in Chapter 1, e-Business is defined for the purposes of this thesis as those activities related to the business operations of an organisation conducted over networks or the internet. Therefore, e-business encompasses all e-commerce activities (those business activities related to the trading of goods and services over networks or the internet), including email.

- Its recent emergence.
- The rapid change that characterises the domain.
- The variation in behaviour in (apparently) similar contexts.
- The enormous media attention – “hype” – it has generated, with its resultant distortion of terminology and data (Clarke, 2000).

To this list, Drew (2002) added not only the lack of familiarity with e-business technologies by many management scholars, but also the lack of established research approaches. It has been difficult for researchers to isolate trends in the innovation, ICT, and – especially – e-business literature, from more general economic and organisational change drivers. Moreover, research has often failed to examine the roles of size, age, ICT sector experience and management support within single integrated studies, types of exporting activities, awareness of benefits, types of customer and imposition by larger trading partners - all of which have exacerbated the “patchy” nature of much research (Dixon *et al.*, 2002). Much empirical work has also tended to be cross-sectional, making time-series comparisons difficult. This research aims to directly address these issues.

e-Business can have profound consequences for business practice and research (McFarlan, 1984; Glazer, 1991; Benjamin and Wigand, 1995; Rayport and Sviokla, 1995; Hagel and Rayport, 1997; Angehrn, 1997; Hoffman and Novak, 1997; Brännback, 1997; Brännback and Puhakainen, 1998a; 1998b; Shakeshaft, 1998; OECD, 1998a; Kalakota and Robinson, 1999; Magnusson, 2001; Domke-Damonte and Levson, 2002). Technology-driven change is revolutionising business, requiring companies to redefine their strategies, products and processes (Bloch *et al.*, 1996; Deeschoolmeester and Van Hee, 2000) in a business-operating climate that has become increasingly competitive, turbulent and uncertain (Bekker and Staude, 1988; Goldman *et al.*, 1995; Jeffcoate *et al.*, 2004).

SMEs have the potential to play a major role in developing and promoting growth in regional areas, which are typically characterised by high unemployment rates, a shortage of skilled people, limited access to resources, and a lack of infrastructure (Stephenson and Duncan, 1993; Naylor and Williams, 1994; Premkumar and Roberts, 1999; Tang *et al.*, 2000; Lawson *et al.*, 2001; Feindt *et al.*, 2002; Keniry *et al.*, 2003; Larsson *et al.*, 2003; Delmar, 2005), because they are a key source of jobs and employment prospects (Larsson

et al., 2003; Gray and Van Akkeren, 2003). Certainly, the EU views SMEs as a catalyst for regional development across all member nations (Nauwelaers and Reid, 1995; European Commission, 2003b; Johansson, 2003; Jutla, 2004; Jennex *et al.*, 2004). There are many peripheral regions in the EU that are not able to access by conventional means the major European business centres of Belgium, France, Germany, The Netherlands and the UK. e-Business is a tool for organisations in these regions to participate in the wider market (Lai, 1994; Justman and Teubal, 1996; Guay and Ettwein, 1998; Pukakainen and Malinen, 2000). The EU therefore encourages growth and development in regional areas by heavily promoting e-business, primarily by proclaiming the benefits that SMEs stand to gain from its adoption and implementation. This promotional drive has, in turn, created certain expectations in SMEs about the potential of e-business, and these expectations have become driving forces behind the decision of many SMEs to adopt e-business (Kagan *et al.*, 1990; Khoo *et al.*, 1998; Fariselli, 1999; Chappell *et al.*, 1999; Feindt *et al.*, 1999; 2001; European Commission, 2003b).

Companies of all sizes that have adopted e-business believe that it contributes to improved performance in four main ways:

- The development of new products and services.
- The generation of new customers and business channels.
- A reduction in costs.
- Improved productivity (HM Treasury, 2001c).²²

²² The potential advantages of adopting and implementing e-business include:

- *Efficiency gains* – results in efficiencies in procurement, inventory management, production and logistics processes, and in management of external factors (such as bureaucracy, quicker response time to markets, customers, suppliers, streamlined procedures, higher flexibility and a reduction in the delivery time and processing of payments) (Fink and Tjarka, 1994; Abell and Lim, 1996; Coccia, 1997; Currie, 1998; Chaston and Mangles, 2000).
 - *Customer relations* – results in opportunities for better customer communications and management (Kalakota and Whinston, 1996; 1997; Gullledge and Sommer, 1998; Hawkins and Prencipe, 2000).
 - *Marketing and sales* – results in increasing geographical market reach, and increasing sales opportunities through new forms of third-party agencies and intermediaries (Lawrence, 1997; APEC, 1999; Porter, 2001).
 - *Developing “smarter” organisations* – results in information being captured and processed in detailed and targeted ways, resulting in an integrated approach to knowledge management (Abell and Limm, 1996; Kalakota and Whinston, 1996; Auger and Gallagher, 1997).
 - *Cost savings* – such as lower logistic costs, lower postal costs, lower storage costs and lower personnel costs (Currie, 1998).
 - *Quality improvements* – such as access to new markets, new ways of direct and indirect marketing, better client services, and a general strengthening of customer relations (Currie, 1998).
-

However, the extent to which ICT and internet usage by SMEs features in the literature is still - relatively - undeveloped (JCESB, 1999; Dixon *et al.*, 2002). The smaller the enterprise, the less statistically likely it is to use technology, let alone operate as an e-business. SMEs still tend to use the internet only to send emails, to transfer files or documents, and/or to gather information. Cost remains the biggest restraint to new technology uptake (FSB, 2002a; 2002b; Dixon and Marston, 2002). In fact, many small businesses still do not own a computer, citing cost as a major barrier (FSB, 2002a; 2002b). SMEs frequently have legacy systems which have become outdated, and which require further expenditure to replace (Dixon *et al.*, 2002). In their 2002 annual survey, the FSB (2002a; 2002b) found that London had the highest usage of computers in the UK. Only 8% of those surveyed did not use computers, in comparison with 11% elsewhere. SMEs in London and the South East were more likely than other UK regions to have their own website. Moreover, organisations based in London and the South East were more likely to be key beneficiaries of broadband. In a 2001 survey, 25% of SMEs did not believe that the internet was relevant to their business, and 11% felt they lacked the skills or knowledge to go online (SBS, 2002c). Figure 3.1 illustrates IT usage by UK SMEs.

-
- *Supply chain restructuring* – results in a co-ordination of opportunities to integrate SMEs into the supply chain, to facilitate strategic partnerships, and to widen the range of procurement methods (McWilliams, 1995; Chaston and Mangles, 2000; Fraser *et al.*, 2000).
 - *New business development* – results in using the internet to create new business models for generating revenues in different ways (Devins, 1994; Guthrie and Austin, 1996; Bennett, 1997; 1998).

According to Hawkins and Prencipe (2000), e-business can not only streamline internal processes and enhance or replace traditional linkages between supply chain participants, but also restructure business models and supply chain efficiency (by providing real-time information regarding product availability, inventory level, shipment status and production requirements) (Radstaak and Ketelaar, 1998). e-Business can facilitate collaborative planning among supply chain partners by sharing information on demand forecasts and production schedules that dictate supply chain activities. It can also effectively link customer demand information to upstream supply chain functions (such as manufacturing, distribution, and sourcing) and subsequently facilitate demand-driven supply chain operations (Kalakota and Whinston, 1997). Currie (1998) further argues that e-business can enable SMEs to:

- Increase selling power by shortening procurement cycles through the use of online catalogues, ordering and payment systems.
 - Enable cost cutting on both stock and manufactured goods through competitive bidding.
 - Provide new information and communication channels to keep abreast of new developments, leading to reduced development cycles and accelerated time-to-market through collaborative product implementation.
 - Exploit a global market at a fraction of the cost of traditional advertising and marketing methods.
 - Ensure product, marketing information and prices are always up-to-date.
 - Improve and increase communication with staff, suppliers and customers via e-mail and document sharing.
-

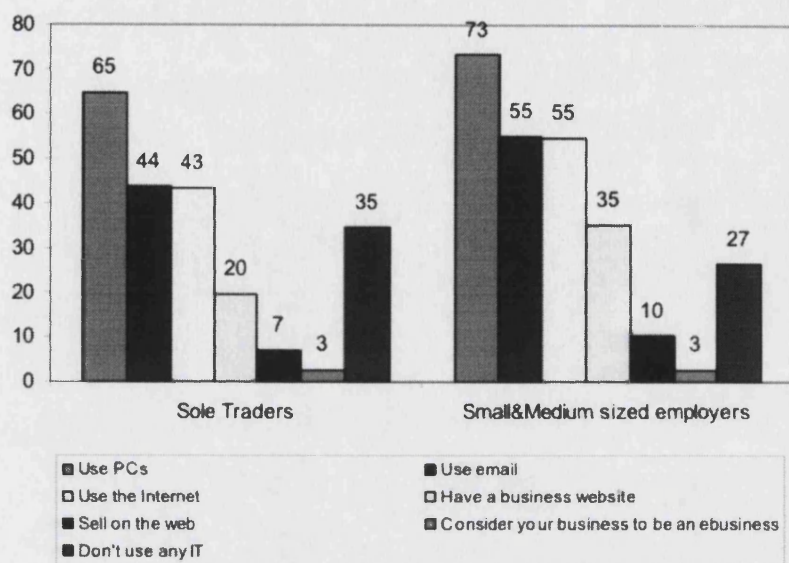


Figure 3.1 – Use of IT by UK SMEs (HM Treasury, 2001c: 146)

Despite the widely touted benefits of broadband,²³ the UK SME sector lags leaders such as Sweden and Germany in terms of connectivity (BAH, 2002). In 2002, only 1% of UK SMEs had broadband access, despite the fact that over half of these attributed broadband to improved profits and two thirds to its lowering their cost base (Fletcher Advisory, 2001; Dixon *et al.*, 2002; FSB, 2002b; Ofcom, 2002b). 67% of UK businesses used an ordinary phone/dial-up to access the internet (DTI, 2001; Ofcom, 2002a). Figure 3.2 illustrates internet access methods used by UK SMEs.

²³ Fletcher Advisory (2001) assessed the behaviour of UK SME broadband users. Their findings were as follows:

- Those UK SMEs that used broadband found their connection important for business (92%).
- One third of SME broadband users regarded their internet connection as being very important to offering new products and generating new revenue streams and customers (compared with only 14% of narrowband SMEs).
- 51% attributed broadband to increasing their teleworking opportunities.
- 57% attributed improved profits to broadband.
- 69% attributed broadband with lowering their cost base.
- About half improved their productivity by about 11% due to broadband adoption.
- More than half improved turnover in the region of 11% because of broadband.
- 49% improved their employee satisfaction.
- 60% saw broadband as providing them with competitive advantage.

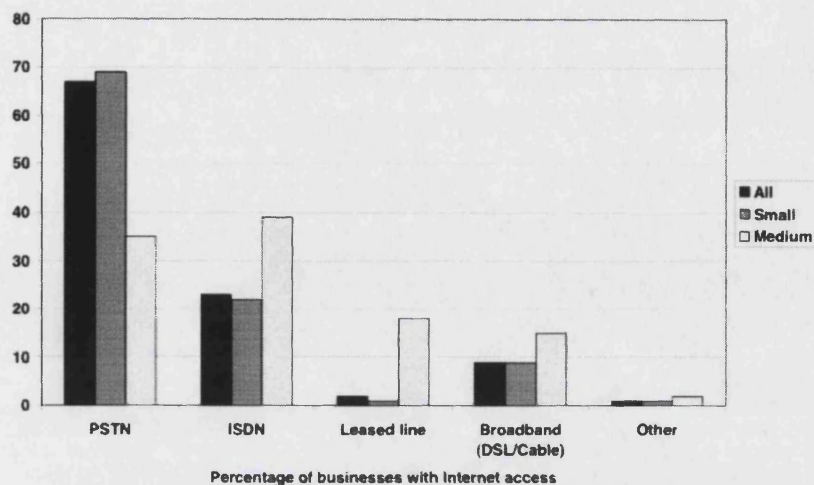
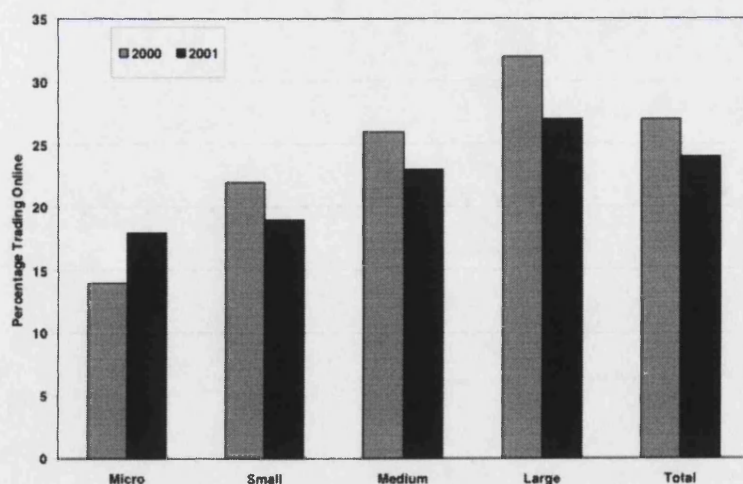


Figure 3.2 – Internet access methods used by UK SMEs (Dixon *et al.*, 2002: 11, from Of tel, 2002b)

Internet usage by UK small businesses is still relatively undeveloped (Dixon *et al.*, 2002). SMEs still tend to use the internet only to send emails, to transfer files or documents, or to gather information. The highest usage of computers amongst UK SMEs is in London (FSB, 2002a; 2002b; Yell, 2001; Dixon *et al.*, 2002; Dixon and Marston, 2002). The smaller the enterprise, the less likely it is to use ICTs, and only 540,000 of UK SMEs were trading online in 2001²⁴ (DTI, 2001). Figure 3.3 illustrates the percentage of UK businesses trading online.



²⁴ "Trading online" is defined in all DTI literature as ordering and/or paying online and engaging with customers and/or suppliers.

Figure 3.3 – UK businesses trading online by size band, 2000-2001 (Dixon *et al.*, 2002: 9, from DTI, 2001)

Timmers (2000) and Rayport and Jaworski (2001) analyse how the internet has enabled business models that were not possible previously.²⁵ e-Business adoption has been advocated as a way of reducing transaction costs, gaining market share, streamlining business processes, achieving competitive advantage and improving relationships with business partners (APEC, 1999; Porter, 2001). E-business can improve the ability of SMEs to compete with larger organisations (Guthrie and Austin, 1996; Watson *et al.*, 1998), and enable them to operate on an international scale (Quelch and Klein, 1996; Poon and Swatman, 1997b; Cairncross, 1997; O'Keefe and McEachern, 1998; OECD, 1998b). It is a cost-effective way for small organisations to market their business, launch new products, improve communications, gather information, and identify potential business partners (Langley and Truax, 1994; Cashman, 1995; Coccia, 1997; Kaplan and Sawhney, 2000; Basu, 2001) with few barriers to entry (O'Connor and O'Keefe, 1997; Poon and Swatman, 1998a; 1998b; Chaston and Mangles, 2002). e-Business therefore presents many challenges to traditional strategic management thinking.

Many of the benefits of e-business adoption fall into the category of intangible benefits, and are often not realised by SMEs at the time of adoption (Poon & Swatman, 1997a; Abell & Limm, 1996; Martin & Matlay, 2001). A number of studies have found that the tangible benefits (such as reduced administration and production costs,²⁶ reduced lead-

²⁵ Some of the business models that were not possible before the advent of e-business include the following:

- As e-businesses can be accessed 24 hours a day, and are – virtually – immediately accessible, this creates “time independence” and enables customer service to be decoupled from supplier availability.
- As the customer is, in the first instance, interacting with an automated system, there is a set of service requests that can become “self-service” for simple and fairly routine requests.
- A one-stop integration of functions and information integrates all the necessary functions for a transaction at a single point of access, with a seamless flow of information between them, and simultaneously analyses data from various steps of the transaction or across transactions (eg. a book shop selling a book can automatically replenish an order for stock at the point of sale). Such forms of integration can be realised within one company or across companies, in value networks or in other forms of business relationships (Timmers, 2000: 9-19).

²⁶ That the internet is an inexpensive source of information, and that start up and transaction costs are low are benefits to adopting e-business (Turban *et al.*, 2000). In addition, organisations can save money by eliminating manual processes and transacting electronically, because small, routine or single transactions can be made easier and more cost-effective (Kalakota and Whinston, 1997; Berg and Karttunen, 1998; Howarth, 2002). Indirect savings can arise as cost savings in the form of inventory reduction, in purchase price

time, and increased sales) derived from e-business were marginal in terms of direct earnings (Hammer, 1990; McWilliams, 1995; Abell and Limm, 1996; Kalakota and Whinston, 1996; Poon and Strom, 1997a; Poon and Swatman, 1997c; 1999; Palumbo and Herbig, 1998; Hanseth and Braa, 1998; Vescovi, 2000; Sparkes and Thomas, 2001; Quayle, 2002a; 2002b; Vrazalic *et al.*, 2002).

These same studies, however, found that the intangible benefits (such as improvement in the quality of information, improved internal control of the business, and improved relations with customers and business partners) were considered to be of far greater value to SMEs, although the tangible benefits of e-business adoption may prove to be more fruitful in the longer term (Abell and Limm, 1996; Poon and Swatman, 1997c; Trappey and Trappey, 2001; Martin and Matlay, 2001; Vrazalic *et al.*, 2002; Him and Subramaniam, 2004).

Tables with illustrative references that identify and confirm these points have been produced by the researcher. They are located in the appendices of the thesis. Appendix C summarises a comprehensive list of references of the driving forces or *expected* benefits that lead to SME adoption and implementation of e-business, divided into the following areas:

- Available resources (people, equipment, knowledge and money).
- Recognition of/enthusiasm about opportunities.
- Customer/supplier influence/competitive pressure.
- The internet as an inexpensive source of information.
- Low start-up and transaction costs.
- Access to a wider customer pool/increased sales.
- Improved control.
- Improved marketing.
- Owner/manager characteristics.
- Improvements to customer service.
- Cost reduction/increased efficiency.
- Firm characteristics.

reductions for components and systems, through refinements in supply and logistics operations, and in a reduction in intermediation costs (Fraser *et al.*, 2000).

A similarly comprehensive list of references of the *actual* benefits SMEs have derived from the adoption and implementation of e-business is presented in Appendix A, divided into the following areas:

- Lower administration costs.
- Lower production costs.
- Reduced lead-time.
- Reduced stock.
- Increased sales.
- Increased internal efficiency.
- Improved relations with business partners/customers.
- New customers and markets.
- Improved competitiveness.
- Improved marketing.
- New business models are made possible.
- Improved quality of information.

Appendix E itemises references relevant to the barriers to e-business adoption by SMEs, divided into the following areas:

- e-Business doesn't fit with products/services.
 - e-Business doesn't fit with the way they do business.
 - e-Business doesn't fit the way they feel their customers work.
 - Lack of trading power.
 - Chaotic organisational structure.
 - Can't see the advantage of using e-business.
 - Lack of professional expertise.
 - Lack of technical knowledge/skills.
 - Fear of security risks.
 - Costs considered too high.
 - Lack of resources.
 - Unsure as to what to choose.
 - Lack of experience/role models.
 - Owner/manager characteristics.
-

- Firm characteristics.
- Failure to develop an appropriate strategy.

Appendix F itemises references concerning the disadvantages derived from SMEs adopting and implementing e-business, divided into the following areas:

- Deterioration of relations with business partners.
- Higher costs than anticipated.
- Ongoing computer maintenance.
- Doubling of work.
- Reduced flexibility.
- Security issues.
- Subsequent dependence on e-business.
- Decline in contact with customers.
- Exposes the business to external risks.
- Lack of strategic planning leading to unrealised hopes/unpredictable outcomes.
- Difficulties in changing the mindset and habits of the organisation.
- Marginal short-term benefits.

However, many of the characteristics of e-business make it difficult for SMEs to seize opportunities. Harnessing e-business requires a thorough understanding of technology and its capabilities in a rapidly evolving business environment. Therefore, the structural asymmetries that exist in the relative abilities of different kinds of organisations in different sectors to exploit the potential of e-business to the full are significant. e-Business adoption by SMEs seems to be strongly influenced by the innovativeness of their customers, suppliers and competitors. However, while close contact with key customers, suppliers and competitors is an advantage, SMEs often lack an understanding of how to assess and control the risks associated with managing them (Berg, 1979; Bergeron, 1992; Tidd *et al.*, 1997; Berthon *et al.*, 1999).

Chapman *et al.* (2000) found that a year after the introduction of internet-based ICTs into the business processes of a number of SMEs in the West Midlands region of England, 90% of those organisations continued to use (and remained enthusiastic about) the technology. This level of e-business success is possible as a result of the “planning and

provision” of resources (Golden and Griffin, 1999; 2000;²⁷ Owens and Benyon-Davies, 2001²⁸).

²⁷ 1,245 Irish SMEs with websites were identified and approached, with a response rate of 50% achieved. Golden and Griffin (1999; 2000) reported the following outcomes:

- 46% of SMEs believed that their website provided value for money, while 24% believed that it did not.
- 12% of firms generated over 1000 hits per week to their website, while 34% received less than 50 hits per week.
- 13% of firms generated over IRL£250 a month directly from their website, while 28% generated no sales revenue from their website, and a further 47% did not know what turnover their website was responsible for. The organisations generating higher revenues from their site were more inclined to have promotions/special offers on their websites.
- 26% spent more than IRL£2000 on the initial design of their web pages, while 22% spent less than IRL£250. The organisations that spent more initially on the design of their sites had a larger number of hits. The organisations that spent less on the initial design and less on updates were more likely to believe that they were not getting value for money from their websites.
- 58% stated that the initial site objectives were not being met. Where initial objectives were being met, they were likely to be spending more resources on updating their pages, were more likely to have more visitors to their pages, and were also more likely to be generating more money from their site.
- A formal review of the site objectives had been carried out by only 50% of firms.
- The most cited reason for creating a website was to open up new markets (80%).
- 42% of sites were designed by an employee in-house.
- The key target audience for websites was potential customers (86%) followed by existing customers (66%).
- The organisations that planned and researched their internet site prior to its development were more likely to generate a higher percentage of their annual sales from the site, were significantly more likely to be happy with the resulting site, and the site was more likely to meet its stated objectives.
- 37% of organisations did not evaluate more than one ISP. These firms were more likely to have sites that did not meet their intended objectives, and to believe that they were not getting value for money from their website.
- The most common way organisations advertised their web pages was by printing the site address onto their stationery (82%).
- 92% believed that the internet had become more important for businesses, while 40% believed that the internet was redefining the way they did business, and 24% stated that the permanent loss of their site would have a negative impact on their operations.
- The importance of a clear business strategy for the website was seen as an essential pre-requisite to success by 79% of participating organisations.
- Only 58% of the organisations created websites because their products/services were suitable for sale online.

²⁸ Owens and Benyon-Davies (2001) undertook similar research on the awareness and uptake of online retailing amongst SMEs in South Wales. The main results of their survey are presented here:

- 71% had staff who used ICTs in their daily work.
 - 92% had internet access.
 - Over 50% had a website.
 - Organisations mainly used the internet for e-mail (87%), for finding information (77%), and for advertising (50%).
 - 32% of the participating organisations used the internet for purchasing, while only 15% traded online.
 - 68% adopted e-business as part of their long-term strategy.
 - 38% adopted e-business in order to keep up with their competitors.
 - The main difficulties experienced with e-business were not having sufficient time to devote to it (27%) and not having sufficient financial resources (33%).
 - The primary benefit experienced was reduced costs of communication with customers (50%).
-

Unlike previous technological initiatives, e-business adoption is a “disruptive” innovation (Ghosh, 1998; Kalakota and Robinson, 1999; Evans and Wurster, 1999). Whereas previous technological innovations sought to minimise dependency on other organisations, enabling businesses to dictate matters such as production and marketing, e-business requires organisations to reassess their boundaries and to focus attention inter-organisationally rather than organisationally (Kalakota and Robinson, 1999). In the past, adaptation to technology tended to be predictable, sequential and measurable, but adaptation to e-business is often unpredictable, non-sequential, and immeasurable.

In the pre-internet environment, strategies surrounding the adoption and implementation of ICTs could be planned and controlled, and therefore the (potential) benefits derived from adopting a given technology could be ascertained in light of a cost:benefit equation resulting in direct expected outcomes. The implementation of e-business, however, requires new knowledge and skills (Nonaka and Takeuchi, 1995; Peppard and Ward, 1999). Mathiyalakan (2003) found that e-business skills and expertise affects e-business implementation, but not internet adoption, as technical and managerial skills are necessary in order to conduct e-business (Bloomfield and Vudubakis, 1994; Willcocks and Kerry, 1998; Grover *et al.*, 1998). And although it is possible to sub-contract or outsource website development and maintenance to a third party (for example), in-house e-business knowledge, if not expertise, is necessary for an organisation to achieve full implementation (Chau, 1994; Bode and Burn, 2001). None of these inconsistencies appear to be reconcilable based on the “size” factor alone.

Porter (2001) argues that the internet alters industry structures, and reduces the ability of organisations to sustain their operational advantages, which could (potentially) impact negatively on businesses because it lowers barriers to entry, creates new substitutes and is available to everyone equally. Therefore, the very factors in support of e-business adoption are also potential deterrents. As e-business transforms competitive strategies, it can potentially destroy existing competencies as well as (potentially) creating new sources of advantage (Ghosh, 1998; Evans and Wurster, 1999; Chong *et al.*, 2001).

-
- The primary future benefit expected was the ability to open up new markets (57%).
 - The main problem perceived and/or experienced was the lack of security associated with online transactions.
-

Studies have shown that while e-business adoption has eroded trading barriers for SMEs, this comes at the price of altering or eliminating commercial relationships and exposing the adopting business to external risks (Lawrence, 1997; Ritchie and Brindley, 2000; Stauber, 2000; Tetteh and Burn, 2001; Lee, 2001; Raymond, 2001²⁹). Stauber (2000) noted that many SMEs considered that they had reduced their contact with customers after e-business adoption, and that this, in some cases, had led to a loss of revenue. Further studies suggest that indirect drawbacks of e-business adoption by SMEs include subsequent dependence on technology, and the high cost of its maintenance (MacGregor *et al.*, 1998; Sparkes and Thomas, 2001). Indeed, Lee (2001) claims that the biggest challenge to SMEs is not finding the best e-business model, but changing the mindset of the organisation itself (Christensen, 1997; Chung and Tang, 1999). Nonetheless, much of the literature tends to take a deterministic view, primarily based on the assumption that technology is good for SMEs, and considerably more emphasis in the literature has been placed on encouraging the adoption of ICTs generally and e-business specifically (Poon and Swatman, 1995; BAH, 1997; Duhan *et al.*, 2001; Dixon *et al.*, 2002; Pigni *et al.*, 2004).

Managing explicit knowledge sharing requires contractually defined *quid pro quo* knowledge exchange contents and procedures, inter-organisational co-ordination, and planning and control procedures. SMEs, however, are typically poor at the contractual aspects of knowledge exchange (Levy *et al.*, 2001a; 2001b; Levy and Powell, 2002), as they (usually) cannot retain adequate legal advice. Explicit knowledge can be readily assembled and exploited, and enables comprehensive contracts to be developed that specify the contents and procedures for knowledge transfer. Yet for many SMEs with explicit knowledge of markets and customers, the problem is guarding easily transferable information, as small incremental knowledge can distinguish an organisation (Cohen, 1998). There is always a possibility of SMEs inadvertently and/or indirectly giving useful information to competitors and customers (Levy *et al.*, 2001a). The implications are that the cost of change is often undertaken without the benefits being clear to SMEs (Murphy, 1996; Chang and Powell, 1998; Ritchie *et al.*, 1999; Porter, 2001; Burn and Ash, 2004).

²⁹ Raymond's (2001) study of the effect of e-business on SME travel agents found that e-business removed the need for intermediaries in many dealings.

The adoption of new systems provides an opportunity to strengthen relationships with existing or potential customers and suppliers (Shapiro and Varian, 1999). e-Business utilisation can effectively transplant strategic benefits onto existing supplier relationships, in addition to boosting the flow of information within organisations (Brännback and Puhakainen, 1998a). Not understanding customer expectations can originate from inadequate marketing research activities, from lack of communication, and/or from failing to realise that services are about building relationships as well as about making a transaction, as relationships contribute to customer loyalty (Blattberg and Deighton, 1991; Peppers and Rogers, 1997; Kalakota and Robinson, 1999). However, Poon and Swatman (1997b) found that while e-business adoption leads to an improved relationship with customers, it does not with suppliers. They also found that e-business failed to meet the expectations of many SMEs concerning marketing or sales, and did not result in any savings in terms of communications costs.

However, these issues are not always borne out by the literature. Rather than appearing as a theoretical domain that is open and fluid, overarching IS philosophies have a tendency to delineate social and theoretical landscapes. This creates particular issues when trying to understand the e-business/innovation adopting organisation holistically, since, in day-to-day life, organisational, social and technical activities can be fused together. The next section of this chapter addresses some of the issues that the innovation literature raises with respect to these concerns.

3.3 E-BUSINESS IS INNOVATION

e-Business is rapidly innovating not only traditional business processes, but also the very nature of competition, enabling market fragmentation, the ability to treat mass clients as individuals, convergence between products and services, global production networks, and simultaneous co-operation and competition between organisations. As e-business facilitates this radical transformation of both technical and business operations, it is truly innovative.³⁰

³⁰ Rogers (1995), divides the process of innovation into the following broad activities:

- *Agenda setting* – general organisational problems create a perceived need for change.
 - *Matching* – an organisational problem is fitted with an innovation.
 - *Redefining/restructuring* – the innovation is modified to fit the organisation, and alters the organisational structure(s).
-

Innovation is an important engine of long-term competitiveness, growth and employment (Howard *et al.*, 1992; European Commission, 1997a; Gladwell, 1997; Tushman and O'Reilly, 2002). The OECD estimates that between 1970-1995, more than half of the total growth in output of the developed world resulted from innovation, and that this proportion is increasing as economies become more knowledge-intensive (Irwin, 2000). The cross-functional nature of innovation management requires strong leadership in managing through turbulence (Kline and Rosenberg, 1986; Quinn, 1986; Acs and Audretsch, 1991; Mahdjoubi, 1996b; Tushman, 2002).

Innovation encompasses creativity (Tidd *et al.*, 1997; Olave and Neto, 2001). Drucker (1998) is adamant that innovators “consciously and purposefully” seek to improve their businesses. Complementary views are provided by Irwin (2000), who advocates that innovation is “opportunity spotting,” and Schrage (1999), who claims that “serious play” (creative improvisation and collaborative interactions) leads to innovation. Definitions of innovation have evolved both in academic research and in policy development in recent years from technology and linear models to multidimensional systems dynamics that focus on the flow of knowledge (Nauwelaers and Wintjes, 2000). Nonetheless, linear approaches prevail (Amidon, 1993; Gemuenden, 1999; Demarco, 1999).³¹

- *Clarifying* – the relationship between the organisation and the innovation is clearly defined.
- *Routinising* – the innovation loses its identity as it becomes an ongoing element in the organisation's activities.

³¹ According to the DTI (2002c), SME technological innovation adoption tends to follow a linear pattern, along the lines of the ICT Adoption Ladder. Each step of this 5-stage model, which is illustrated in Figure 3.4, takes an organisation closer to transformation.

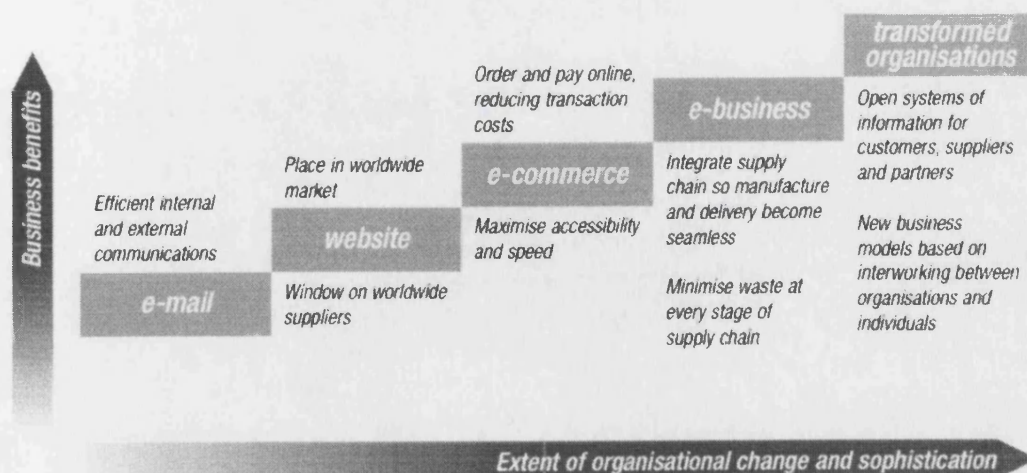
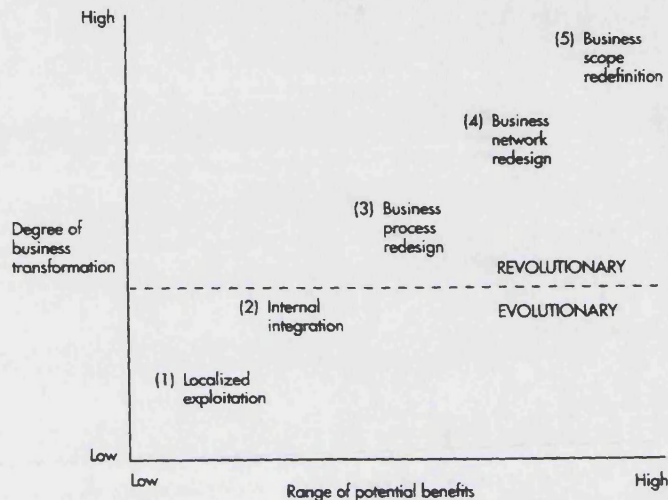
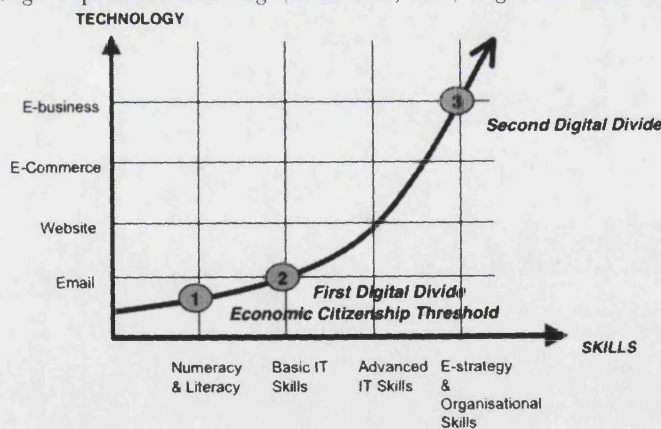


Figure 3.4 – The e-Adoption Ladder (DTI, 2002c: 2)

The transitions that organisations might pass through with respect to the impact of ICTs is illustrated by the work of Venkatraman (Scott Morton, 1991, quoted by Galliers, 1995b: 54). Figure 3.5 (below) identifies the stages of IT transformation. These stages may be followed by the redesign of key business processes, by the integration of these processes across organisational boundaries, and by the redefinition of the very scope and nature of the business.

**Figure 3.5 – Stages of IT-induced business transformation (Galliers, 1995b: 54, amended from Venkatraman, 1991: 127)**

These linear models are closely aligned to the Local Futures Group's (2001) model, which illustrates SME business development in terms of crossing two "digital divides": the first divide requires basic ICT skills to operate email and a simple website; while the second requires more advanced technology and ICT skills, along with a wide range of specialised knowledge (Dixon *et al.*, 2002). Figure 3.6 illustrates this model.

**Figure 3.6 – Local Futures Group model of e-commerce developments in SMEs (Dixon, *et al.*, 2002, p.20)**

However, these linear models do not account for varying market sector conditions, for factors such as the degree of and time period in which technology is adopted, or for other variables such as size, age of business, location and access to finance (Martin and Matlay, 2001). These views of e-business adoption and implementation also fail to distinguish between businesses of various sizes, ethnic origin and stages of

Innovation is not simply a technical-rational process of problem-solving – shaped by the competitive environment, it also involves economic and political processes in articulating interests, building alliances and struggling over outcomes (Webster, 1995). Innovation may cause fundamental changes in the structure of organisations as well as to the performance or definition of tasks, and to the actors involved. Drucker (1974: 47) argues that innovation is both a change in “the economic and social environment” and in “the behaviour of people, as consumer or producer,” and further claims that innovation arises most often from: a disciplined and “systematic” pursuit of opportunities, generated from drawing together different strands of knowledge; from recognising an underlying theme in public perception; from extracting new insights from failure; from “occurrences, incongruities, process needs, or changes” in industry or market; from democratic changes; and/or from new knowledge (Drucker, 1998).

The *Innovation Scoreboard* (European Commission, 2001c)³² found that sales of innovative products as a proportion of total turnover increases with organisation size: 15% for small, 21% for medium, and 38% for large organisations. The *Innovation Scoreboard* also found that large organisations spend nearly twice the proportion of their turnover (4.2%) on innovation activities as do SMEs, with R&D expenditure being heavily skewed towards

adoption. Several misconceptions of e-business adoption based on these linear models arise. First, the heterogeneity of SMEs results in many paths of adoption, often in order to achieve specific results. Second, these models emphasise ICTs being integrated into the organisation in a staged process, whereas businesses often develop different types of websites for different purposes, such as:

- *Information websites* – disseminate information;
- *Transactional websites* – support activities ultimately resulting in a financial transaction; and
- *Operational websites* – offer mechanisms for conducting business operations (Balthazard and Chang, 1997).

Third, some of the proposed benefits of e-business (such as instant communication with suppliers/buyers, ready access to databases to manage customer/supplier relationships, and lower cost of delivering services) do not materialise, as not all customers and suppliers are at the same level of ICT adoption.

³² The *Innovation Scoreboard* analyses statistical data in the following areas:

- *Human resources* – the scale and quality of human resources are major determinants of the creation of new knowledge and its diffusion throughout the economy by means of education, learning and employment.
- *Knowledge creation, and the transmission and application of new knowledge* – measures inventive activity outside formal invention, such as the adaptation of new equipment to a firm’s production and service systems, adopting innovations developed by other organisations and adapting new knowledge to a company’s specific needs (these indicators can often provide a clearer picture of the innovative status of SMEs than business R&D).
- *Innovation finance, output and markets* – covers the supply of high-tech venture capital, capital raised on stock markets, sales from innovations, home internet access, ICT investment, and added value in advanced manufacturing sectors (European Commission, 2001c).

the high tech and medium-high tech sectors (European Commission, 2001c). Similarly, the *Statistics on Innovation in Europe, 2000* (European Commission, 2000b) also found that the larger the organisation, the more likely it is to be an innovator (36% of small, 49% of medium and 71% of large organisations are innovators)³³ and that SMEs account for only 18% of the EU's innovation producers (European Commission, 2000b).

Building an Innovation Economy in Europe, 2001 (European Commission, 2001b) was the first in a series of Innovation Policy Studies undertaken for the European Commission's Enterprise Directorate-General, which promotes the following key messages:

- That innovation is important, as competitiveness increasingly depends on the ability of industry sectors to meet turbulent market needs quickly and efficiently.
- That innovation is pervasive and diverse, taking place in firms of all sizes, across all regions and all sectors.
- That innovation is unevenly distributed.
- That innovation is systemic rather than linear, with multi-dimensional processes (European Commission, 2001b).

In order to develop these ideas, the next sub-section of this chapter draws further upon the literature to explore and extend questions concerning the motivation(s) for and genesis of innovation.

3.3.1 Why and How Does Innovation Happen?

Collective knowledge and activities become embedded within organisations (Saviotti, 1996; Teece *et al.*, 1997; Dacin *et al.*, 1999; Hanseth and Braa, 2000) that tend, as a result, to develop stable routines and cultures. Change does not therefore usually take place without the motivation to do so.³⁴ Such motivation is usually provided when

³³ *The Statistics on Innovation in Europe, 2000* followed 23 initiatives involving 800 SMEs from across the EU member states. The research project enabled 90 business support organisations to improve their expertise in designing and managing Innovation Management Technique (IMT) promotions, to train consultants, and to test methodologies (European Commission, 2000b).

³⁴ Quayle (2003) conducted a survey in the South Wales area in order to ascertain the level of contrast between the internal priorities of organisations and the perceived demands of their customers. The survey found that the innovative elements of e-business were not perceived by organisations to be important to their customers. The issues identified as crucial to their success were: leadership, time-to-market and financial

“assumptions, attitudes, or behavioural routines” no longer work or are out of date (Schien, 1999: 104-5). This “disconfirmation” is usually brought about by a champion in the organisation who is:

- Spearheading the change.
- Responsible for the performance of the organisation.
- Seen as a credible information source (Maidique, 1980; Miesenbock, 1988; Runge and Earl, 1988; Galliers, 1996; DeCovny, 1998; Teubner and Klein, 1998; Martin and Matlay, 2001).

Along with achieving growth and maintaining performance, SME owner/managers are responsible for detecting new possibilities and ideas, for combining them with other resources and ideas, and for giving them appropriate organisational form. This concentration of power can lead directly to challenges that impede innovation: a lack of information or skills, organisational rigidities, and a conservative attitude towards risk and change. In some cases, new ideas are suppressed too quickly, while in others, projects are championed without their true potential having been comprehensively assessed (Dandridge 1979; Welch and White 1981; DeLone 1988; Thong 1999). As knowledge-based innovation is often market-dependent (Davenport, 1992; Cobbenhagen and Nauwelaers, 1999), an organisation with a knowledge challenge could be blindsided by competitors exploiting opportunities of which it is not even aware: it may simply miss the boat strategically (Haynes *et al.*, 1998). However, many SMEs cannot afford the financial risk needed to innovate and develop new products, processes and systems in spite of latent capabilities, as they do not have resources in reserve after meeting day-to-day requirements. Customers, organisational structures, and prejudices dispose them to stick with the familiar.

A number of potential factors affect innovation in the form of e-business adoption. These include, but are by no means limited to: internal and external business-drivers, the role of the owner/manager, the organisation’s absorptive capacity, the organisation’s size, and its

management (all of which can be addressed by effective supply chain management). Issues identified as being of low priority were: new technology, R&D, e-business, customer management and purchasing (all of which are normally associated with innovation). Therefore, these organisations were unlikely to be motivated to innovate, as they cannot see the potential benefits of doing so.

business activities (Windrum, 2004). In addition, adoption rates tend to be higher when the expected profitability of the innovation is high (Mansfield, 1968). Otherwise, decisions are constrained by a tendency to continue down a known path, guided by “routine and past practice” (Nelson and Winter, 1977; 1982). SME owner/managers are usually focused upon daily activities, and it is difficult to allocate the time and (human and capital) resources to become aware of new technology, however beneficial it might potentially be. As a result, the value returned for stepping outside the routine path boundaries must therefore be substantial, and involve a low level of risk, to be likely to receive any attention at all from SME owner/managers.

There is no single reason for an organisation to innovate: in some cases, innovation is triggered by new knowledge; in others it is triggered by the opportunity to fulfil a market need (Mahdjoubi, 1997). Multiple forces inhibit change and maintain the status quo. Some of these forces are: group performance norms, fear of change, member complacency, and lack of skills (Lewin, 1951; Stoner and Freeman, 1989; Bergquist, 1993). For lasting change to occur, new behaviours must be learned, so that attitudes and routines can be replaced (Boland, 1987; Senge, 1990). While the implementation of innovative ideas is an organisational change process (Hoffer *et al.*, 1996), lasting competitive change takes application, time, and involves individual and organisational learning and adaptation. To be successful, an organisation must possess (and be willing to commit) the resources needed to implement a new technology for innovation adoption and implementation (Ginzberg, 1981a; 1981b; Mohr, 1982; Amidon and Mahdjoubi, 1999). An organisation’s size, financial resources and technical know-how all influence the adoption of technological innovation. Customer and competitive pressures, along with support from business partners, can be strong influencing forces in the adoption decision (Iacovou *et al.*, 1995; CyberDialogue, 1998; Cragg, 1999; Premkumar and Roberts, 1999; Corbitt and Kong, 2000; Clarke and Flaherty, 2004). (As has been previously noted in this chapter, a comprehensive list of references of drivers to e-business adoption and implementation is provided in summary form in Appendix C.)

The most important factor impeding SMEs of all sizes from adopting e-business is the belief that either it is not applicable to their type of product(s) or service(s), and/or there is a perceived lack of commercial benefit (European Commission, 2002a; 2002e). Cost

arguments throughout many studies are somewhat confused. On the one hand, cost reduction is seen as a primary driver of innovation – and especially e-business – adoption (Iacovou *et al.*, 1995). On the other, some consider investment and adoption costs to be a barrier (Porter, 2001). Although the operating costs of internet-based e-business solutions are considerably lower than with many traditional systems, other related costs remain a significant barrier for some SMEs. Many of the costs are human resources issues (such as staff training/re-training and the acquisition of new employees with key skills) (Auger and Gallagher, 1997; Barry and Milner, 2002). The negative perceptions of investment are compounded by the fact that many SMEs have little or no assessment criteria to gauge the costs of e-business relative to its performance (Purao and Campbell, 1998; Chau and Pederson, 2000; Drew, 2002).

These debates are expanded in the following sub-section of the chapter, in order to contextualise the innovation and e-business literature.

3.3.2 Innovation Adoption and Implementation Factors

Despite the internet having many advantages over traditional EDI and VAN platforms, which require considerable initial investments and ongoing costs to link to a finite number of customers (Peypoch, 1998; Leidner, 1999a; 1999b; Kuan and Chau, 2001), much business is still transacted on them.³⁵ Indeed, the perceived benefits of using EDI were

³⁵ EDI and VAN platforms pre-date internet applications, in some cases by 20-30 years. EDI was widely implemented by SMEs, but was usually facilitated, accessed and utilised by larger organisations due to its high implementation costs. Many e-business solutions that connect to the system(s) of larger organisations occur as a result of pressure from the larger (and often more powerful and corporate) partner to do so (Webster, 1995; Parker and Swatman, 1997). There are, however, some serious challenges to the successful implementation of e-business. These include security, legal and financial problems, in addition to the unquantified business decisions for its introduction (Quayle, 2002a; 2002b). In some cases, SMEs are forced to become interdependent (eg. an SME supplier to a major corporation is pressured to install EDI in order to maintain its business with that organisation) (Webster, 1995).

SMEs are typically in a poor power position in relation to their larger counterparts (Webster, 1995). Thus, in terms of explicit knowledge, SMEs tend to be not only poor at recognising the value of their knowledge, but can also be forced to “exchange” it. Further, SMEs’ tendency towards a lack of strategic or external focus, coupled with their tendency towards poor ICT levels, makes them inadequate at monitoring their competitors’ performance. The primary mechanisms by which organisations manage co-operative knowledge exchanges include co-ordination by mutual adjustment and planning and control procedures (Levy *et al.*, 2001). SMEs are typically poor at leverage, due to their limited resources. Their main focus is (necessarily) survival, which can manifest itself as “fire-fighting” operational matters (Levy *et al.*, 2001). Large customers have been known to encourage SMEs to focus on a narrow product range, to hone their skills, and to reduce costs progressively. While SMEs enter into open-book arrangements where both parties have access to product data, this can end up as a form of control over the SME’s information – it is by no means necessarily

one of the major factors leading to ICT adoption by SMEs (Iacovou *et al.*, 1995; Dhillon and Caldeira, 2000). Nonetheless, e-business's lack of well-established and open standards has resulted in a slow adoption rate among SMEs (Engsbo *et al.*, 2001). Many SMEs are reluctant to invest in new technology if they cannot see the immediate use of it (Rothwell, 1991). Although greater integration between transaction activities and general business process management functions, including design and production, resource management, logistics and customer management, and further technology investment and deployment practice would be beneficial, emphasis is usually placed upon extracting maximum new value out of existing technology investments (Hawkins and Prencipe, 2000). The availability of financial resources required for hardware and software purchases, employee training and development, site implementation and maintenance, and other services have been found to be important to e-business success (Ein-Dor *et al.*, 1984; Tait and Vessey, 1988).

SMEs face both economic and organisational constraints, a lack of access to capital, cash-flow difficulties, limited IT skills, limited resources, chaotic organisational structures and heavy workloads – all factors which may impede innovation (Campbell and Luchs, 1997; DFAT, 1999; SETEL, 2002). As we have seen in Section 2.2.1 of the previous chapter, SMEs have their own unique qualities in terms of their environment, structure, psychosociological climate, management, and technology usage and adoption (Ein-Dor and Segev, 1978; Raymond, 1985; Cheney, *et al.*, 1986; Raymond, 1990b; Calabrese *et al.*, 2003). The KITE report (Chappell and Feindt, 1999)³⁶ found that SMEs typically have

a fair exchange, as larger organisations are more able to manipulate knowledge exchange process and outcome than SMEs (Webster, 1995).

Internet platforms for e-business are (relatively) cheap to set up and operate, and can be flexibly configured to include various categories of participants on a dynamic basis. They can also be adapted to support irregular and lower volume transactions. However, the fact that the internet can provide an open networking environment raises concerns about security and supply chain co-ordination costs. For these reasons, many organisations choose to emulate aspects of the closed EDI paradigm on an internet platform through secure intranets and/or extranets. They enable the “static” provision of product information, with little interactive capability beyond email. They are, essentially, proprietary systems, available only to a “closed” group of users, and are (usually) geared to routine transactions between specified trading partners. Fully open and interactive internet-based B2B e-business systems amongst SMEs are rare (Hawkins and Prencipe, 2000). Adding new users to EDI systems can involve considerable set-up costs, and these often also translate into switching costs for users leaving the system. Only a relatively small number of (most usually) large organisations have been proactive in setting up and operating EDI systems. Furthermore, in most sectors, the value of goods and services traded using these systems is typically modest (Hawkins and Prencipe, 2000).

³⁶ The KITE report *Analysis of e-business practice in SMEs* (Chappell and Feindt, 1999) was based on the 89 results received from a questionnaire sent to SMEs practicing e-business across 17 European countries.

more difficulty in achieving e-business success due to the characteristic SME attributes, and because SME e-business adoption and implementation success are dependent on the following factors:

- Having an original idea and/or targeting a unique market niche.
- Developing a business case for e-business.
- Finding sufficient funding to carry out e-business properly, without being dependent on third parties, or having to update sites out of hours, etc.
- Finding the right business and technology/promotional partners.
- Ensuring the right “fit” between the company’s product or service and internet demographics.
- Being flexible enough to be able to respond to competition and changing technological conditions.
- Being able to manage and scale the growth that may result (Chappell and Feindt, 1999).

SME owner/managers initiating technological innovation often rely on their instincts regarding issues such as whether or not they are being treated fairly by technology equipment and service vendors and/or whether or not they are receiving good advice (Cornford *et al.*, 1991). They typically seek advice from friends, colleagues and peers rather than from technology professionals (Cornford *et al.*, 1991). Relationships with business partners, employees, customers, and advisors are the foundation of small businesses. Built on trust and familiarity, they are a major source of information, favours, problem-solving assistance and personal interaction. Many SME owner/managers rely almost exclusively on word-of-mouth referrals and personal recommendations for new customers rather than on systematic marketing, and most depend on their existing relationships for repeat custom, business intelligence and advice. Business methods that undermine these relationships disrupt their business’s traditions and routines and threaten a valuable resource (Thompson and McHugh, 1995; Bunker and MacGregor, 2000; Drakopoulou-Dodd *et al.*, 2002).

As has been explained, limited resources greatly influence an SME’s choices. e-Business is a cost-effective way for micro- and small businesses to access customers globally and to

compete on par with larger organisations. Indeed, it has been shown that the SMEs that use the internet grow 46% faster than their counterparts who don't (IEI, 2003). The SMEs that tend to look for identifiable benefits created by enhancing operational efficiency and management effectiveness to justify (or, indeed, make) technology decisions (Fink, 1998) tend also to aim for operational efficiency, rather than competitive tools, from their ICT usage (Hagmann and McCahon, 1993). In spite of recognising the advantages that e-business can create – indeed, Mason and Rohner (2002) are adamant that failure to innovate leads to disaster – many SME owner/managers view e-business as unnecessary to their operations, and they do not believe that it offers either greater advantage or control (Lee and Runge, 2001). SME owner/managers also tend to choose the lowest cost ICT “solutions” and to underestimate the amount of time and effort required for implementation, even though the adoption of an unsuccessful technology is likely to result in severe economic repercussions (Carter, 1990; Gerwin, 1990; Thong, 2001).

It does not appear, then, that SMEs are adopting and/or benefiting from e-business as much as they potentially could, especially in light of the fact that the cost of computers and other related technologies has dropped significantly. At the same time, small business growth worldwide has been consistent (Tabor, 2004). SMEs could be missing growth and profitability opportunities by not adopting e-business to support their core competences.

The literature regarding SME adoption and implementation of e-business shows similarities and inconsistencies. One (previously mentioned) similarity is that the owner/manager plays an important role in shaping SME use of ICTs (including e-business) (Raymond and Magnenat-Thalmann, 1982; Steinhoff and Burgess, 1986). A strong parallel exists here with studies of larger businesses that highlight the importance of top management support (Cerveny and Sanders, 1986; Earl, 1989; 1993; 1996; Daft, 1998). The characterisation of SMEs as businesses with flat organisational hierarchies in which the owner/manager takes the majority of long-term planning decisions, and has full account of the organisation's financial and human resources encompasses the view that owner/manager support is essential for establishing appropriate goals, identifying critical business needs, allocating resources, and managing technological implementation (Galliers 1991b; Arundel *et al.*, 1997; Igbaria *et al.*, 1998; Premkumar and Roberts, 1999;

Palvia and Palvia, 1999; Galliers and Newell, 2001). Cragg (2002), however, found that technological capability is as important as senior management involvement for technological innovation in SMEs to occur.

Windrum and Berranger (2004) also reject the hypothesis that the owner/manager is the most important factor in the adoption of e-business. Although they concede that the majority of smaller businesses will likely have owner/managers as the ICT decision-maker, they stress the need to appreciate the extent to which the hypothesis is rooted in characterisations of SMEs in which the owner/manager performs multiple roles in the daily running of the business and maintains control over the long-term planning and resources. They posit that, as the size of an organisation increases, so it becomes more likely that the ICT decision-maker is not the owner/manager but a specialist middle manager in control of an independent departmental budget. The organisational structures of larger SMEs, therefore, are often more like the specialised, divisional hierarchies that are traditionally associated with large organisations (Windrum, 2004).

Another similarity in the literature is the proposition that SMEs are less sophisticated in adopting and using technology than are large organisations (Huang *et al.*, 2004). SMEs do not have the resources that large organisations often do, and this lack of resources creates time, financial and expertise constraints (Welch and White, 1981; Huang *et al.*, 2004). Facing these constraints, SMEs are likely to be more cautious than large organisations to adopt new technologies (Huang *et al.*, 2004). ICT competencies are as important as management perspective and attributes in determining adoption and implementation success (Raymond, 1985; Delone, 1988; Yap *et al.*, 1992; Cragg and King, 1993; Lau, 1997; Cragg and Zinatelli, 1995; Zinatelli *et al.*, 1996; Markus and Benjamin, 1999; McAdam *et al.*, 2000; Caldiera and Ward, 2002).

In addition, the compatibility of e-business to the nature of work performed by the business, the perceived relative advantage of e-business adoption, and employee computer skills can all be used to distinguish e-business adopters from non-adopters (Rogers, 1995; Kwon and Zmud, 1987; Venkatraman, 1994; Earl, 1996; Igbaria *et al.*, 1998; Premkumar and Roberts, 1999; Mullins *et al.*, 2001; Tetteh and Burn, 2001; Mirchandani and Motwani, 2001). Organisations without the required employee skills may not be aware of

new technological innovations. Lack of access to education and training within SMEs may also affect their capacity and willingness to adopt new technology (Fariselli *et al.*, 1999). Smaller businesses, especially, with restricted technical expertise, may require external assistance in the form of consultants and/or vendor support. Larger SMEs can more easily afford to hire additional staff and/or consultants, or to use third party vendors. However, affording suitable training or qualified personnel or motivating such expertise to work within a smaller SME can be problematic (Kotha, 1998; Hardless, 1999; Blackburn and Athayde, 2000).³⁷

Studies of e-business adoption frequently highlight in-house technical capabilities and previous successful experience with other ICTs as key contributory motivating factors to adoption (Raymond, 1985; Montazemi, 1988; Cohen and Levinthal, 1990; Yap *et al.*, 1992; Cragg and King, 1993; Cragg and Zinatelli, 1995; Hamill and Gregory, 1997; Fink, 1998; Kelley and Helper, 1999; Fariselli *et al.*, 1999; Chapman *et al.*, 2000; Tetteh and Burn, 2001; Spectrum/DTI, 2001). e-Business implementation requires particular competences, and experience can assist SMEs to identify and understand the organisational and strategic issues raised by e-business (Raymond, 1985; Yap *et al.*, 1992; Windrum, 2004). Researchers are divided over where these competences reside in individual employees, teams, organisation structures and/or cultures. Nonetheless, an SME's ability to acquire, assimilate and exploit new technological knowledge is often seen to be directly related to its human resources (Cohen and Levinthal, 1990; Arora and Gambardella, 1994; Szulanski, 1996).

The need for competitive advantage leads organisations to develop corporate strategies, entailing integration and development of their supplier bases. Many of the organisations that have embraced e-business successfully were previously involved in customer relationships at a distance, such as mail order or telephone-based sales and services. These organisations therefore tended to have a good understanding of ICTs before they embarked on e-business (Sriram and Bannerjee, 1994). Most usually, they retained and modified, if not extended, existing computer-based systems (St Pierre *et al.*, 1999).

³⁷ Traditional training in the form of time-consuming, theoretical and lecture-oriented courses are (often) not considered to be immediately useful by SME owner/managers, and as a consequence, they typically will not invest in education if it means that key employees will be absent from the premises for a considerable time period, or if they cannot see that the knowledge gained will be concrete enough to use in practice (Rothwell, 1991).

An inconsistency in the literature is that while technical capability has been identified as an important factor of success, the source of the capability is unclear. Some researchers (Yap *et al.*, 1992; Thong *et al.*, 2001; Huang *et al.*, 2004) have indicated that external expertise and support may be more critical to ICT success than owner/manager involvement. Raymond (2001) found that the informational and transactional implementation of e-business is most likely to be influenced by external environmental contexts, especially due to the resource constraints of most SMEs. There is considerable empirical support for this argument. Igbaria *et al.* (1997) found that external support and training had a more significant influence on ICT acceptance and use than on internal support and training. Similarly, Heikkila *et al.* (1991) and Yap *et al.* (1992) found that the success of ICT adoption and implementation was more positively associated with external consultant effectiveness and vendor support than with the presence of internal technical resources.³⁸ Indeed, Thong *et al.* (1996) determined that vendor support was more closely related to user satisfaction and organisational impact than to owner/manager support. In another study, external expertise retained by SMEs was found to be the single most important factor in compensating for resource constraints (Thong, 2001). However, other researchers (Lacity and Hirschheim, 1993; Montazemi, 1998; Raymond and Bergeron, 1996; Fink, 1998) posit that internal technical capability is key. Based on these results, the widely held notion that owner/manager support is vital for effective ICT and e-business adoption and implementation by SMEs would seem not to be universally valid.

In addition, the perceived benefits of e-business diverge: although operational efficiency was the most important consideration for adopting e-business for some researchers, others (Pollard and Hayne, 1998; Cragg, 2002) have found that SMEs adopt e-business for competitive advantage. Huang *et al.* (2004) argued that growth orientation, type of business, and ownership structure characterised the use of e-business by SMEs. Raymond (2001) observed that SME adoption and implementation of ICTs is determined by an organisation's marketing strategy, organisational context (type of ownership, nature of business), and perceptions regarding adoption advantages. Kowtha and Choon (2001) found that competitive intensity, organisation size, and existing competencies all influence an organisation's strategic commitment to e-business adoption.

³⁸ Outsourcing can be an answer to SMEs who do not necessarily have the know-how, resources or time. However, outsourcing suppliers are not necessarily interested in SMEs due to perceived difficulties in communication, prices, and the (comparatively) low reference value of a typical SME (Berg and Karttunen, 1998).

Ownership structure undoubtedly influences the organisational structure (Geeraerts, 1984), the management processes (Trostel and Nichols, 1982), and the performance (Oswald and Jahera, 1991) of SMEs, and would also likely have an affect on the adoption and implementation of e-business by SMEs. SMEs can be venture-backed, owned and run by an owner/manager, or privately owned but professionally run by non-owner managers. They may also be public or institutionally owned, or a combination of both.

SMEs in different sectors and with different business activities also (tend to) use and adopt ICTs differently (Chen and Fu, 2001). e-Business changes a company's competitive advantage by enhancing its products and/or by transforming its processes – the potential degree of impact is determined by the information intensity in an organisation's products or value chains (Porter and Millar, 1985). As SMEs often have only one product, or a few similar or related products, their value chains can often be reduced to a set of less complex business processes, to which the criteria for assessing information intensity (such as a number of suppliers, or distinct product variations, or number of parts the product has, or number of steps in the manufacturing process) can be easily identified (Porter and Millar, 1985). Knowledge intensive and non-knowledge intensive organisations are likely to have quite different ICT requirements (Windrum, 2004). The information content of knowledge intensive businesses (such as architecture and ICT suppliers and consultants) is far higher than for non-knowledge intensive businesses (such as wholesale and retail traders, and personal services). Knowledge intensive industries are high users of ICTs, and are therefore much more likely to adopt e-business. Therefore, it can be hypothesised that e-business adoption depends to an extent on the business activity of the organisation, and that SMEs with different information intensities in products and/or processes in different industry sectors are likely to adopt and implement ICTs (and therefore e-business) differently.

Research on information systems over the past 20 years has sought to identify how an organisation's IT spending provides it with strategic advantage. Among the earliest such work was that of McFarlan (1981, 1984; McFarlan *et al.*, 1983), who provided managerial tools to help organisations identify and maximise the strategic value of IT investments. While organisations differ in the level of strategic benefit they achieve from these investments, typically such variation has been ascribed to differences between industries and an organisation's position within an industry. McFarlan *et al.* (1983) developed a

“strategic grid” model that classifies organisations into four categories - strategic, factory, support or turnaround - based on how strategically valuable IT is to the organisation’s performance. In their “strategic alignment” model, Henderson and Venkatraman (1983) contend that strategic benefit is contingent upon the alignment of IT function to the business strategy, and also the alignment of internal systems and processes to the external context.

Although many researchers assume that growth is a universal goal for small organisations (Castrogiovanni and Justis, 2002; Almus and Nerlinger, 1998), another factor to be considered is that many SMEs, either by choice or by default, stay small and successful. An organisation that chooses stability as its goal will tend to operate very differently from a growth-oriented SME, and this difference will likely be reflected in how it deploys and uses technology. Even though Elder and Igbaria (1998) did not find any association between organisational size and the adoption of e-business, organisation size would seem to be a significant factor in e-business adoption (Damanpour, 1991; Premkumar and Roberts, 1999). For example, a smaller sized SME operating from a single office and primarily serving a local and/or regional market is more likely to have an organisational structure resembling that of a micro-business. In such an organisation, decision-making would likely be made by an owner/manager responsible for all business activities in that remit. Given its simple structure and the low volume of information to be communicated and stored, there may be a less compelling need for ICTs: as a direct result, the organisation is less likely to adopt e-business. By contrast, a larger sized SME organisation that has a number of different offices is likely to have a more complicated organisational structure, comprising a number of distinct departments, each with its own budget. It is therefore more likely to resemble a “large” business, with a high volume of information to be communicated and stored. As a direct result, the organisation is more likely to adopt e-business.

Larger organisations have greater access to money, material, labour and knowledge,³⁹ and therefore have greater freedom to engage in new technology adoption. Larger

³⁹ Indeed, as businesses come to rely more on developing and harnessing knowledge, their ability to capture and share it, and to execute effective application of it, becomes a source of – and is fundamental to – competitive advantage. The role and importance of knowledge as a resource has been highlighted by Drucker (1998), who maintains that it has the following characteristics:

organisations also tend to interact more frequently with the external environment than do smaller organisations, and thus have greater exposure to innovations (Swanson, 1994; Premkumar and Roberts, 1999). Due to their comparative lack of resources, smaller organisations are susceptible to a higher level of risk in ICT adoption and implementation failure than their larger counterparts (Ein-Dor and Segev, 1978; Carter, 1990). Therefore, it can be posited that organisation size is related to the decision to adopt e-business.

The majority of studies suggest that either customers or competitors provide the main impetus for innovation adoption (Abell and Lim, 1996; Auger and Gallagher, 1997; Lawrence, 1997; Poon and Swatman, 1997b; Tidd *et al.*, 1997), but great inconsistencies exist within the findings. For example, Martin (2001) and Daniel and Grimshaw (2002) found both customer pressure and competitive pressure to be significant, but by contrast, Quayle (2002a) found customer pressure, but not competitive pressure, to be significant.

The number of drivers, too, differs enormously across studies in the literature. For example, a DTI study asked respondents to list all the factors that influenced their adoption of e-business. In this way, some 23 key drivers were identified (DTI, 2002b). More commonly, the researcher(s) of a given study specify a set number of likely adoption factors, and respondents rank their importance. Although this has the advantage of clarifying responses and ensuring consistency of meaning within a given study, it produces a less than exhaustive picture. It also tends to make it unclear how many drivers were actually tested.⁴⁰ It is therefore difficult to make uniform cross-case analysis of e-business adoption drivers.

The high degree of heterogeneity across SMEs needs to be appreciated and taken into account in future empirical and theoretical research. The variety of organisational structures and the business activities of organisations are key factors affecting ICT and e-

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- Extraordinary leverage and increasing returns.
 - A tendency towards fragmentation and leakage.
 - A need for refreshment.
 - Uncertainty (as regards value creation and value sharing).

⁴⁰ For example, Daniel and Grimshaw (2002) tested 7 possible drivers, organised into 4 categories (competitors, customers, internal operations, and suppliers), whilst Quayle (2002a; 2002b) reported findings based on the highest number of respondents agreeing with particular statements.

business adoption and implementation. Future empirical studies should explicitly take these key distinctive factors into account. Therefore, the following can be hypothesised as factors influencing SME adoption and implementation of innovation and/or e-business:

- The size of the organisation.
- The age of the organisation.
- The industry sector of the organisation.
- The organisation's experience of ICTs.
- The role of both formal and informal external support in the organisation.
- The organisation's ICT usage pattern (Brock, 2000).

With these issues in mind, Appendix J provides an overview of strategic management issues relating to e-business adoption and implementation.

3.4 E-BUSINESS – THE UK SITUATION

Despite predictions (Auger and Gallaugher, 1997) that SMEs would benefit most readily from e-business adoption and implementation, recent studies have shown that it is in fact larger businesses that have benefited most (Roberts and Wood, 2002; Barry and Milner, 2002; Iacob *et al.*, 2004). Riquelme (2002) found that large organisations benefited more in terms of increased sales and cost savings from the use of the internet than small organisations. The problem of comparatively low SME e-business adoption rates is a recurring theme in the literature on e-business, and some researchers have gone so far as to suggest that there is little evidence that SMEs have benefited from the internet (Mathiyalakan, 2003).

UK SME e-business adoption rates have been considerably lower than governments had hoped for (Igbaria *et al.*, 1997; HM Treasury, 2001c; Dixon *et al.*, 2002; SBS, 2003d; 2004a; 2004b). Although the UK has seen significant growth of business internet usage (Lymer *et al.*, 1998; Sillence *et al.*, 1998; Matlay and Fletcher, 2000; Lawrence and Hughes, 2000; DTI, 2002a; 2002b; 2002c; Quayle, 2002a; Sharma and Wickramasinghe, 2004), this was mainly due to adoption by larger businesses. Uptake of e-business in smaller businesses is relatively low. In 2002, although 77% of UK SMEs had an internet connection, only 10% of these (540,000) traded online, and only 3% regarded themselves

as an e-business (European Commission, 2002b; Dixon *et al.*, 2002). 37% of SMEs with internet access used an unmetered package, and only 1% had broadband connection (Ofel, 2002b).⁴¹ As ICT expertise is often deficient in SMEs (Pollard and Hayne, 1998; Pitt, 1999), the internet is still more widely used by them for obtaining product information than for trading (Zimmerman and Mathiesen, 1998; Lymer *et al.*, 1998), with the majority of SMEs using their websites as advertising and marketing media only (Evans *et al.*, 2000; Ibbotson *et al.*, 2001; FSB, 2002). Despite the widely perceived advantages of adopting and implementing e-business, SMEs tend to use ICTs more as tools to support specific organisational tasks such as administration and accounting, relying primarily on standard off-the-shelf solutions, rather than strategically incorporating e-business into their businesses (Southern and Tilley, 2000). To compound the issue, there are also regional inconsistencies in access and integration levels of technology which result in SMEs from London and the South East being significantly more likely to have their own websites (Fletcher Research, 2001; FSB, 2002; Henry-Crawford, 2003). Figure 3.8 shows how the internet penetration of UK SMEs varies with business size.

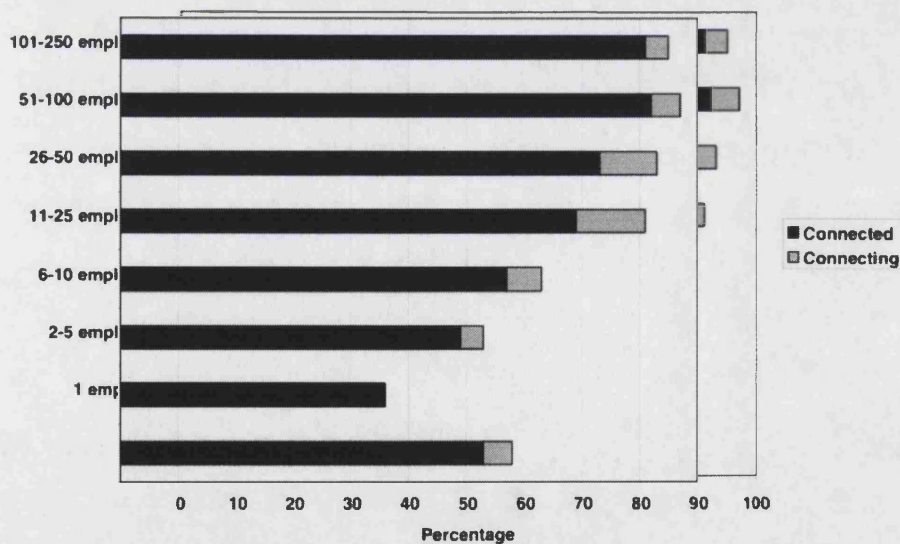


Figure 3.7 – UK SMEs connected/connecting to the internet by business size – 2001 (Dixon *et al.*, 2002: 8)

⁴¹ This situation is discussed in more detail in section 4.2.2 of Chapter 4.

In 2002, the Information Age Partnership (IAP)⁴² established a task group⁴³ to measure the success of the UK's e-business goals and benchmark the UK against its top eight international competitors. They found that the UK was “doing well” in a number of areas related to its e-business environment (such as recent improvements in the broadband market). In other areas, major challenges remained, particularly in raising uptake and use of the Internet by citizens and government. *The Benchmarking Report* (Booz | Allen | Hamilton, 2002) found that the UK had the “second best environment” for e-business in the Market Environment, Political Environment, and in Business and Government Readiness for e-Commerce. Weaknesses, however, were found in Citizen Uptake, Government Uptake, and Infrastructure (BAH, 2002). *The Benchmarking Report* stated that the UK has put in place strong political institutions and regulation to support e-business, and that the following policy themes predominate: ICT in education, investment stimulation, and internet access price regulation, in combination with a low cost of access and a strong body of potential users supporting industries and innovation. Despite these positive indicators, however, the *Benchmarking Report* found that “enthusiasm for the internet” among UK SMEs, especially, was dropping (BAH, 2002).

3.5 SUMMARY

Building on the information presented in the previous chapters, this chapter concentrated on the nature and circumstances of e-business. The IS, ICT, innovation and e-business bodies of literature were all drawn upon, in order to encompass all of the factors that compel an organisation to adopt and implement technological innovation. The benefits of e-business were explored, and alternative views of the organisational and management attributes to be put in place in order to ensure technological innovation adoption and implementation success were presented. These issues are central to a comprehensive understanding of the nature and circumstances of e-business/innovation adoption and

⁴² The IAP is a partnership between public and private sectors in the UK. Chaired by the Secretary of State for Trade and Industry, the IAP brings together government ministers, senior officials and the heads of UK companies from across the information, technology, electronics and communications supply chains. Meeting twice a year (although the Executive meets more often), the IAP aims to create an agenda for government and industry to work together to advance the UK's technological capabilities. It works mainly through task groups focussing on specific issues.

⁴³ Consisting of Booz | Allen | Hamilton (BAH), in co-operation with the DTI, the Office of the e-Envoy and INSEAD.

implementation. The chapter concluded with an overview of the current situation regarding UK e-business adoption and implementation by SMEs.

An examination of this situation was necessary in order to present the main key points that inform the choice of topic and research approach relating to this aspect of the research. To consolidate this growing understanding, the next chapter, the third in the triumvirate of thesis background investigations, explores EU and UK government policy initiatives developed to promote innovation and e-business amongst SMEs.

Drawing together and drawing on the IS, ICT, innovation and e-business bodies of literature (which have previously been treated as separate in the literature), Table 3.1 synergises the key issues that arose from the review of e-Business in this chapter:

The Key Issues Arising from the e-Business Literature Review

Much e-business research conducted to date has been insufficient

- Much e-business research conducted thus far has failed to examine the roles of size, age, ICT sector experience and management support within single integrated studies, types of exporting activities, awareness of benefits, types of customer and imposition by larger trading partners (Dixon *et al.*, 2002).
- The extent to which ICT and internet usage by SMEs features in the literature is relatively undeveloped (JCESB, 1999; Dixon *et al.*, 2002).
- Much empirical work conducted on e-business thus far has tended to be cross-sectional, making time-series comparisons difficult.
- E-business presents a number of significant challenges to academic research, arising from:
 - Its recent emergence.
 - The rapid change that characterises the domain.
 - The variation in behaviour in (apparently) similar contexts.
 - The media attention it has generated (Clarke, 2000).
 - The lack of familiarity with e-business by management scholars.
 - The lack of established research approaches (Drew, 2002).

e-Business has profound consequences for business practise and research

- E-business is revolutionising business, requiring companies to redefine their strategies, products and processes (McFarlan, 1984; Glazer, 1991; Benjamin and Wigand, 1995; Rayport and Sviokla, 1995; Bloch *et al.*, 1996; Hagel and Rayport, 1997; Angehrn, 1997; Hoffman and Novak, 1997; Brännback, 1997; Brännback and Puhakainen, 1998a; 1998b; Shakeshaft, 1998; OECD, 1998a; Kalakota and Robinson, 1999; Deeschoolmeester and Van Hee, 2000; Magnusson, 2001; Domke-Damonte and Levson, 2002).
- Technology-driven change is revolutionising business, requiring companies to redefine their

The Key Issues Arising from the e-Business Literature Review

strategies, products and processes in a business-operating climate that has become increasingly competitive, turbulent and uncertain (Goldman *et al.*, 1995; Bloch *et al.*, 1996; Deeschoolmeester and Van Hee, 2000; Jeffcoate *et al.*, 2004).

- The internet alters industry structures, and reduces the ability of organisations to sustain their operational advantages, which could (potentially) impact negatively on businesses because it lowers barriers to entry, creates new substitutes and is available to everyone equally. Therefore, the very factors in support of e-business adoption destroy existing competencies as well as (potentially) creating new sources of advantage (Ghosh, 1998; Evans and Wurster, 1999; Chong *et al.*, 2001).

e-Business can help SMEs develop and promote growth in regional areas

- E-business is a tool to facilitate SMEs to play a major role in developing and promoting growth in regional areas, which are typically characterised by high unemployment rates, a shortage of skilled people, limited access to resources, and a lack of infrastructure (Stephenson and Duncan, 1993; Naylor and Williams, 1994; Premkumar and Roberts, 1999; Tang *et al.*, 2000; Lawson *et al.*, 2001; Feindt *et al.*, 2002; Keniry *et al.*, 2003; Larsson *et al.*, 2003; Delmar, 2005).
- The EU actively promotes growth and development in regional areas by heavily promoting e-business adoption by SMEs (Kagan *et al.*, 1990; Khoo *et al.*, 1998; Fariselli, 1999; Chappell *et al.*, 1999; Feindt *et al.*, 1999; 2001; European Commission, 2003b).

e-Business adoption can be beneficial to SMEs

- The myriad benefits of e-business adoption are recounted throughout this chapter, and comprehensively summarised in Appendix A – The Advantages of e-Business Adoption and Implementation.

e-Business adoption can pose challenges to SMEs

- While e-business adoption has eroded trading barriers for SMEs, this comes at the price of altering or eliminating commercial relationships and exposing the adopting business to external risks (Lawrence, 1997; Ritchie and Brindley, 2000; Stauber, 2000; Tetteh and Burn, 2001; Lee, 2001; Raymond, 2001).
- The challenges of adopting and implementing e-business, especially with relation to SMEs, are presented throughout this chapter, and are also comprehensively summarised in Appendix F – The Disadvantages of e-Business Adoption and Implementation.

Drivers to e-business adoption by SMEs

- The drivers to SME adoption and implementation of e-business are presented throughout this chapter, and are also comprehensively summarised in Appendix C – Drivers to e-Business Adoption by SMEs.

Barriers to e-business adoption by SMEs

The Key Issues Arising from the e-Business Literature Review

- Internet usage by UK small businesses is still relatively undeveloped (Dixon *et al.*, 2002) – the smaller the enterprise, the less likely it is to use ICTs (DTI, 2002).
- The numerous barriers to SME adoption and implementation of e-business are presented throughout this chapter, and are also comprehensively summarised in Appendix E – Barriers to e-Business Adoption by SMEs.
- Many small businesses still do not own a computer, citing cost as a major barrier (FSB, 2002a; 2002b). London had the highest usage of computers in the UK – only 8% of those surveyed did not use computers, in comparison with 11% elsewhere. Moreover, organisations based in London and the South East were more likely to use broadband.

e-Business is innovation

- The OECD estimates that between 1970-1995, more than half of the total growth in output of the developed world resulted from innovation, and that this proportion is increasing as economies become more knowledge-intensive (Irwin, 2000).
- As e-business facilitates the radical transformation of both technical and business operations, it is truly innovative (Rogers, 1995).
- Innovation is an important engine of long-term competitiveness, growth and employment (Howard *et al.*, 1992; European Commission, 1997a; Gladwell, 1997; Tushman and O'Reilly, 2002).
- Innovation is unevenly distributed, with large organisations spending nearly twice as much on innovation activities than do SMEs – the larger the organisation, the more likely it is to be an innovator (European Commission, 2000b).

Why and how does innovation happen?

- Change does not take place without motivation to do so. Such motivation is usually provided when “assumptions, attitudes or behavioural routines” no longer work or are out of date (Schien, 1999).
- Change is usually brought about by a champion in the organisation who is spearheading the change, who is responsible for the performance of the organisation, and who is seen as a credible information source (Maidique, 1988; Runge and Earl, 1988; Galliers, 1996; DeCovny, 1998; Teubner and Klein, 1998; Martin and Matlay, 2001).
- There is no single reason for an organisation to innovate: in some cases, innovation is triggered by new knowledge; in others it is triggered by the opportunity to fill a market need (Mahdjoubi, 1997). The drivers of e-business adoption by SMEs are comprehensively addressed in Appendix C.
- Multiple forces inhibit change and maintain the status quo. These can include the concentration of power and lack of resources in SMEs; group performance norms, fear of change, member complacency and lack of skills (Lewin, 1951; Stoner and Freeman, 1989; Bergquist, 1993). The barriers to e-business adoption by SMEs are comprehensively presented in Appendix E.

The Key Issues Arising from the e-Business Literature Review
<ul style="list-style-type: none"> • For lasting change to occur, new behaviours must be learned, so that attitudes and routines can be replaced (Boland, 1987; Senge, 1990).
<p><i>e-Business in the UK</i></p> <ul style="list-style-type: none"> • Uptake of e-business in smaller businesses is relatively low (Igbaria <i>et al.</i>, 1997; HM Treasury, 2001c; Dixon <i>et al.</i>, 2002; SBS, 2003d; 2004a; 2004b; Mathiyalakan, 2003). • Regional inconsistencies in technological access and integration levels result in SMEs from London and the South East being significantly more likely to have adopted e-business (Southern and Tilley, 2000; Fletcher Research, 2001; FSB, 2002; Henry-Crawford, 2003). • Despite the widely perceived advantages of adopting and implementing e-business, SMEs still tend to use ICTs more as tools to support specific organisational tasks such as administration and accounting, relying primarily on standard off-the-shelf solutions, rather than strategically incorporating e-business into their businesses (Southern and Tilley, 2000).

Table 3.1 – The Key Issues Arising from the e-Business Literature Review

In outlining the various domains and approaches that are present within the literature relating to SMEs, e-business and policy initiatives, one of the implicit aims of this thesis is to indicate gaps in the literature, which this research in turn attempts to address. By considering these domains, the parameters of the thesis begin to emerge in even sharper relief.

Supplementary information referred to in this chapter is located in the following appendices:

- Appendix A – The Advantages of e-Business Adoption and Implementation
- Appendix C – Drivers to e-Business Adoption by SMEs
- Appendix F – The Disadvantages of e-Business Adoption and Implementation
- Appendix J – Strategy

Chapter 4

Background to the Research – Policy Initiatives

4.1 INTRODUCTION

This chapter explores policy initiatives relevant to SMEs and to the promotion of e-business adoption and implementation. Although the seven case studies are UK organisations, both EU and national laws are covered. While national law and EU law are mutually dependent, EU laws take precedence over national law. The most prominent and wide-ranging EU policy initiatives directed at SMEs are explained. An exploration of EU policy initiatives promoting innovation and/or e-business adoption and implementation is followed by an outline of UK-specific policy initiatives directed at SMEs, and then by one of UK policy initiatives and services promoting e-business. In order to make sense of the breadth of these initiatives, they are also summarised in tabular form. The penultimate section of the chapter questions why SMEs seem to be oblivious to the wide range of policies and initiatives directed at them, and why they do not avail themselves of the government assistance that is made available to them. The chapter concludes with an explanation of how the triumvirate of background chapters – on SMEs, e-business and policy initiatives – have informed and shaped the research.

4.2 POLICY INITIATIVES

A series of long-term EU and UK SME policies have been introduced to create a favourable competitive business environment in which SMEs can flourish.⁴⁴ However,

⁴⁴ The following combination of private and government efforts is promoted as being necessary in order to stimulate a higher level of government and SME collaboration:

- Setting appropriate standards and expectations.
- Providing relevant education.
- Providing support so that organisations can access the appropriate specialists to evaluate their performance and help them to improve their operations.

despite the vast funds allocated annually for this purpose, it is often difficult to determine the objectives of policy instruments, or to determine how these various instruments combine to achieve policy objectives. This research attempts to draw together, as well as add to, the body of theoretical work relating to these policies in order to yield new insights.

Relevant technological innovation policy promoting e-business adoption and implementation depends on an understanding of what “really” drives adoption and implementation, of the external barriers that prevent or delay it, and of how it impacts on competitiveness and employment. Incentive schemes and policies intended to benefit the SME sector need, therefore, to take into account the culture, performance and abilities of SMEs (Gable and Raman, 1992). While an evolution towards more interactive support is visible, there is a high degree of heterogeneity in policy instruments aiming to foster innovation in SMEs throughout the EU (Chappell and Feindt, 1999; HM Treasury, 2001a).⁴⁵ Current EU and UK government-funded projects designed to assist SMEs to

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- Providing an innovation support infra-structure to support SMEs to adopt innovative ideas and practices through mentoring, alliances and networks, as well as the availability of specific skills and experience (Jeal and Wroe, 1999).

⁴⁵ Innovation policies typically encompass the following types of support:

- *Mission policies* – consist of financial support for research into cutting-edge technologies, whether carried out by research institutes or organisations. The principal objectives of these initiatives are to concentrate governments’ financial resources on both basic research and on applied research at a pre-competitive level (examples include the EU’s *Esprit* programmes). These policies are influenced by a conviction that it is possible to reduce research costs and distribute risks through co-operation. However, economies of scale are not always present, and the appropriation of results from joint research depends on the presence of internal structures of knowledge and expertise. Problems of consistency between the objectives of the governments and the beneficiaries may arise.
- *Diffusion and technology transfer policies* – essentially initiatives based on grants (through subsidies or tax credits), these policies aim: to promote research within organisations; to increase collaboration between businesses and universities; and to create new technology-based firms. The emphasis of these policies, which has increasingly been focussed on measures promoting SME knowledge transfer, may not be of use if the lack of skills that (often) prevents SMEs from utilising external know-how is not addressed (Dodgson and Bessant, 1996).
- *Infrastructure policies* – measures related to mission and diffusion policies based on the concept of Technological Infrastructure Policy (TIP), such as scientific and technological parks and research institutes, which act as catalysts for knowledge and as incubators for new entrepreneurial activities. A number of such experimental projects have been started at local and national level to set up centres for technological transfer and to foster firms to make use of the scientific and technical services offered by these centres and universities. This has led to the creation of a structure of technological services and brokerage that involves: the producers of innovation (universities and research centres); economic organisations (such as chambers of commerce or industrial associations); and autonomous institutions created specifically for dealing with technological transfer (such as agencies, information centres and incubators).

adopt e-business include the promotion of online trading and the creation of virtual business networks to promote technology diffusion (Dahlstrand, 1999; Damanpour, 2001; Papazafeiropoulou *et al.*, 2002; Smith *et al.*, 2002; Jeffcoate *et al.*, 2002).

Having outlined the domain, the next sub-section of the chapter investigates EU policy initiatives developed to stimulate SMEs. A considerable number of EU policies have been formulated and introduced to facilitate the creation of a business environment in which SMEs can innovate and flourish.

4.2.1 EU Policy Initiatives

Most EU member states recognise that SMEs often have difficulty finding appropriate independent sources of business advice and information, and face skills shortages. Accordingly, they have launched national and regional initiatives to assist SMEs to acquire or adapt e-business skills (Mulhern, 1995). Of the many EU-wide policy measures and support schemes and programmes aimed at improving innovation and/or promoting e-business that have been implemented in recent years, the most influential are outlined here. Many of these policies, schemes and programmes are interlinked. For example, the EU's *Regional Technology Plan* (RTP) (European Commission, 1994), which was inspired by the *White Paper on Growth, Competitiveness and Employment* (European Commission, 1993), was in turn instrumental to the development of the *Green Paper on Innovation* (European Commission, 1995; 1996a), which was created to develop an EU-wide strategy for the promotion of innovation. The *Action Plan for Innovation in Europe* (European Commission, 1996b) paved the way for a common European analytical and political framework for innovation policy. Building on this, the *Trend Chart on Innovation in Europe* (Leo and Booth, 2001) was introduced as a tool for policy makers. Formulated along the lines of the *Community Innovation Survey* (CIS) (European Commission, 2001e), which is jointly implemented by Eurostat and DG Enterprise under the aegis of the European Innovation

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- *Technological districts* – the formation of networks between private and public bodies in order to stimulate innovation in SMEs and to extend the dissemination of R&D (Antonelli, 1999). The local routing of scientific knowledge and competences favours innovative initiatives through: the setting-up of innovative centres (Cooke and Morgan, 1994); the involvement of large companies (Ragazzi and Rolfo, 2002); the supply of real services (Acs, 1999); and the promotion of incubators and business angels to favour new technology-based firms (Lofsten and Lindelof, 2002). Industrialised areas can evolve into high-technology areas where firms, R&D and financial institutions co-exist and jointly evaluate innovative initiatives.
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Monetary System (EIMS), *The Trend Chart* updates and analyses information on innovation policies EU-wide and at national level, and provides a forum for benchmarking and for the exchange of “good practices” in innovation and technological policy development.

The *Innovation and SME Programme* (European Commission, 2001f) promotes innovation and supports SME participation in the *Fifth Framework Programme* (FP5) (European Commission, 1998) in order to optimise their advantages from such participation. The Programme also aims to diffuse good practices and to encourage inter-regional co-operation in innovation by improving support infrastructures, in addition to complementary policies for innovation and technology transfer. The Programme encompasses a set of inter-related projects: the *Regional Innovation Strategy* (RIS), the *Regional Innovation and Technology Transfer Infrastructures and Strategies* (RITTs) and the *Regional Technology Transfer Projects* (RTT) (European Commission, 1996c). RIS aims to:

- Establish a clear strategic framework for regional innovation.
- Create networks that promote inter- and intra-regional co-operation.
- Identify and prepare innovation projects.
- Strengthen regional research and technology adoption and development.
- Orientate the design of new programmes to promote innovation.

The complementary RITTs project supports local and regional governments and organisations to analyse and develop an innovation and technology transfer infrastructure in order to assess, enhance and optimise regional innovation capabilities, with the objective of specifically meeting the needs of SMEs. The RIS and RITTs projects share many objectives in addition to the same methodology and philosophy. Both are based on building regional consensus and agreement, referenced to the same core specifications, and are able to give access to international experience. Twenty-eight European regions have been participating on RIS and RITTs since they were launched in 1994, and an additional forty regions have enlisted for similar initiatives. This calculates to approximately one region in four across the EU participating in projects concentrating on enhancing local innovation capabilities, providing the most comprehensive structure for

the development of regional systems of innovation in the world, by far (European Commission, 1996c; 1997b).

The DEEDS Forum generated from the G7 Policy Group project *A Global Marketplace for SMEs* (1996-1999) (DEEDS, 2002), which seeks to provide an open forum of EU policy makers to stimulate, discuss, exchange and monitor national policies. The project has a particular focus on the uptake of e-business practices by SMEs, as did *The Bologna Charter on SME Policies* (European Commission, 2000h; OECD, 2000b). Held in 2000, it was the first conference of EU ministers responsible specifically for SMEs. The Charter not only unequivocally recognised the importance of entrepreneurship and a “dynamic” SME sector in national systems, but also acknowledged the “vital” contribution of innovation to SME competitiveness. The attendant ministers stressed that increasing access to information, financing and networking would facilitate the SME sector. *The Bologna Charter* recognised that e-business creates not only opportunities but also challenges for SMEs, and therefore recommended that when developing policies, full account be taken of SME perspectives in the drafting of guidelines, rules and regulatory initiatives and instruments related to e-business adoption and implementation, in order to promote greater awareness of the benefits of doing so to SMEs. The participating ministers agreed to work to improve the compatibility of initiatives to foster SME partnerships and to enhance the availability of instruments to promote SME development.

The European Council Summit in Lisbon, 2000 announced the EU’s goal of becoming the “most competitive and dynamic knowledge-based economy in the world” by 2010. This objective necessitated the creation of innovation policy initiatives at EU national and regional levels (many of these initiatives were still being framed in early 2005). The Summit called for a series of benchmarking exercises to monitor progress by member states towards the implementation of effective policies in support of innovation. The EU responded to this request with *The Integrated Programme for SMEs: A General Framework for all Community Actions in Favour of SMEs* (European Commission, 2000c), which, combined with *Innovation in a knowledge-driven economy, 2001* (European Commission, 2001a), has contributed to an improved coherence in technological innovation policy in Europe, and also to the development of a framework for dialogue on innovation policy-making and policy co-ordination.

eEurope 2005. An information society for all: An Action Plan (European Commission, 2002d), endorsed by the Feira European Council in June 2000, forms part of the overriding Lisbon strategy. *Europe 2005* builds on this, and addresses issues relevant to internet and e-business adoption and usage, consisting of national and multi-national actions on e-government, e-health, e-learning and e-business generated with the aim to improve participation, to open up opportunities, and to enhance skills by:

- Putting in place policy measures to review and adapt legislation at national and EU levels.
- Ensuring legislation does not hamper new services.
- Strengthening competition and inter-operability.
- Improving access to networks.
- Identifying areas where public policy can provide added value (the co-ordination of existing policies to draw out synergies between the proposed actions, in combination with an overview of policy developments, can ensure a good information exchange between national and European policy makers and the private sector) (European Commission, 2002d).

The EU has devised a number of broad umbrella policies to promote the benefits of e-business and other technological innovations, not least for SMEs. Such framework policies often set clear and ambitious targets, and co-ordinate with other policies to ensure that the various components serve common goals. They cover a broad spectrum of initiatives, from awareness actions, to establishing SME support networks, to providing consultancy and customised services to SMEs. These policies aim to influence policy across the economies of countries or regions, and are often both horizontal and vertical in concept: horizontal in that they cover most business sectors and act as a bridge between education, business and the citizen; and vertical in that they can impact upon primary, secondary and higher education (in the form of training and up-skilling initiatives).

The *Go Digital* initiative (European Commission, 2002c), administered by the e-Business Policy Group (EBPG), is a collaboration of representatives of the EU member states and the European Commission services. *Go Digital* aims to benchmark national and regional policies and instruments in order to promote e-business for SMEs, to assist member states

and regions assess their policies, to identify best practice, and to identify how funds and initiatives can complement national and regional strategies, with the ultimate objective being to “better adapt” national and European policies to promote e-business to the needs of SMEs across the EU, thus improving their efficiency.

The Third Multiannual Programme for SMEs in the European Union (European Commission, 1996c; 1996e) was also adopted as the cornerstone of the EU’s actions aimed at improving the conditions in which SMEs operate. Under the *Fifth Framework Programme* (FP5) (European Commission, 1998), it supported European SMEs to participate in FP5 actions and to optimise their advantages - especially in relation to technology - from such participation. The outcomes are still being formulated. The *Sixth Framework Programme*, (FP6) was formally launched in Brussels in November 2003 (Keown, 2002).⁴⁶

The SMESPRIT project (European Commission, 2000d; 2000e) aims to develop a knowledge-based system that will provide support to SMEs introducing and managing ICTs. This is interlinked with the *COMPETE* (European Commission, 2000f) and Brite-Euram programmes (European Commission, 2000g), which both fall under the umbrella of the *Esprit* research programme (Chappell and Feindt, 1999). *COMPETE* aimed to strengthen European SME competitiveness through technology.⁴⁷ Encouraging and facilitating collaboration and joint ventures for SMEs were also key aims of the Brite-Euram programme, which enabled groups of SMEs with insufficient resources to commission university laboratories or research centres to carry out R&D activities for them, and to pool resources with other SMEs. Thematic networks brought together various individually run projects that shared similar technological or industrial objectives, with the intention of bringing greater coherence to research activities and encouraging the exchange of knowledge and technologies.⁴⁸ The knowledge and experience gained from

⁴⁶ SME budgets in FP6 include 450 million euros (£280 million) for the project *Specific Research Activities for SMEs in the Eighth Priority* alone (Keown, 2002).

⁴⁷ Running from 1997-2002, *COMPETE* brought together more than 45 companies delegating about 70 specialists and representing more than 50 EU-funded projects.

⁴⁸ The first Brite-Euram impact studies took place in 1997 and 1998 and involved 419 partners, including: large companies, SMEs, contract research organisations, universities and non-profit research organisations. 214 projects were completed between 1992-1994 and evaluated from 1993-1995. The overall project group involved 1,495 partners from 334 projects. The third impact assessment was carried out in 1999, with 123 industrial partners from 77 projects finished in 1995. These were evaluated initially in 1996. Here, the full population was 507 large companies and SMEs from 136 projects.

the projects has been shared by participants, and has also served to inform the decision-making process on future EU-funded R&D.

Appendix K represents these EU policy initiatives and programmes in summarised tabular form.

Having reviewed the most prominent and wide-ranging EU policy initiatives, the following sub-section of this chapter will investigate UK policy initiatives formulated to stimulate e-business and/or innovation.

4.2.2 UK e-Business and Innovation Policy Initiatives

The UK government advocates the development of a “legal, regulatory and fiscal environment” to facilitate its stated goal of the UK becoming “the best place in the world” to conduct e-business. Believing online business success to be critical to the future competitiveness of UK businesses, the government established its agenda and laid down targets in *Our Information Age: the Government’s Vision* in 1998 (DTI, 1999). This was supplemented by *Our Competitive Future: Building the Knowledge-Driven Economy*, a DTI White Paper (1998) that set out the roles of government and business to improve the UK’s competitiveness.

Indeed, the UK is well placed to become the “best place in the world” to conduct e-business, as it has a world-class IT, communications and digital services infrastructure, including a highly sophisticated wireless device market, relatively low telecommunications costs, the highest DTV penetration in the world, and a regulatory structure that facilitates one of the world’s most important and competitive financial marketplaces. The UK also has the world’s second largest private equity and venture capital sector (behind the US),⁴⁹

⁴⁹ Effective and creative financing is crucial to e-business success, because the design and implementation of e-business infrastructure and its requisite re-engineering of business processes require significant investments of capital. Venture capitalists, incubators, and corporate investors are major capital sources for B2B e-business. Following the internet market collapse in 2000, most incubator funds reduced their operations and shrunk their market capitalisation considerably. Governmental involvement in e-business is becoming increasingly pronounced in the EU (Schulze and Baumgartner, 2000; European Commission, 2001g). EU venture capital initiatives include: the European Technology Facility, which targets higher risk fund profiles for start-ups, and I-TEC, which was designed to encourage early stage investments in technologically innovative SMEs (European Commission, 2001b). A series of EU entrepreneurial initiatives known as the Directorate General Enterprise Initiatives includes the following:

and a strong educational infrastructure that provides a high number of graduates in disciplines such as maths and computer science (BAH, 2002). UK business attitudes on the cost and security of transacting online, however, are comparatively conservative (BAH, 2002).

Nonetheless, UK e-business adoption has been constrained by inefficient infrastructures, incomplete understanding of the potential of the technologies, and evolving market standards (Westland and Clark, 2000; Cosh and Hughes, 2003). A major stumbling block to the growth of e-business adoption by SMEs has been slow broadband development (Galliers and Wiggins, 2002), even though the *UK Online* report (2001) set the target for the UK to have the most extensive and competitive broadband market in the G7 by 2005 (Dixon *et al.*, 2002). The strategic importance of the wide availability of inexpensive bandwidth is universally acknowledged,⁵⁰ but the reality is that broadband in Britain took

-
- *Trans-national joint ventures* – provide funding for SMEs within the European Union, such as the Joint European Venture (JEV).
 - *Capital Risque pour les Entreprises d'Amorçage* (CREA) – which provides seed capital to cover operating costs during the start-up phase.
 - *Mutual Guarantee Schemes* – which involve private groupings of companies often linked to sector-specific interest groups, and provide loan insurance to banks.
 - *Roundtable of Bankers and SMEs* – which are dedicated to finding funding opportunities for SMEs, especially during the start-up phase (European Commission, 2001e).

In the UK, the Phoenix Community Development Finance Institution Challenge Fund supports over 90 projects to encourage business start-up and development. The Fund was launched in November 1999, is designed to encourage entrepreneurship in disadvantaged areas through a range of initiatives including Community Development Finance initiatives, a network of volunteer mentors, and City Growth Strategies, and helps to build a network of both borrowers and lenders that the mainstream banks do not reach. In addition, the SBS supports pilots with a strong focus on ethnic minority and women-owned small businesses in the West Midlands and in Haringey, London. European Regional Development Funds (ERDF), European Social Funds (ESF) and The Enterprise Promotion Fund (launched in April 2003) also support a range of pilot projects designed to encourage creativity and innovation in the field of enterprise education and awareness raising. Other UK entrepreneurial initiatives include the following:

- The Regional Venture Capital Funds launched in January 2002 with a government investment of £80 million, and a private sector investment of £187 million.
- www.businesslink.org launched in June 2001 to complete the Business Link branded information and advice channels for its SME customers.
- The £75 million SBS Business Incubation Fund (£30 million of which comes from the Development Fund element of the Phoenix Fund) was launched in October 2001, and currently supports 96 projects.

⁵⁰ Multi-platform broadband has already had a major impact. However, if it is fully exploited it could improve the effective use of networks, and thereby increase productivity and employment. Achieving productivity gains through effective use can be realised by:

- Restructuring economic and social behaviours to exploit new technologies.
 - Adapting business processes.
 - Bringing public services online.
 - Enhancing skills (DTI, 2001; 2002c).
-

much longer to grow than either businesses, consumers, or the government had anticipated (DTI, 2000a; 2002a; 2002c), and availability still remains behind world-leading levels (67% for all UK technologies in July 2002, against 90% in Germany and Sweden, and 80% in Canada) (BAH, 2002; DTI, 2002c).⁵¹ Since 2003, however, due to relatively high levels of competition in the UK broadband infrastructure and retail market, broadband prices have fallen considerably (DTI, 2004). The delay was widely reported to be due to the endemic and entrenched anti-competitiveness of British Telecom (BT) and its reluctance to upgrade exchanges, to cable operators' focus on urban areas, and to a lack of adequate government intervention (Forrester Research 2000a; 2000b). As the UK's key infrastructure players are private companies, not state-owned incumbents, the capital market squeeze has had a tangible retarding effect on roll-out (Fletcher Advisory, 2001). In late 2002, the UK government committed to *not* provide extensive financing for broadband roll-out, preferring to allow the private sector to lead (although the government has since invested in a set of pilots) (DTI, 2004).⁵² The result has been that regional governments/development agencies have taken the lead⁵³ and the UK government has set up the Regional Broadband Unit to co-ordinate this regional activity (DTI, 2002c). BT refocused its programme of local exchange upgrades, so that local demand had to be demonstrated by pre-registration before an exchange would be considered for upgrading (BAH, 2002). UK regional areas are likely to remain uneconomic for service provision, however, despite the public sector mechanisms introduced in order to address these challenges.⁵⁴ Although e-business can potentially provide SMEs with access to global markets, remotely located SMEs still require the fundamentals of distribution networks and direct markets. It is therefore not surprising that broadband access levels mirror the digital divide effect in UK society as a whole, with

These developments could open up significant economic and social opportunities. New services, applications and content could create new markets and provide the means to increase productivity (and hence growth and employment). They can also provide more convenient access to information and communication tools.

⁵¹ This situation was outlined in section 3.5 of Chapter 3.

⁵² A 2002 government initiative to provide RDAs with £30m to stimulate broadband deployment and uptake had some effect, but the investment amount was small compared to financial commitments made in other countries (BAH, 2002).

⁵³ For example, The Welsh Assembly allocated £100m of EU funding to develop broadband in Wales.

⁵⁴ EU Objective 1 finance has also been made available to supplement and develop broadband in UK rural areas.

larger organisations and those based in London and the South East far more likely to utilise broadband (Local Futures Group, 2001).

Another stumbling block to e-business growth in the UK has been e-business taxation. While there is always a tension between safeguarding tax revenues and assisting new business, the UK's tax breaks emphasise tax avoidance prevention rather than promoting and encouraging enterprise (NetValue, 2000). In addition, R&D spending by government and business is low by international levels.⁵⁵

A number of high-profile UK internet ventures suffered highly public failures in the technology shares crash that began in April 2000. Although some of these businesses soon began trading again under new ownership, their resuscitated sites, almost without exception, gave up their former business models and strategies in exchange for a more restrained approach to product and/or service provision. The enormous sums of money invested in building awareness of their brands, while not viable with the original business models and formats, thereby provided value for the new owners. They were evaluated and refined by significantly more cautious investors, and their business models emerged as less extravagant, but more robust, disciplined and tightly focused (Bryant, 2002).

Many UK businesses – including the case studies presented in this thesis – have decided, for strategic reasons (in particular the need to remain competitive), that they need to trade online, and have therefore stopped attempting to justify their investment in e-business adoption and implementation on an entirely quantitative financial basis. They attempt, in short, to incorporate e-business into their business operations. *Business in the Information Age International Benchmarking Study 2000*, (DTI, 2000) reported that 70% of UK businesses use e-business alongside conventional business methods. However, while applications such as email and online marketing are (relatively) widespread, online activities that require an increasing level of interaction and technical complexity have lower levels of adoption. DTI figures indicate that UK businesses tend to be farther up the e-business adoption ladder in dealing with their suppliers than they are with their customers (DTI, 2000a; 2002a).

⁵⁵ 1.56% of GDP in the UK, against 2.63% in Germany, and 2.25% in the US (Booz|Allen|Hamilton, 2002).

These percentages are clearly not high enough if the UK is to become “the best place in the world” to conduct e-business.

In addition, SMEs require quite a lot of support, not least because of their relative unwillingness to trade online (HM Treasury, 2001c; BAH, 2002). To this end, the UK government has obtained the support of senior and committed political leadership on e-economy topics to supplement a regulatory regime that promotes e-business (BAH, 2002). To this end, The Office of the e-Envoy (OofE) was created. It sits inside the Cabinet Office, with advisory input into the Treasury’s financing decisions. The OofE sets policy, ensures the co-ordination of e-economy issues across government, and manages selected projects that are of cross-departmental benefit.

The countries with the highest levels of SME internet penetration and SMEs trading online have long-standing schemes to create a support network for SMEs specifically targeted at e-business, rather than just general small business support. This is the case in the UK, where a range of programmes has included providing funds, training, resources, and targeted advice (HM Treasury, 2001c; BAH, 2002). Such programmes can have a real, if limited, impact on SMEs.⁵⁶ To this end, a number of UK government policies and initiatives have been developed to specifically support and stimulate the SME sector. The *Opportunity for All in a World of Change* White Paper (DT1, 2000b) announced a £30 million initiative for a three year period to assist businesses of all sizes move beyond having a website or trading online to transform themselves through the effective use of e-business (Dixon *et al.*, 2002).

⁵⁶ For example, a UK-based EU-funded study on 20 SMEs initiating e-business was conducted in 1999 (O’Neill, 2000). Most of the participating organisations (predominantly micro-businesses) began the study with a very low level of ICT skills. Whilst 52% of the companies saw themselves as innovative, 92% wanted to expand, and 42% were keen to increase profits. They all anticipated that benefits would be gained from e-business, including: access to more customers (92%), improved communications with customers (92%), increased profits (83%), increased status (75%), faster communications (67%), global presence (58%), improved communications with suppliers (58%), reductions in marketing costs (42%), and reduced transaction costs (17%). The project saw each of the companies launching information-point only websites. Six months after launch, 43% were using e-mail on a weekly basis, 29% on a daily basis, and a further 29% on an hourly basis. 86% were exchanging emails with their customers, and 43% with their suppliers. 43% of the companies thought that they had increased access to customers, while 14% thought that they had experienced faster communications to customers and suppliers, in addition to increasing their status. The majority of the participating companies were positive about the developments they anticipated in the near future: 86% expected access to more customers, while 57% expected a reduction in marketing costs, and 86% expected improved communications with suppliers and customers.

Another key mechanism for e-business penetration is the IAP, a forum for dialogue between the public and private sectors involving the UK's IT, communications, electronics and creative content industries. Chaired by the Secretary of State for Trade and Industry, the IAP brings together government ministers, senior officials and the heads of UK companies from across the information, technology, electronics and communications supply chains to advance the UK's e-business capabilities. In 2002, the IAP established a task group⁵⁷ to benchmark the UK's e-business success against its top eight international competitors, resulting in *The Benchmarking Report* (BAH, 2002). The *Report* found that, of the countries examined therein, the UK had the "second best environment" for e-business, and that the UK has strong political institutions and regulation to support e-business in place. However, *The Benchmarking Report* also noted that information, advice and training were the typical means of support in the UK rather than financial incentives, which are particularly inviting for SMEs, and that "enthusiasm for the internet" and the willingness of SMEs to trade online was dropping (BAH, 2002).

The Cabinet Office's Performance and Innovation Unit report *e-commerce@itsbest.uk* (Cabinet Office, 2000) prompted the development of three subsequent UK government reports: *UK Online for Business*; *Technology Means Business*; and *Supply Chain*. The DTI's *UK Online for Business* is effectively the rebranded Information Society Initiative, which is in turn a component of *UK Online*, a nationwide e-business initiative that builds on existing support services. The activities of *UK Online for Business* focused on raising business awareness and understanding and incorporating e-business into the businesses of SMEs. *UK Online for Business* is a private-public sector initiative in which public, private and non-profit organisations⁵⁸ promote e-business to SMEs. *UK Online for Business* has an annual budget of £67million and a network of 400 advisers in over 100 contact centres (DTI, 2002). The SME advisers are based in Business Links in England and their equivalents in Scotland, Wales and Northern Ireland. Their remit is to raise understanding of e-business opportunities (Business Link, 2002).

⁵⁷ Consisting of Booz | Allen | Hamilton (BAH), the DTI, the Office of the e-Envoy and INSEAD.

⁵⁸ These organisations include (but are not limited to): the TUC, CBI, The Institute of Directors, British Gas, NatWest, Motorola, BT and Cisco.

The UK's DTI study *Technology Foresight* (DTI, 1997b) aims to contribute to bringing about a culture change in the way that business and scientists collaborate, in order to create "a climate" in which innovation can "flourish." It works in collaboration with *Competitiveness through Partnerships with People* (DTI, 1997a), which aims to present key priorities for innovation action and the need for good management.

Having considered UK e-business and innovation policies in this sub-section of the chapter, the next concentrates on SME-specific UK policies.

4.2.3 SME-Specific UK Policy Initiatives

The estimated total cost of UK government services to SMEs is approximately £8bn a year, most of which is in lower rate tax relief and CAP Pillar 1 payments (HM Treasury, 2001c). About £2.5bn of this is spent on DTI and Small Business Service (SBS) expenditure (the main core of the UK's SME-specific policy), providing business support schemes that reach between 8-12% of SMEs (HM Treasury, 2001c; DTI, 2002b). The total capital budget of the SBS for 2004-05 is £355.7 million (DTI, 2004; SBS, 2004a). Over 30% of total UK public sector spending on services for SMEs is spent at the local and regional levels. Indeed, SMEs' experience of government services is primarily at local level (HM Treasury, 2001c). Figure 4.1 illustrates the types of government support offered to SMEs in the UK. Figure 4.2 illustrates the UK government's expenditure on services to SMEs. Figure 4.3 illustrates the source(s) of UK SME support.

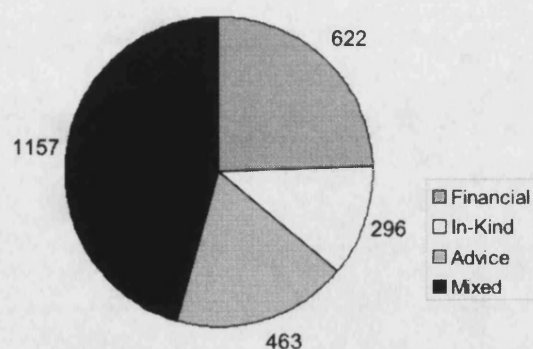


Figure 4.1 – Type of support: UK expenditure on services to SMEs (£m) (HM Treasury, 2001c: 36)

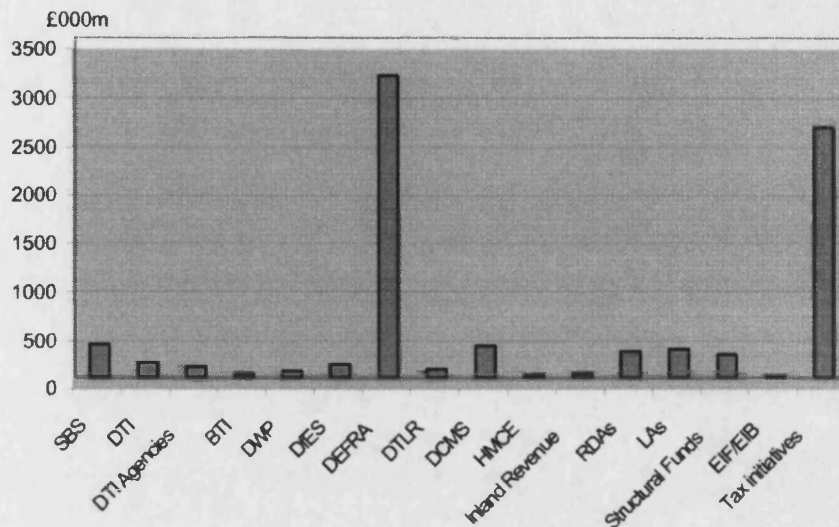


Figure 4.2 – Expenditure on services to SMEs by UK government bodies 2001-2002 (HM Treasury, 2001c: 34)

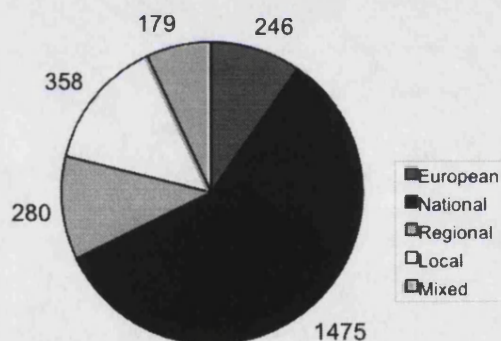


Figure 4.3 – Geographical source of support: UK expenditure on services to SMEs (£m) (HM Treasury, 2001c: 36)

The SBS was set up as an executive agency of the DTI in April 2000, reporting to the Secretary of State for Trade and Industry, which sets its overall strategy and direction. Working closely with the Cabinet Office's Regulatory Impact Unit, the Better Regulation Task Force, and with smallbusiness|Europe (an independent organisation it established in 2001 to ensure that SME interests are taken into account by EU decision-makers (HM

Treasury, 2001c), the SBS's purpose and accountability is set out in its Public Service Agreement target:

“To help build an enterprise society in which small firms of all kinds thrive and achieve their potential, with an increase in the number of people considering going into business, an improvement in the overall productivity of small firms, and more enterprise in disadvantaged communities”

(SBS, 2004a: 3)

The SBS promotes the principles of *Think Small First* in the development and implementation of new regulations. The DTI aims to put the SBS at the centre of the “virtuous circle” (illustrated in Figure 4.4), a process where all government decisions that affect SMEs are taken after reviewing the evidence on what is needed, what works, and where lessons learned further refine and develop subsequent services.

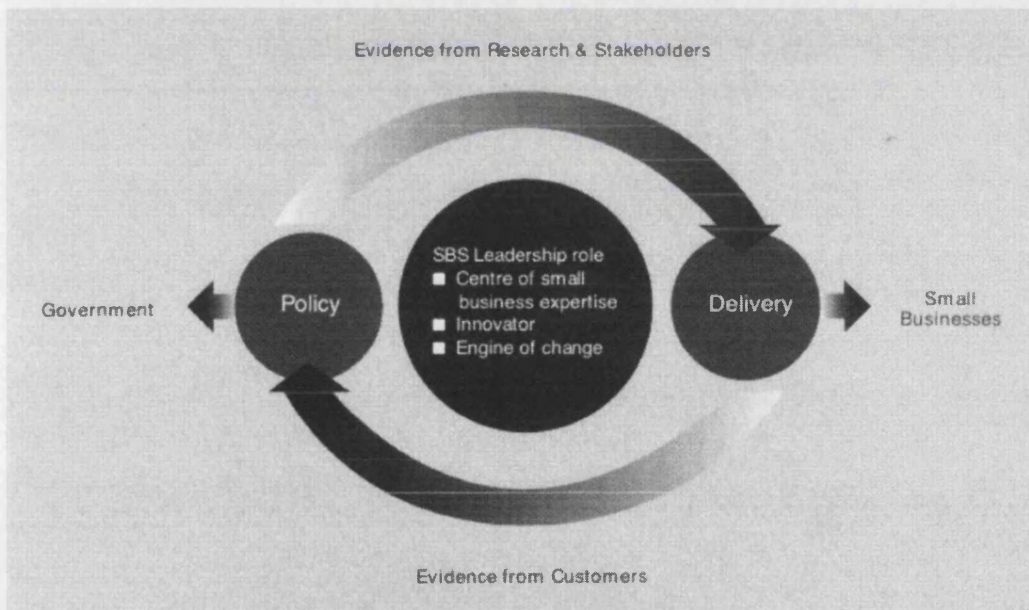


Figure 4.4 – The “Virtuous Circle” (SBS, 2004b: 7)

Established to enable SMEs to have a voice in government, the SBS has developed *The Government Action Plan for Small Business* (SBS, 2004b), which is jointly endorsed by the Prime Minister, the Chancellor of the Exchequer, and the Secretary of State for Trade

and Industry. It has also developed the *UK Business Advisor Barometer* to map and analyse how government expenditure on services for SMEs translates into customer experiences (SBS, 2004b; 2004c). The SBS also provides:

- A network of Business Links.
- Access to finance.
- Access to focussed advice and support.
- Incubators.
- Managed workspace.

The Social Enterprise Unit (SenU) joined the SBS in 2004. Their shared agenda is to deliver DTI objectives. The SBS also works with the Small Business Council (SBC), which was established in 2000 as an advisory Non-Departmental Public Body providing independent advice for the Chief Executive of the SBS on the needs of SMEs. The SBC reports to the Secretary of State for Trade and Industry on the effects of government policy on small businesses, and produces recommendations in an annual report. Unfortunately, despite a common goal and complementary interests, it seems that the SBS and SBC operate “quite separately” (HM Treasury, 2001c: 147).

Services that impose duties and obligations have the most directly-perceived impact on SMEs. The Local Authorities (LAs) and Inland Revenue (IR) therefore have the greatest reach, as both impose taxes on all SMEs that require at least one payment a year. They are followed by the Jobcentre Plus, the Environment Agency, DEFRA and the Insolvency Agency. SMEs’ experience of government services is primarily at local level, with Regional Development Agencies (RDAs), Local Strategic Partnerships (LSPs), local authorities and other agencies sharing key roles (HM Treasury, 2001c; DEFRA, 2000). RDAs are responsible for Regional Economic Strategies. Most RDAs have set up sub-regional partnerships, which include all public sector providers of business support services, including: LAs, LSPs and Business Link Operators (BLOs);⁵⁹ private and

⁵⁹ BLOs are private companies that provide information about, and access to, publicly provided assistance. BLOs hold a contract with the SBS for:

- Local enquiry handling/information service.
- Pre-start and start-up services.
- Business advice/diagnostic services.

voluntary sector bodies, including banks, accountants and enterprise agencies; and public providers of business services.

The key to delivering improved government services lies not only in knowing what SMEs want, and designing services in light of this, but also in finding better ways of advertising these services to their intended beneficiaries (HM Treasury, 2001c). Even relatively small improvements to universal services could have a cumulatively large impact (HM Treasury, 2001c). Aggregating the information distributed at regional and local levels could therefore greatly improve the ability of governments to design national policy. Despite the range of services provided by government, it would seem that many SMEs remain unaware of them (HM Treasury, 2001c). The following section of this chapter investigates to what extent, and why, this is so.

4.3 WHY AREN'T SMES ACCESSING THE HELP THAT'S AVAILABLE?

The Cross Cutting Review of Government Services for Small Business examined the range of UK government services targeted at SMEs and found that BLOs do not reach the majority of SMEs that need them – indeed, it would seem that many SMEs do not know that these services exist (HM Treasury, 2001c).⁶⁰ This section of the chapter will illustrate that SMEs' experience of government services could be improved by making these services more accessible and of better quality by rationalising relevant government departments to simplify and by developing a more coherent approach to service design and delivery (Dixon *et al.*, 2002).

The *Government Gateway* was launched in January 2001 (at a cost of £16 million) to enable online access to UK government departments within a secure interface between businesses, citizens and government departments. However, there has been, thus far, a very low take-up of its services (SBS, 2003b). To date, however, despite rhetoric to the contrary, very few EU or UK departments and agencies have placed SMEs at the heart of

-
- ICT and e-business services.
 - Sales and marketing advice.

BLOs also have separate contracts with the Learning and Skills Council for workforce development, and with British International for international trade services and workforce development services (SBS, 2004b).

⁶⁰ Less than 140,000 potential entrepreneurs approach Business Links annually (HM Treasury, 2001c).

the policy development and delivery process (HM Treasury, 2001c). On the whole, departments and agencies undertake fragmented activities that concentrate on policy design and performance evaluation stages – far less emphasis is placed on customer-focus at the development and implementation stages (HM Treasury, 2001c; Davis, 2002).

The UK is rated as “low” in provision of services online (Accenture, 2001), as is illustrated by Table 4.1. Although 73% of government services directed towards SMEs have some degree of electronic presence, in practice many of these are simply online equivalents of the paper-based services already available, and consequently offer insufficient additional value to users over their paper-based equivalents.

% of UK Government services available online of which	73
% at publish level	70
% at interact level	25
% at transact level	5

Table 4.1 – Percentage provision of UK government services available online (adapted from HM Treasury, 2001c: 147)⁶¹

Although the majority of SMEs have access to the internet, only a minority (between 6-10%) regard it as their preferred way of dealing with government (HM Treasury, 2001c). *The International Benchmarking Survey* (DTI, 2002c) found that only 50% of UK SMEs go online to find out about local or central government services. SMEs seem to be critical of government websites, finding them difficult to navigate (HM Treasury, 2001c; Bennett and Robson, 2003). And not without foundation – Accenture (2001) analysed that there were over 1,000 UK government websites, accessed through 80 portals, each with its own character and navigation requirements. Many, if not most, SMEs simply do not have the time or reserves to expend in order to discover where the information they need might be located.

When specific advice is required, 58% of SMEs report that they prefer to deal directly with someone in a government department either in person or on the phone (HM Treasury, 2001c). They not only want to know who to talk to in order to get a quick,

⁶¹ This table previously featured in Chapter 1 as Table 1.1.

correct and reliable answer, but also which other parts of government agree with the information they are being given. Most UK SME owner/managers perceive interaction with government as being “difficult, complex, time consuming and often ineffective” (SBS, 2004b: 10). It seems that small businesses will put off contact with public bodies for as long as possible (HM Treasury, 2001c). In 2002, 51.1% of SMEs said that they’d had no contact with the government during the previous year, 30.1% said that they’d had contact on VAT-related issues, while around one in five (21.9%) had made contact on non-VAT-related issues. A similar proportion (20.8%) had dealt with Companies House (SBS, 2003a), while 52.7% of businesses had not sought advice or information from government sources during the previous year about regulations that might affect them (HM Treasury, 2001c). Despite 52.7% of SMEs not having sought advice or information from any external sources during the previous year about regulations that might affect them, as the size of a given business increases, there is a greater likelihood of it consulting business support organisations (such as Enterprise Agencies, Chambers of Commerce, Business Link, Business Eye, Business Gateway, and Invest Northern Ireland) (SBS, 2003a) to the extent that, among medium-sized businesses, only about a fifth (21.1%) had not sought advice at all (SBS, 2003d).

New businesses that take external advice benefit from higher survival rates and faster, more sustained growth, yet entrepreneurs and SME owner/managers are often deterred from seeking advice by a lack of information as to what type of support is on offer to them (Barclays Bank, 2001). They do not always understand the benefits of business advice, or recognise their own need for support (SBS, 2004b). Unfortunately, the quality of information and advice can vary widely, and new entrepreneurs often do not have the time or experience to access and assess the quality of services. In addition, entrepreneurs are often reluctant to expose their business idea by taking advice, through fear that it will be either ridiculed or stolen, and/or that they will be overcharged.

Just over a third (35.6%) of new business owners do not seek any formal advice before starting up. A further 17.8% had consulted their friends, family or informal contacts. Among the other half, who do in fact take formal advice, professional and/or commercial consultations with accountants (22.0%), banks (16.5%) and lawyers (7.3%) together constitute the largest source of advice taken. Only 14.7% take advice from a public

advice/support agency (SBS, 2003d). The three main sources used for advice on regulation are:

- The business' accountant.
- The trade or business association to which the business might belong (10.7%).
- Public information sources (such as the internet, library or press) (6.3%) (SBS, 2003d).

The dominant reason for SMEs choosing not to access external advice was that the owner/manager considered that they either did not need or did not want it. Some 57.7% of SMEs said that they had not needed any external advice, while another 15% said that they had sufficient internal expertise to draw on. In addition, approximately 10% claimed that they had reservations about using outside help, because they considered that “no-one else” would understand the business well enough to help, or because they would not be able to help, or simply because the respondent preferred independence (SBS, 2003d). Table 4.2 outlines the sources of advice regarding regulations that were accessed by SMEs.

Proportions who said...	All %	No Employees %	Micro 1-9 %	Small 10-49 %	Medium 50-250 %
Accountant	12.8	12.1	14.6	14.6	13.0
Bank	1.5	1.0	2.7	2.3	0.8
Trade/Business Association	10.7	8.1	15.6	20.9	29.5
Business Support Organisations**	3.4	2.5	5.0	8.1	8.9
Consultant	2.2	1.4	2.9	9.1	13.5
Internet/library/press	6.3	6.2	6.5	7.3	7.8
Business/personal contacts, including customers, suppliers, etc.	3.8	4.2	3.1	2.4	2.4
Solicitor	2.8	2.0	3.8	7.8	14.5
Inland Revenue	1.3	1.1	1.9	1.5	0.4
Local Authority	2.8	2.8	2.9	2.6	1.7
Other Regulatory Agencies (HSE/Environment Agency/etc.)	3.5	3.0	4.4	5.3	6.7
DTI/SBS/Other government bodies	3.7	3.1	4.6	6.2	8.0
All other sources	4.1	3.8	4.4	7.0	9.0
None	52.7	57.9	43.5	29.9	21.1
Don't know	0.2	0.2	0.4	0.2	0.2
Unable to answer	0.8	0.4	1.4	2.2	3.4

Table 4.2 – Sources of advice about regulations accessed by UK SMEs (SBS, 2003d: 103)

A small proportion of SMEs stated that while they might have found help potentially useful, they either did not know that advice was available (2.2%) or they did not know where to look for it (2.8%). Other respondents had difficulty with the available sources of advice, either because they did not have enough time (8.1%), because they found it too costly (4.3%), or because they'd previously had a negative experience when using such sources in the past (1.7%). Figure 4.5 illustrates these responses.

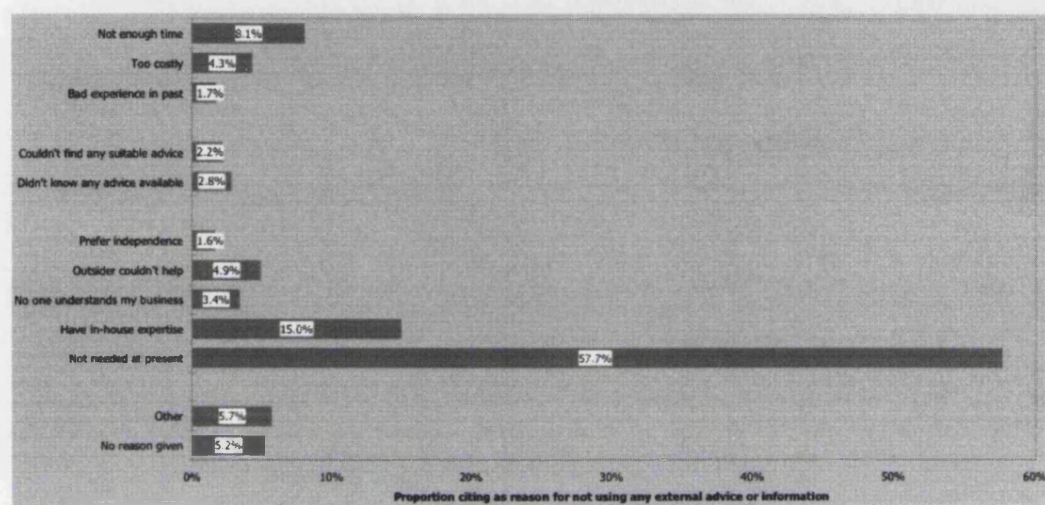


Figure 4.5 – Reasons given by UK SMEs for not using external sources of advice or information (SBS, 2003d: 115)

Even though the OECD (1999) has found the UK to be among the least regulated countries for small firms, many UK SMEs feel over-burdened (HM Treasury, 2001c). Around 15-20% feel that the regulatory environment is their greatest obstacle to success, while 38.7% feel that regulations placed obstacles in the way of their success (SBS, 2003c). Well over half of all SMEs expressed a generalised wariness of the indirect costs associated with compliance (administrative, managerial and time) and 56.4% perceived “red tape” to be their major obstacle (Small Business Research Trust, 1999; SBS, 2003d). Around a third of potential entrepreneurs viewed the complexity of regulation as a barrier to their entrepreneurial activity (SBS, 2002c). Not only are a high proportion of UK SMEs dissatisfied with their regulatory environment, but many also believe that there has been an increase in regulation in recent years. In 2002, two thirds of small businesses believed that the burden of red tape increased from the previous year, and a survey (of 18,500

SMEs) by the Federation of Small Businesses (FSB) found that 80% were dissatisfied with either the volume or the complexity of UK legislation (FSB, 2002a; 2002b). The Small Business Research Trust Survey also found that around 80% of SMEs with 20 or more employees believed that there is too much regulation and paperwork, while a third believed that the EU is the primary source of red tape increase (Small Business Research Trust, 2001). Allocating resources to improve the quality and flow of information on regulation and tax issues could improve – perhaps dramatically – the experience of SMEs.

The Cross Cutting Review of Government Services for Small Business (DTI, 2002b) estimated that red tape costs the UK economy £6bn a year, with 68% of this falling on micro-businesses (DTI, 2002b).⁶² Dealing with taxation issues is of particular concern, with VAT and payroll taxes considered to be the greatest regulatory burdens (The Business Planning and Research International Study, 2000). VAT and employee taxation are very time-consuming, but 80% of sole traders feel that self-assessment is the most time-consuming aspect of government regulation, while over 50% of SMEs admit to either reducing the number of people they employ, or to avoiding employing more people due to worries over the increased burden of paperwork and to avoid further regulation (DTI, 2002b; The Small Business Research Trust, 2003a; SBS, 2004b). It can be determined from this evidence, then, that the majority of SMEs do not consider that the government takes into account the concerns of small businesses. Less than 1% feels that the government took “very much” concern, and just under 7% that it took “quite a lot” of account of these concerns. 36.1% considered that the government took “little” account, and 37.6% said that it took no account “at all” of these concerns. Medium-sized businesses were the most likely to say that the government took “a little” account of these concerns, and the least likely to say that it did not take account “at all” of small business concerns (SBS, 2003d; 2004b). Table 4.3 demonstrates these sentiments.

⁶² A small business with 10-14 employees is estimated to spend 81 hours a month complying with UK government regulations and paperwork, while a medium-sized business spends 43.4 hours a month complying (Small Business Research Trust Survey, 2001). Compliance costs for businesses employing less than 20 people are estimated to be 35% higher per employee than for larger businesses (SBS, 2003b).

Proportions who said...	All %	No Empl'ees %	Micro 1-9 %	Small 10-49 %	Medium 50-250 %
Very much	0.7	0.7	0.7	0.6	0.8
Quite a lot	6.8	7.2	5.6	6.5	7.2
A little	36.1	34.7	38.2	43.2	52.3
Not at all	37.6	36.4	40.8	38.9	31.1
Don't know	17.9	20.0	13.6	10.1	7.6
Unwilling to answer	1.0	0.9	1.0	0.7	1.1

Table 4.3 – The extent to which SMEs think that government takes into account the concerns of small businesses (SBS, 2004b: 118)

The Cross Cutting Review of Government Services for Small Business (HM Treasury, 2001c), the business.gov programme, and a number of SBS surveys have all identified the perception that government does not understand SMEs, and that its services are too complex and bureaucratic to access. Similar concerns were also raised by the Bank of England (2003), which found that potential entrepreneurs and established SMEs alike found it “very difficult” to ascertain what support was available to them. In addition, there is inconsistency and confusion in the quality of support services over regions (Harding, 2002), which suggests that government services for SMEs are fragmented, confusing and difficult to access. The quality of business advice and the level of co-ordination and collaboration of services between all public and private sector providers and their intermediaries should therefore be addressed.

There is a clear need to undertake research that asks enough in-depth questions about customer experience to be of value in improving the service delivery process. Providing a clear view about the level of customer satisfaction is difficult when information about the experience, interaction and outcomes are encompassed in one piece of evidence. For example, SBS research (SBS, 2001; 2004b) found that 54% of those that used government website services thought them helpful, but this figure in no way indicates how the overall experience could be made more appropriate, or could otherwise be improved. Such results are further removed from a realistic interpretation because they often rely on representative bodies to provide an SME perspective. They also employ a range of feedback techniques to ascertain the needs of SMEs, obtained mainly from large-scale

customer surveys and multiple-choice questionnaires. For instance, checkbox ticks determine the SBS and Business Link service satisfaction levels. On the one hand, Business Links serve only those SMEs that approach them (a small proportion), and on the other, customers cannot always gauge what a service should be delivering - and therefore what they should expect. In such circumstances, respondents have a tendency to mark up, rather than down. And despite many government departments reporting improved customer satisfaction levels, this is not necessarily a true indication of the situation at any level, as these measures tend to produce inflated results in order to meet targets and to secure further funding. For instance, although usage and satisfaction levels with support services are reported as high (Inland Revenue, 2003), the Small Business Research Trust survey (2001) found that while almost 40% of SMEs said they needed advice or information on government regulation, half of these were unsuccessful in obtaining it (HM Treasury, 2001c; SBS, 2004a).

There is no guarantee that government services reach all the new businesses that need them (Smallbone and Lyon, 2001).⁶³ In addition, there is no complete account of what the government requires from, and can do for, start-ups (HM Treasury, 2001c). It would also seem that, currently, SMEs are not directly asked what they want and need. Although the IR runs focus groups with SMEs, they are organised thematically and co-ordinated by independent consultants, who pass on the results, which may be affected – and subject to – their own targets and agendas. These methods are no substitute for more intensive – and direct – means of assessing the needs of SMEs, particularly in formulating delivery mechanisms. The SBS has an important role to play here in overseeing a network of SME contacts to provide policy-makers with extensive formal and *ad hoc* feedback.

Based on this and other research, it would seem that most UK SMEs are unaware of many of the services provided by their government, or else that they do not in fact see them as services (HM Treasury, 2001c; CURDS, 2002). A rationalisation of schemes, and a co-ordination of effort and information between departments, in combination with

⁶³ Inland Revenue (IR) provides a pack to all new registrations named *Starting your own business*. The IR has around 600 staff across the UK, employed primarily in Business Support Teams offering free training and advisory services to new businesses, including a registration helpline. The IR also runs over 1000 workshops and presentations a year on “Becoming Self-employed.” Customs and Excise have an extensive programme to help those paying VAT for the first time, including half-day seminars. Additional services are also available through BLOs.

delivering improved policies and initiatives, would enhance the situation. A more customer-focused, joined-up approach to delivering government services following ascertaining what SMEs want and need, designing policies and services in light of this, and finding better ways of letting them know these services are available, is key. More information is needed on what SMEs themselves think will affect them. Desired changes would be feasible if relevant, cohesive, accessible and visible policies were introduced and targeted towards SME owner/managers that unequivocally seem to be of benefit to them, and are presented in a way that cannot be overlooked by them.

A condensed version of the UK policy initiatives and programmes designed to stimulate innovation and the SME sector are presented in Appendix L.

In this “real-world” manifestation of a complex human activity system concerned with policy generation, a commonly agreed policy is required and needs to be made explicit. The differing values and attitudes of the various “actors” in the problem situation should be taken into account. Less emphasis in the systems studies literature has been placed on assessing cultural feasibility than systemic desirability (Checkland, 2001a: 71-2; Dixon *et al.*, 2002). The process of setting up a direct dialogue, or workshop, in addition to the questionnaire and interviews conducted here, could make the relevant actors’ *Weltanschauung* even more explicit. In this problem situation, both SMEs and the policy makers who aim to serve them are the joint owners of the activity system. There is a very real need to think about ways to bring policy makers and SMEs together into a more collaborative arrangement and to consider what sort of system might work. The question “how might government policies that are currently failing to be visible to and to facilitate SMEs have more relevance?” lies at the crux of this research.

4.4 CONCLUSION

Many organisations recognise the potential strategic opportunities offered by e-business, and seek to realise them. However, other than the need to adhere to legalities (such as tax and VAT requirements), most SMEs are not aware, or are not conscious beneficiaries, of projects, policies or initiatives intended specifically to benefit them in this respect. This strongly indicates that such projects, policies and initiatives, although doubtless well

intentioned and certainly well funded,⁶⁴ are failing. The overall take-up rate of e-business amongst SMEs also indicates a lack of success for these initiatives. Based on evidence arising from this and other research, it seems that many of the policies developed for the benefit of SMEs could be better targeted to their intended audience, and it would also seem that crucial changes need to be made to policy formulation, in order to render the outcome more relevant, coherent and accessible to SMEs.

Table 4.4 synergises the key issues that arose from the review of e-Business in this chapter:

The Key Issues Arising from the Policy Initiatives Literature Review
<p><i>A series of long-term EU and UK SME policies have been introduced to create a favourable competitive business environment in which SMEs can flourish</i></p> <ul style="list-style-type: none"> • The countries with the highest levels of SME internet penetration and SMEs trading online have long-standing schemes to create a support network for SMEs specifically targeted at e-business, rather than just provide general small business support. • Despite the vast funds allocated annually by governments in order that SMEs can flourish, it is often difficult to determine the objectives or achievements of policy instruments. • Incentive schemes and policies intended to benefit the SME sector need to take into account the culture, performance and abilities of SMEs (Gable and Raman, 1992). • Relevant technological innovation policy promoting e-business adoption and implementation depends on an understanding of: <ul style="list-style-type: none"> • What “really” drives adoption and implementation. • The external barriers that prevent or delay it. • How it impacts on competitiveness and employment.
<p><i>EU policy initiatives</i></p> <ul style="list-style-type: none"> • Most EU member states have launched national and regional initiatives to assist SMEs to acquire or adapt e-business skills (Mulhern, 1995). • Policies aimed to promote the benefits of e-business and other technological innovations, not least for SMEs, have also been devised. These framework policies often set clear and ambitious targets, and co-ordinate with other policies to ensure that the various components serve common goals. • Many of these policies, support schemes and programmes are interlinked.

⁶⁴ Two examples of expenditure are:

- SME budgets in FP6 include 450 million euros (£280 million) for the project *Specific Research Activities for SMEs in the Eighth Priority* alone.
- The estimated total cost of UK government services to SMEs is approximately £8bn a year (HM Treasury, 2001c).

The Key Issues Arising from the Policy Initiatives Literature Review

- The most influential of the many EU-wide policy measures, support schemes and programmes to promote SMEs that have been implemented in recent years are detailed in Section 4.2.1 of the chapter, and are summarised in Appendix K – EU Policy Initiatives and Programmes Aimed to Stimulate Innovation and/or the SME Sector.

UK policy initiatives

- Since 1998, the UK government has advocated the development of a “legal, regulatory and fiscal environment” to facilitate its stated goal of the UK becoming “the best place in the world” to conduct e-business. Believing online business success to be critical to the future competitiveness of UK businesses, the government established its agenda and laid down targets.
- The UK is well placed to exploit such an agenda, but e-business adoption has been constrained by inefficient infrastructures, incomplete understanding of the potential of the technologies, and evolving market standards and slow broadband development (Westland and Clark, 2000; Cosh and Hughes, 2003).
- SMEs have proven relatively unwilling to trade online (HM Treasury, 2001c; BAH, 2002).
- A number of UK government policies and initiatives have been developed to specifically support and stimulate the SME sector (HM Treasury, 2001c; BAH, 2002). The estimated total cost of UK government services to SMEs is approximately £8bn a year (HM Treasury, 2001c).
- The most influential of these UK government departments, policy measures, support schemes and programmes for SMEs are detailed in Sections 4.2.2 and 4.2.3 of the chapter, and are summarised in Appendix L – UK Policy Initiatives and Programmes Aimed to Stimulate Innovation and/or the SME Sector.

SMEs aren’t accessing the help that’s available

- It would seem that the majority of UK SMES do not know about the government services that are available for them, or they do not in fact see them as services (HM Treasury, 2001c; CURDS, 2002).
- Entrepreneurs and SME owner/managers are often deterred from seeking advice by a lack of information as to what type of support is on offer to them. They do not always understand the benefits of advice or services, or recognise their own need for support (Barclays Bank, 2001; SBS, 2004b).
- SMEs’ experience of government services could be improved by making these services more accessible and of better quality by rationalising relevant government departments to simplify what’s on offer, and by developing a more coherent approach to service design and delivery (Dixon *et al.*, 2002).
- There is a clear need to undertake research that asks enough in-depth questions about customer experience to be of value in improving the service delivery process.

How might government policies that are currently failing to be visible to and to

The Key Issues Arising from the Policy Initiatives Literature Review
facilitate SMEs have more relevance?

- It would seem that a rationalisation of schemes, and a co-ordination of effort and information between departments, in combination with delivering improved policies and initiatives, would enhance the situation of SMEs.
- A more customer-focused, joined-up approach to delivering government services, based on what SMEs themselves think will affect them, designing policies and services in light of this, and finding better ways of letting them know these services are available, would seem to be key – desired changes would be feasible if relevant, cohesive, accessible and visible policies were introduced and targeted towards SME owner/managers that unequivocally seem to be of benefit to them, and are presented in ways that cannot be overlooked by them.

Table 4.4 – The Key Issues Arising from the Policy Initiatives Literature Review

Ways therefore need to be found to begin a meaningful dialogue between SMEs and policy makers if government(s) and the public sector and policy makers are to meet the needs of SMEs. One intended outcome of this research is that future policy makers may become better informed about what SMEs themselves feel they “need” and about what sort of initiatives might work. The introduction of more appropriate government policies could assist more SMEs to understand the relevance of e-business in relation to their operations, and could also assist them to employ strategies that would enable them to harness the opportunities that e-business enables.

In outlining the various domains and approaches that are present within the literature relating to SMEs, e-business and policy initiatives, one of the implicit aims of this thesis is to indicate gaps in the literature which this research attempts to address. It is argued that a “transdisciplinary” approach such as IS offers scope for “moving between” theoretical and empirical parameters that other subject disciplines “work within” (Avgerou and Lebre La Rovere, 2003). It is also argued that the IS perspective creates an opportunity to study relationships that have not as yet received adequate attention between SMEs, e-business and policy initiatives. These include:

- The relationship between SMEs and government.
- The organisational implications of integrating e-business into a SME’s business.

- The implications of governments adopting a more inclusive approach to creating a dialogue with SMEs.

By adding texture to the study of these three subjects, the freedoms and limitations that e-business affords SMEs can be opened up to scrutiny. This has the potential to receive a more nuanced understanding of how governments can contribute to SMEs successfully adopting and implementing e-business.

The next chapter will explain the research methodology used in this multiple agency, multi-owner research situation, in order to draw together and reconcile the asynchronous worlds of SMEs, e-business and policy development, and also to examine what kind of theoretical framework(s) can be used to support an inclusive account of the integration of these three subject areas. Questions raised with respect to the subject matter of the research are developed into the research questions in the next chapter. When selecting a research framework that will support the study of three such disparate areas it is important to take into consideration the varying accounts of the situation. The issue of choosing a research method in relation to this and other methodological questions raised by IS researchers is also addressed in the following chapter.

Supplementary information referred to in this chapter is located in the following appendices:

- Appendix K – EU Policy Initiatives and Programmes Aimed to Stimulate Innovation and/or the SME Sector
- Appendix L – UK Policy Initiatives and Programmes Aimed to Stimulate Innovation and/or the SME Sector

Chapter 5

Research Methodology

5.1 INTRODUCTION

“The first, essential part of any research project is deciding on, and clarifying, the subject for study. Next comes identifying appropriate theory that can provide an intellectual basis for the proposed research area and choosing research methods that will enable this theory to be tested out. Also, and most important, finding an organisation that will welcome the research and obtaining the funding required for the research to be carried out. Each of these activities is fraught with difficulty. Unfortunately, compromises may be necessary”

(Mumford, 2001: 15).

The previous three chapters laid out the key points that inform this exploratory research. In the process of doing so, the justification for the research in terms of the topic was made apparent. SMEs and e-business were examined in Chapters 2 and 3, respectively. Following from this (in Chapter 4) was a review of EU and UK government policies, services and initiatives developed to provide SME e-business adoption and implementation. Detailed tables and charts were provided for each critical area, along with an overview of national data produced by international organisations, unclassified government data, and the results of original research. As a result, the parameters of the thesis have emerged in sharp relief.

The literature review shows that SMEs are under-researched and that these canons need to be brought together. In addition, actual policy development is not theoretically grounded – the findings of the research clearly show that policy initiatives need to be more theoretically informed. The theory stresses that SMEs are dissimilar to large organisations in many respects and that policies generated for them need to be more explicitly expressed and informed. In short, the thesis describes the disjuncture between

macro-level policy initiatives designed to stimulate e-business adoption and implementation by SMEs and the micro-level needs and priorities of SMEs.

These three chapters make it clear that, despite the considerable EU and UK resources allocated to formulate policies and initiatives to promote and enable the adoption and implementation of e-business by SMEs, relatively few policies and initiatives are visible to SMEs, let alone coherent, relevant and/or accessible. The case has been made that a more collaborative and meaningful dialogue between SMEs and policy makers needs to take place. Throughout the rest of the thesis, the conceptual framework synergising the key issues that are under-researched in the separate canons is now explicitly articulated. These key issues were summarised in tables at the end of each of the three chapters that as a trilogy form the literature review. These were Table 2.3 – The Key Issues Arising from the SMEs Literature Review, Table 3.1 – The Key Issues Arising from the e-Business Literature Review, and Table 4.4 – The Key Issues Arising from the Policy Initiatives Literature Review. Table 5.1 synergises the main headings of these tables, which together synergise the issues that form the backdrop for the dissertation to follow.

Table 5.1 synergises the key issues that arose from the review of SMEs in this chapter:

The Key Issues Arising from the Literature Review	
SMEs	<ul style="list-style-type: none"> • There is a clear and unambiguous need for comprehensive studies of SMEs adoption of e-business in the EU and the UK • There is no one definition of an SME • SMEs differ from large organisations • The SME sector is the cornerstone of the economic prosperity of the EU and the UK • Entrepreneurial attributes are associated with the SME sector • SME owner/managers have a very haphazard approach to human resources • Familial and social structures affect SMEs • Engagement in formal and informal networks and alliances can have profound benefits
E-BUSINESS	<ul style="list-style-type: none"> • e-Business in the UK • Much e-business research conducted to date has been insufficient • e-Business has profound consequences for business practise and research • e-Business can help SMEs develop and promote growth in regional areas • e-Business adoption can be beneficial to SMEs • e-Business adoption can pose challenges to SMEs

The Key Issues Arising from the Literature Review
<ul style="list-style-type: none"> • Drivers to e-business adoption by SMEs • Barriers to e-business adoption by SMEs • e-Business is innovation • Why and how does innovation happen?
POLICY INITIATIVES
<ul style="list-style-type: none"> • A series of long-term EU and UK SME policies have been introduced to create a favourable competitive business environment in which SMEs can flourish • EU policy initiatives • UK policy initiatives • SMEs aren't accessing the help that's available • How might government policies that are currently failing to be visible to and to facilitate SMEs have more relevance?

Table 5.1 – Summary of the Key Issues Arising from the Literature Review

Galliers (1992a) has argued that an approach for a given research project should be selected according to the object of the study and the theories to be extended or tested by it. In accordance with this perspective, this chapter explains the research methodology and theoretical framework that underpinned this multiple agency, multi-owner research situation to support the inclusive account of the integration of the subject areas the researcher strived for. In the process of selecting a research framework to support her study of these disparate areas, the researcher sought to take into consideration the varying accounts of the “problem” situation. The rationale behind her choice of a particular combination of methodologies for conducting the research is articulated, and the alignment of this methodology with the focus of study is clarified.

Checkland and Scholes (1990a; 1990b) described research as intellectual work arising out of a framework of ideas about an area of application being expressed or embodied by a methodology. Figure 5.1 illustrates this concept. They stressed the importance of defining the methodology in advance of the research. This, they argued, conceptually separates theory, which is embodied in the methodology, from practice, hence enabling the reflection and comparison that leads to learning from and about both.

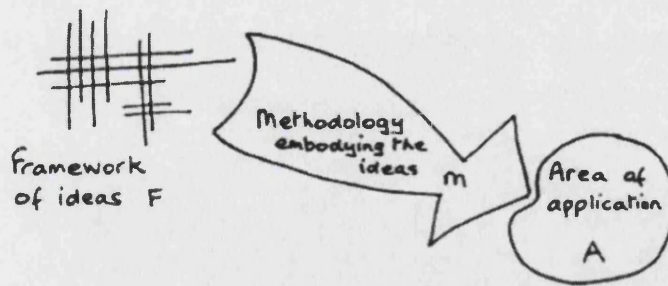


Figure 5.1 – A basic conceptualisation of intellectual work (Checkland and Scholes, 1990b: 283)

Debates regarding the appropriate treatment of technology raise inter-disciplinary issues (Avgerou and Lebre La Rovere, 2003), philosophical questions (Latour, 1999) and ethical concerns (Walsham, 1995). Choosing research design and methodology is an important factor in the rationalisation of these concerns, as the research approach is a central concern of IS researchers. A number of researchers (eg. Kaplan and Douchon, 1988; Keen, 1991; Baskerville and Wood-Harper, 1996) support combining research methods on the grounds that it increases the robustness and relevance of the research results, and can lead to developing layers of analysis. This chapter will explain how the researcher compared interpretations and conclusions in order to ensure the validity of her empirical research, in line with Mingers' (2001b) suggestion of using several whole methodologies to address different parts of the problem situation.

This research operated within the framework of a distinctive mix of research methodologies rooted in the tradition of Action Research. A combination of Action Case Research (ACR) and Dialogical Action Research (Dialogical AR) provided the focus for the research on the UK case studies. SSM conceptual modelling enabled understanding and working through the complex real-life situations that provided a means of reconciling different perspectives in an appropriate way for all parties involved (Checkland and Scholes, 1990a; 1990b; Wilson, 2001).

The researcher's theoretical development was informed by concepts from a number of different disciplines. Understanding what these theoretical frameworks and methodologies include and exclude was crucial to defining a research contribution. These theoretical

frameworks and methodologies, and the justification for choosing them, are described in this chapter.

This chapter is divided into five sections, the first of which introduces the chapter. The second section examines IS research. An overview of the issues raised in the IS literature regarding the relevant research methodologies is provided, in order to explain the researcher's choice of theoretical framework to support her research activities, and to describe the research "journey" she undertook. The third section of the chapter explains and justifies the research methodology choice. The theoretical position adopted by the researcher and the theoretical foundations of her analytical concepts and their development as the research progressed are explained in detail, and her justification for these choices made explicit.

The fourth section of the chapter is an explanation of the alignment of the research methods with the focus of study. The final section of the chapter summarises the research methodology and in so doing draws direct links between the methodological theories and the research work itself, the gathering of valid empirical evidence, which is described in the chapter that follows.

We turn now to explore some of the key themes of IS research methods. Because Information Systems is a social science discipline, IS researchers have both qualitative⁶⁵ and quantitative⁶⁶ methods at their disposal. The philosophical base upon which these methods are founded is broad (Robey, 1996). The suitability of the philosophical and methodological assumptions of the interpretative approach (Chua, 1986) for the investigation of knowledge creation processes, in contrast to positivist and critical approaches, is examined. The premise that unites IS researchers from all philosophical persuasions is an engagement with technology, although the extent of that engagement is malleable (Orlikowski and Iacono, 2001). Nonetheless, some researchers, including Galliers (1995b), consider that engagement to be of paramount importance:

⁶⁵ Qualitative research methods were developed to study social and cultural phenomena (eg. Action Research, case study research and ethnography). Qualitative data sources include observation and participant observation (fieldwork), interviews and questionnaires, documents, and the researcher's impressions and reactions.

⁶⁶ Quantitative research methods were developed to study natural phenomena (eg. survey methods, laboratory experiments, formal methods and numerical methods).

“IT can impact on organisational competitiveness, on redrawing organisational boundaries, on information decision making, in enabling the redesigning of business processes, and a redefinition of the very purpose of the business itself”
(Galliers, 1995b: 53).

5.2 IS AND RESEARCH METHODS

It has been argued that the field of IS is weakened by the breadth of theoretical diversity it encompasses (Benbasat and Weber, 1996; 2003), and that the lack of a foundation consisting of a single, unified theory is a fundamental problem for IS researchers that precludes the extension of “established knowledge” such as that derived from positivism (Walsham, 1993; 1995). Indeed, some researchers (Benbasat and Zmud, 2003) have argued that IS researchers should focus more on IT than on socio-technical aspects. This view, however, has been countered by others, including DeSanctis (2003), Galliers (2003) and Robey (2003).

In some respects, the opposition between interpretivist and positivist enquiry is representative of a paradigmatic split within the social sciences between subjectivism and objectivism (Burrell and Morgan, 1979; Orlikowski, 1993). Walsham (1995) identifies the dominance of positivist research in IS as being structured observation that aims to uncover cause-effect relationships. Interpretivist research challenges determinist assumptions not only in terms of their implications for the study of technology, but also in terms of all social phenomena. These modes of enquiry are explained later in this chapter.

However, this split can also be seen as a strength. Accordingly, Robey (1996) calls for a “disciplined methodological pluralism” in which theories and methods can be justified on pragmatic grounds as “appropriate tools for accomplishing research aims” (1996: 403). Avison and Wood-Harper (1990) define an IS methodology as:

“a coherent collection of concepts, beliefs, values and principles supported by resources to help a problem-solving group to perceive, generate, assess and carry out in a non-random way changes to the information situation”
(Avison and Wood-Harper, 1990: 20).

Avgerou and Lebre La Rovere (2003) also identify disciplinary emphasis as a conditioning factor that creates prevailing tendencies in technology research. They emphasise the value of the “interdisciplinary discourse,” drawing attention to the boundaries between IS, economics and organisational research. The broad base from which IS methodology is constructed allows the researcher the opportunity to objectively apply critical consideration to the theoretical foundations of their discipline. This is particularly pertinent to *this* research project, as its theoretical development has been informed by concepts from a number of different disciplines. Understanding what these theoretical frameworks include and exclude was crucial to defining a research contribution. In the case of this research, the researcher felt that there were clear grounds for considering the infrastructural and organisational implications of e-business related government initiatives alongside the SMEs upon which they are intended to impact, and that there were also grounds for considering the implications of, and the influence that, market conditions and policy debate have upon SME adoption and implementation of e-business. It became increasingly obvious to, and important for, the researcher to draw out the relationships between these associated activities, and to capture these “ongoing events” through longitudinal, qualitative research. Considering these activities *in situ* was necessary in order to overcome orthodoxies relating to determinism.

The overall emphasis of situated research is on studying phenomena *in situ* (Suchman, 1987; Orlikowski, 2000). Situated studies enable IS researchers to draw on various aspects of technology adoption, implementation and development, support the process of selecting a research methodology and designing fieldwork, and tend to bring to light a number of important issues. The analytical perspectives offered by Orlikowski (2000) argue the case for a defining situation in which to study technology that is either *in design* or *in use*. Drawing on one or another of these perspectives places practical implications with respect to the research scenarios that are sought out or constructed.

The researcher’s readings made it clear that understanding the impact that these perspectives place upon research outcomes was important, especially with respect to coming to a deeper understanding of the operations of SMEs. Commonly, situated research involves the construction of scenarios to conduct investigations: the “emerging circumstances” under analysis are usually, therefore, to some extent constrained by the

scenario(s) put in place by the researcher (Suchman, 1987; Brown and Duguid, 1989a). This allows for a focused study. It also results in filtered social and political processes. As the research participants were pre-selected, the relevance of alliance or group formation was lost, as was the relationship of action to an unpredictable “flow of events.” The researcher made concerted efforts to draw the social, distributed nature of IS to the fore, but there was still a tendency for the researcher to interpret the cognitive domain as being somewhat “removed” from the world.

However, all research is based on underlying philosophical assumptions about what constitutes “valid” research and about which research methods are appropriate. These assumptions, which relate to the underlying epistemology about knowledge and how it can be obtained, guide the research (Hirschheim, 1992). Orlikowski and Baroudi (1991), following Chua (1986), suggest that there are three primary research categories: positivist, interpretive, and critical. While these three research epistemologies are *philosophically* distinct, these distinctions are not always clearly delineated (Lee, 1989a). They are outlined here:

- **Positivist Research** - positivist approaches generated from the scientific tradition, and are characterised by repeatability, reductionism and refutability (Checkland, 1981). They assume that observations of the phenomena under investigation can be made objectively and rigorously (Klein and Lyytinen, 1985; Galliers, 1991c). Orlikowski and Baroudi (1991) classify research as positivist if there is evidence of formal propositions, quantifiable measures of variables, hypothesis testing, and the drawing of inferences about a phenomenon from the sample to a stated population.
- **Interpretive Research** - interpretive research attempts to understand phenomena through the meanings assigned to them. The interpretivist viewpoint is that human interaction inevitably involves understanding and meaning (Chua, 1986; Galliers, 1992a). An observer must come to understand, and to interpret, the meaning that social acts have for participants – this is fundamental to all forms of social interaction. The interpretivist researcher must therefore give a description of information flows and data structures, as well as an interpretation

and elicitation of the socially constructed patterns of meaning that generate observed behaviour. The nature of socially constructed reality is described in Appendix N.

Interpretivists view the world as “an emergent social process” that is an extension of human consciousness and subjective experience” (Burrell and Morgan, 1979: 253), in order to “understand the inter-subjective meanings embedded in social life” (Gibbons, 1987: 3). Interpretivists consider the impact of the researcher on the system being studied and the problems associated with forecasting future events concerned with human activity, given that there will always be a mixture of intended and unintended effects (Galliers, 1991c: 331, after Galliers, 1984a: 284, after Checkland, 1981: 68-71). Interpretive research does not predefine dependent and independent variables, but rather focuses on the full complexity of “human sense-making” as the situation “emerges” (Kaplan and Maxwell, 1994). The possibility of an “objective” or “factual” account of events and situations is rejected by interpretivists, who seek instead to gain a relativistic understanding of the fundamental “structure” of a phenomenon. Orlikowski and Baroudi (1991) suggest that interpretive researchers adopt a non-deterministic perspective wherein the intent of research is:

- To increase understanding of the phenomenon within cultural and contextual situations.
- To examine the subject in its natural setting, from the perspective of the participants.
- Where researchers do not impose their own understanding on to the situation.

The assumption of interpretative research philosophy for the relationship between theory and practice accepts that the researcher can never assume a value-neutral stance, and is always implicated in the phenomena being studied, because a researchers’ prior assumptions, beliefs, values and interests will always intervene to shape their investigations (Orlikowski and Baroudi, 1991).

Interpretivism has been subject to criticism in the literature for not examining thoroughly the conditions which give rise to certain meanings and experiences, for silencing the provision of explanations of unintended consequences of actions, for not addressing explicitly the structural conflicts within society and organisations, and neglecting to explain historical change (Orlikowski and Baroudi, 1991), for its reliance on the researcher's skills and ability to identify their biases and assumptions, and for their subsequent potential to impact the interpretation of the phenomena under study (Galliers, 1991c: 338). Notwithstanding these challenges, the doctoral research presented here is both collective and interpretivist. The strengths of interpretive research lie in its ability to represent "reality" following an in-depth self-validating process in which presuppositions are questioned, and understanding of the phenomena under study is refined (Galliers, 1991c: 338).

- **Critical Research** - critical researchers assume that social reality is historically constituted, and that the ability to consciously act to change social and economic circumstances is constrained by various forms of social, cultural and political domination. A critical philosophical stance (Hirschheim and Klein, 1995) aims to critique the status quo through the exposure of what are believed to be deep-seated structural contradictions within social systems, and thereby to transform these alienating and restrictive social conditions (Lyytinen and Klein, 1985; Orlikowski and Baroudi, 1991). Such a stance assumes that social reality is historically constituted, and that the contradictions inherent in existing social forms lead to inequalities and conflicts, from which new social forms will emerge. In addition, critical researchers, with the aim to intervene in the situation, believe that they need to understand the language of the humans they are studying, an understanding that is temporally and spatially bound (Orlikowski and Baroudi, 1991).

The researcher took the approach, informed by interpretivism, that the reality of knowledge creation processes can neither be objectively given, described by measurable properties independent of her researcher, nor by her instruments. Her research was therefore informed by her belief that attention should be drawn to the human actors in a

given research situation, and also to the users of the research methods and to the research methods themselves (which are, after all, the instruments for provoking responses from the “real” world) (Mingers, 2001a). Consequently, the researcher in an interpretive investigation (such as this) must address the following relationships that often underlie a number of biases:

- Those between the researcher and the situation.
- Those between the research methods and the situation.
- Those between the researcher and the methodologies (Mingers, 2001a).

Consideration of these relationships determined the initial actions taken by the researcher, her planning and design of the research, and informed the initial stages of the research. They evolved as the research progressed, and served as reference points for the critical reflection necessary to structure the choices made throughout the research process (Ormerod, 1996). The researcher, informed by the literature, understood that her role within the research situation could not, therefore, assume a neutral stance. The relationship of the researcher with practically interpreting the methodologies in her empirical research is described in detail in the following chapter, which concentrates on the procedural aspect(s) of the research. Emphasis there is placed on the key issue of the role of theory to inform practice. Eisenhardt (1989) discusses this issue in the context of organisational research, and identifies three distinct uses of theory:

- As an initial guide to design the research and to collect data (Walsham, 1993).
- As part of an iterative process of data collection and analysis (Orlikowski, 1993).
- As a final product of the research (Orlikowski and Robey, 1991).

Inspired by Orlikowski and Baroudi (1991: 24), the researcher, in choosing her research approach/strategy, determined how the phenomenon she was studying would and could be revealed, and how to present the consequences of the knowledge thus being generated. Taking account of the fact that, often, more attention is paid to the elegance of research design within an approach than to questioning the appropriateness of the research philosophy and the approach itself (Galliers, 1994; 1995a), the considerations of both research design and philosophical choice and approach were considered of equal

importance. In order to explicate this stance, the next section of this chapter describes how she arrived at her methodological approach for conducting the research.

5.3 THE RESEARCH APPROACH

The researcher, from the beginning of this research project, felt that a distinctive methodological approach was required for encapsulating not only the SME adoption and implementation of e-business, but also the effects of relevant government policies as they passed through uncertain alliances and various conceptualisations. This research operated within the framework of a distinctive mix of research methodologies rooted in the tradition of Action Research. A combination of Action Case Research (ACR) and Dialogical Action Research (Dialogical AR) provided the focus for the research on the UK case studies. SSM conceptual modelling provided a means of reconciling the different perspectives involved (Checkland and Scholes, 1990a; 1990b; Wilson, 2001).

The researcher's reasons for choosing a multi-methodology approach are detailed below. A review of the benefits of combining multiple methods is also presented. Then, Action Research and SSM (which is rooted in the tradition of Action Research) are described. Explanations of Dialogical Action Research, Case Study Research and Action Case Research follow.

5.3.1 Multi-Methodologies

A substantial body of literature relating to the selection and use of multiple data collection methods ("triangulation of data") in IS research does not yet exist (Denzin, 1970; Kaplan and Douchon, 1988; Eisenhardt, 1989; Galliers, 1992d; Gable, 1994; Markus, 1994; Cornford and Smithson, 1996; Braa and Vidgen, 1999; Gill and Mingers, 1997; Irani *et al.*, 1999; Mingers, 1989: 2006; Mingers *et al.*, 2004). This is not "just" because of the dynamic natures of IS research, or because different methods, when applied to the same data, "yield very different pictures of the world" (Mingers, 2001a: 252; 2006). Adopting a hybrid research methodology can be especially effective as a result (Keen, 1991). The theoretical foundations for research methods can be justified on research and pragmatic grounds (Robey, 1996: 406). The multi-disciplinary nature of IS research encompasses a number of different research methods. The process of research includes gathering

“disparate information” and distilling or synthesising it – the literature stresses that it makes sense to choose a number of “approaches” at different stages (Galliers, 1996: 152) or to combine a range of methods and/or parts of methodologies in order to meet the needs of a particular situation (Gill and Mingers, 2004; Mingers, 2001b; 2006).⁶⁷ As “no objective and complete account of a problem situation” can ever be given (Checkland, 1995a: 5), the adoption of a single paradigm inevitably garners a limited view of a particular situation (Orlikowski and Baroudi, 1991; Mingers, 2001a; 2001b; 2006).

A research project is not usually a single, discrete event, but rather consists of a process continuing through a number of phases. Therefore, a given research method may be more useful in relation to a particular phase of a given research project than another might be, and the prospect of combining research methods may well produce a richer

⁶⁷ Linking together parts of methodologies from different paradigms is dependent on the idea that techniques or methods can be detached from one methodology and used in another. Generally, such a transfer will conserve the original function, but it is possible to transfer a methodology or technique into a setting that makes different paradigmatic assumptions. This linking process requires that methodologies be systematically “decomposed” in order to identify detachable elements and their functions or purposes. This can be done by making distinctions between underlying principles (*why*), methodological stages (*what*), and techniques or methods (*how*). However, the particular purpose or output of a technique needs to be interpreted within the context of the methodological stage that it realises, in order that its context and interpretation does not change (Mingers, 2001b). Figure 5.2 shows such a “decomposition” of SSM.

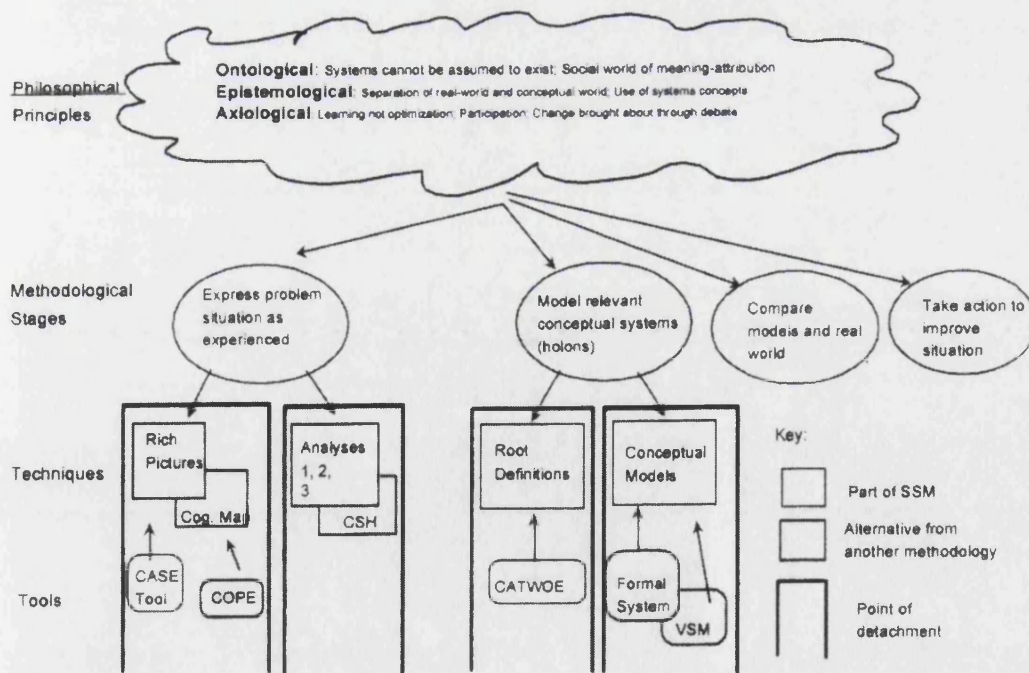


Figure 5.2 – Decomposing SSM (Mingers, 2001b: 300)

picture for seeing and understanding the complex web of relationships and interconnectivities, which is likely to lead to better decision-making regarding the research issue(s) (Guba, 1990; Landry and Banville, 1992; Smaling, 1994; Benbasat and Weber, 1996; Mingers and Gill, 1997; Mingers, 1997; 1999; 2000; 2001a; 2001b; Tashakkori and Teddlie, 1998; Lewis and Grimes, 1999). Mingers (2001b) suggested that the design of the multi-methodology intervention(s)⁶⁸ should occur at the beginning of a research project, and that their purpose should be as to outline what combination of methods and techniques are to be used in the light of the research question(s). Further, he stresses that, as the research proceeds there should be a continual monitoring process of reflection and design to adjust activities in light of internal and external occurrences. This, Mingers argues, maintains a distinction between the ongoing design of the project and its actual operation, as depicted in Figure 5.3.

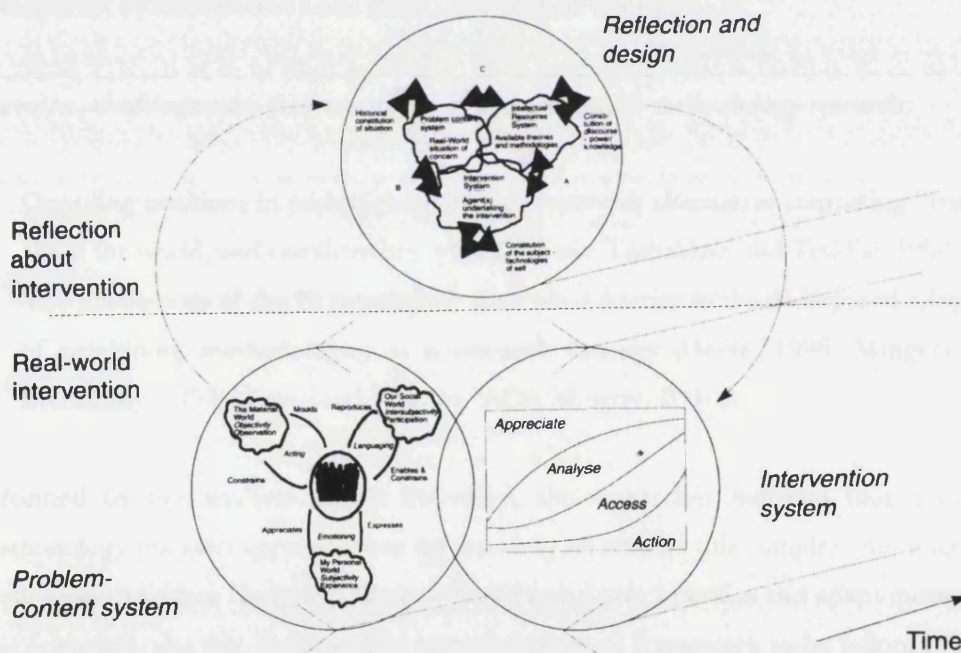


Figure 5.3 – The Multimethodology Process (Mingers, 2001b: 301)

⁶⁸ Mingers and Brocklesby (1997) proposed that an intervention consists of the following four phases:

- *Appreciation* – gaining as rich an appreciation of the situation as possible.
- *Analysis* – analysing why the situation is as it appears, in order to understand the history that has generated it, and the particular structure that maintains it.
- *Assessment* – considering ways to change the situation.
- *Action* – taking action to effectively bring about agreed changes.

The two lower cylinders illustrated in Figure 5.3 show the ongoing process of the intervention in which action is taken in the problem content system. The upper cylinder shows the meta-level activities of *reflection* and *design* that respond to the (intended and unintended) consequences of previous actions and specifies the next step(s) to be taken and method(s) to be used.

This doctoral research uses the unique combination of Action Case Research, Dialogical AR and SSM conceptual modelling. By so doing, it attempts to “build, test and extend” IS theory, particularly SSM theory development: SSM has not been widely used in the SME environment, and there are very few examples of SSM iteration having taken place. In addition, SSM has rarely been applied in complex multi-agency situations. Therefore, on these two fronts, this research fills a void in the literature. The view of adopting alternative research approaches in the process of “theory building, testing and extension” is supported by Galliers and Land (1987) and Galliers (1991c).

However, challenges can arise as a result of adopting multi-methodology research:

- Opposing positions in each dichotomy can represent alternative competing “truths” about the world, and can therefore resist synthesis (Tashakkori and Teddlie, 1998).
- The perceptions of the IS community itself are a barrier to the widespread adoption of combining methodologies as a research strategy (Deetz, 1996; Mingers and Brocklesby, 1997; Munro and Mingers, 2000; Mingers, 2001a).

Informed by her analysis of the literature, the researcher believed that a multi-methodology research approach was the best way to address this complex multi-agency, multi-owner problem situation. The benefits of being able to utilise and adapt more than one approach, she felt, could enable a methodological framework to be tailored to the particular requirements of this research project, and would provide a much fuller and richer understanding of the situation. She also believed that these benefits overrode concomitant concerns.

Building on this introduction, the next section of the chapter examines Action Research, the overriding philosophy of Soft Systems Methodology, a description of which follows.

5.3.2 Action Research

Action Research is a highly situational form of research that involves practical problem solving that has theoretical relevance (Mumford, 2001; McKay and Marshall, 2001: 47). The underlying philosophy of Action Research consists of the (easily substituted) roles of subject and researcher, and the researcher's ability to affect the situation under review by actively connecting with the practical goals of the research (Galliers, 1984a: 285). Although the aim of Action Research projects is to improve problem situations rather than to "solve" a particular problem (Vidgen and Braa, 1997; Avison *et al.*, 2001), no other research approach "has the power to add to the body of knowledge and deal with... practical concerns" in such "a positive manner" (Avison *et al.*, 1998: 44).

Action Research particularly appealed to the researcher, as only a limited number of factors can be studied under "laboratory conditions," and studies that do not reproduce a "real-world" environment may select a technique that would be ineffective in the real world (Galliers and Land, 1987). Action Research can be a way of building theory and descriptions within the context of practice (Hult and Lennung, 1980), and of testing them through intervention in the organisational laboratory (Argyris and Schon, 1991). Complex social processes can be studied by introducing changes into processes and by observing the benefits of these changes (Baskerville, 1999). Consequently, Action Researchers approach IS research as social enquiry rather than as social science, and Action Research is therefore interpretive and qualitative.

Action Research was introduced to the IS community as a research methodology by Wood-Harper (1985), who later incorporated Action Research concepts into an action-based systems development methodology called Multiview (Avison and Wood-Harper, 1985; Baskerville and Wood-Harper, 1996). Multiview was influenced by the work of Checkland and Mumford (Avison and Wood-Harper, 1995: 102; Avison and Fitzgerald, 2003: 457). It is a complete view of the process of IS development requiring that different viewpoints and the relationships between them are identified, recognised and combined into a flexible approach (Avison and Wood-Harper, 1995: 104). Multiview is explained in Appendix M.

As a research method, Action Research encompasses a set of principles about action and knowledge generation that include:

- A focus on the knowledge of, and outcomes from, action (Susman and Evered, 1978; Jonsson, 1991).
- Studying a phenomenon in its natural setting in order to uncover its complexity and richness (Benbasat *et al.*, 1987; Baskerville and Wood-Harper, 1998; Yin, 1994; 2002).
- Interpreting individual and organisational patterns of practice (Argyris *et al.*, 1985; Lyytinen and Klein, 1985; Orlikowski and Baroudi, 1991; Myers 1994a; 1994b).
- Valuing researcher, developer and user experience in creating knowledge (Argyris *et al.*, 1985).
- Employing a “process view” of research (which requires sustained and detailed data collection) (Susman and Evered, 1978; Yin, 1994).

The major characteristics of IS Action Research are that it:

- Is characterised by:
 - Multi-variate social settings.
 - Interpretive assumptions about observation.
 - Intervention by the researcher.
 - Participatory observation.
 - The study of change in the social setting (Baskerville and Wood-Harper, 1998).
- Increases understanding of a social situation, emphasising the complex nature of the IS domain.
- Assists in practical problem solving whilst simultaneously expanding scientific knowledge by means of the researcher’s intervention in the problem setting.
- Is collaborative, in order to enhance competencies arising from the respective actors.
- Is applicable for the understanding of change processes in social systems (Baskerville, 1999).

- Has a reflective and iterative cycle (Baskerville and Wood-Harper, 1996).

Action Research is, above all, an iterative learning process, where the most important result is the experience and improved knowledge of the participators (Ihlström and Nilsson, 2000a; 2000b). The steps undertaken in Action Research are:

- *Planning* – the initial reflection on the situation, planning an experience or action.
- *Acting* – the consideration of alternative courses of action to attain improvement or to solve the problem.
- *Observing* – the selection and realisation of one of the courses of action considered in the previous stage, enacting the plan, and observing how it works.
- *Reflecting* – on the results of the evaluation, and subsequently on the whole Action Research process (Kemmis and McTaggart, 1988).

In Action Research, theory and practice inform each other in a never-ending spiral – the separation of research and practice is avoided (Susman and Evered, 1978; Avison and Wood-Harper, 1991a; 1991b; Baskerville and Wood-Harper, 1996; Martelsson and Lee, 2004). The method responds directly to a need for relevance in IS research, as it addresses complex “real-life” problem situations (Avison *et al.*, 1997), produces “highly relevant” research results, and is grounded in practical action aimed at solving an immediate problem situation whilst being simultaneously informed by theory (Baskerville, 1999). Rigorous research is often “irrelevant” (Robey and Markus, 1998; Davenport and Markus, 1999; Benbasat and Zmud, 1999). Conversely, much “relevant” research is not academically recognised, as it does not conform to traditional standards for rigorous research (Kock, 1997; Kock and Lau, 2001).⁶⁹ Action Research can be used to generate

⁶⁹ Benbasat and Zmud (1999: 5) believe that “IS research has a credibility gap within the business community.” They consider that “relevant” research is where “implications are implementable.” Believing that authors should “focus on the concerns of practice, provide real value to IS professionals, and apply a pragmatic rather than academic tone,” they suggest that for the following reasons, much current IS literature lacks sufficient relevance:

- An emphasis on rigor over relevance.
- A lack of a cumulative tradition.
- The dynamic nature of technological change.
- Limited exposure to relevant contexts (such as IT-related usage and management behaviours).
- Institutional and political factors (such as those within academic institutions, which do not encourage the pursuit of relevance) (Benbasat and Zmud, 1999: 5-7).

new theory, to reinforce or contradict existing theory, and can be combined with other research methods. For these very reasons, the researcher felt that an Action Research study was ideal and appropriate to investigate her research “problem situation.”

Action Research strives to marry rigour to relevance by conducting scientific research in the setting of a real-world problem. In Action Research, an experimental stimulus or experimental treatment simultaneously plays the role of an intervention or action aimed at remedying the real-world problem. In turn, how the real-world problem responds to the experimental stimulus can, in the best case, play the dual roles of:

- Evidence confirming the scientific theory.
- Remedy mitigating the real-world problem.

In simultaneously targeting a specific real-world problem and expanding scientific knowledge, Action Research can thereby resolve the “rigor versus relevance” dilemma (Avison *et al.*, 1997). Accordingly, Figure 5.4 illustrates the symbiotic relationship of Information Management research and practice.

Benbasat and Zmud (1999: 9-11) recommend that, for IS researchers to become “more proactive in a direct sense,” it is “imperative” that “cumulative, theory-based, context-rich” research is conducted. They also stress the importance of authors developing frames of reference” that are “intuitively meaningful to practitioners to organise complex phenomena” and that “provide contingency approaches to action.”

Alter (2001: 7-8), however, opposes this view, suggesting that, in order to increase relevance in IS research without losing rigor, IS articles should be published in both short and long versions:

- The short version would “demonstrate relevance” and would be rigorous in terms of its argument about “what the question is, what the conclusions are, and why this matters.”
- The long version would be “designed to demonstrate rigor and provide supporting details” and would be rigorous about “intellectual precedents, theories, research methodology, data collection, data analysis possible threats to validity of the work, etc.”

An alternative view on the relevance of empirical work in IS research is provided by Lyytinen (1999), who considers that “relevance” in research comes down to what the researcher “sees” as practice and what elements are relevant in “understanding and changing” that practice.

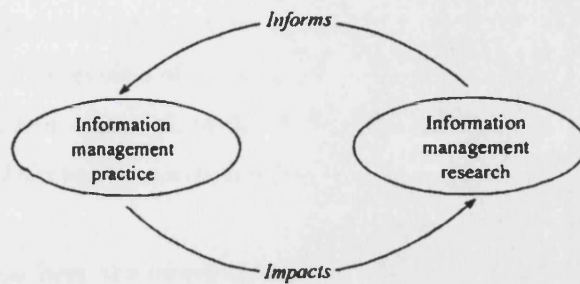


Figure 5.4 – The interdependency of Information Management research and practice (Galliers, 1995a: S50)

Baskerville's five-stage Action Research Cycle builds on the intrinsic Action Research iterative learning process, with the researcher and the case organisation principal(s) working together to assess and diagnose the problem situation, to plan the intervention, to take action, to evaluate the action's results, to identify lessons learned, and to once again assess and diagnose the empirical situation. Figures 5.5 illustrates this process:

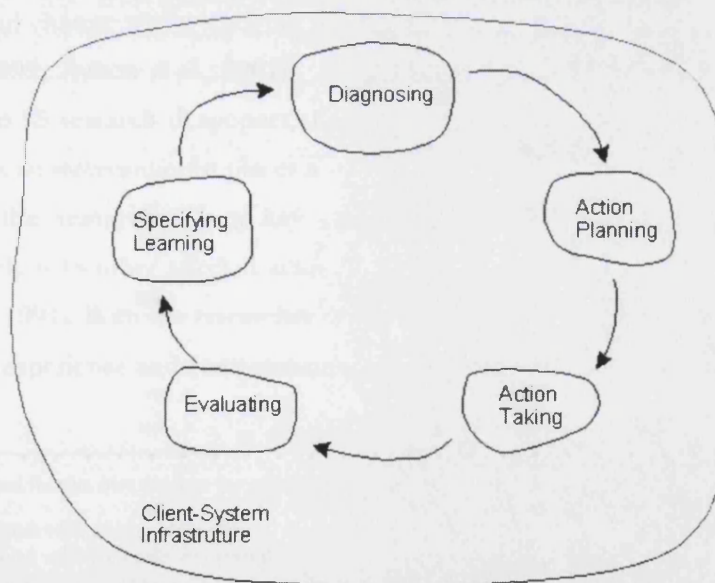


Figure 5.5 – The Action Research Cycle (Baskerville, 1999: 14)

Action Research encourages researchers to experiment through intervention as well as through reflection (Avison *et al.*, 1997). The dynamic nature of the Action Research

process means that unexpected events and an increased knowledge of the problem situation can result in a revision of research objectives. The consequences can be different from those intended or expected, as the post-change situation will alter as time passes, new staff arrive and circumstances change.⁷⁰

Action Research has been the target of criticism from positivists, who tend to view only experimental and survey research as being “valid” modes of scientific inquiry (Kock *et al.*, 1997). In fact, some researchers (Kock *et al.*, 1997; Kock and Lau, 2001), go so far as to claim that Action Research and positivism should not be placed in the same conceptual category.⁷¹

The collaborative framework of Action Research can diminish the researcher’s ability to control the process and outcomes of the research (Avison *et al.*, 2001). This lack of control can make it difficult to apply Action Research as an instrument in an orchestrated research program. Unlike the case study researcher, who seeks to study, but not change, organisational phenomena, the Action Researcher is concerned with creating organisational change whilst studying the change process (Baburoglu and Ravn, 1992; Lee *et al.*, 1992; Avison *et al.*, 2001). Although this makes Action Research especially interesting to IS research (Rapoport, 1970; Avison *et al.*, 1998; 2001), the researcher’s active role as an interventionist places a considerable responsibility on him/her (Galliers, 1992a), as the researcher is a key participant in the research process, working collaboratively with other affected actors to bring about change in the problem context (Checkland, 1991). Both the researcher and the problem owner are hence reliant on the other’s skill, experience and competencies in order for the research process to achieve its

⁷⁰ Four additional factors can account for unexpected outcomes:

- Problems with goal specification.
- Problems with a clearly delineated process.
- Contingency problems using a method within particular settings.
- Problems with the researcher’s implementation of the methodology (Chiasson and Dexter, 2001: 100).

⁷¹ Kock *et al.* (1997) and Kock and Lau (2001), for example, argue that Action Research is not an epistemology (such as positivism and interpretivism). They suggest that, while Action Research is particularly useful for the development (but not the testing) of IS theoretical models, it is “not very appropriate” for positivist inquiry. They also claim that “once this is understood and accepted” by the IS research community, a new set of standards will emerge by which to assess rigor in IS Action Research, replacing the debate between “action researchers” and “positivist researchers” with “mutual co-operation” in attempts to answer research questions.

dual aim of practical problem solving and the generation of new knowledge and understanding (Hult and Lennung, 1980).

Action Research has also been criticised in the literature as being “little more than consultancy” (Avison, 1993).⁷² When interventions are deemed successful, and causal connections and explanations cannot be “safely made,” there is often a perceived lack of impartiality and bias in Action Research (Baskerville and Wood-Harper, 1996). The following is a list of complaints that have all contributed to Action Research falling into disfavour in the literature:

- The (perceived) alleged lack of scientific rigour and discipline.
- The (perceived) lack of validity in data (Avison and Wood-Harper, 1991a; 1991b; Baskerville and Wood-Harper, 1996).
- The lack of guidelines for would-be Action Researchers to follow (Stowell, 1995; Lau, 1997; McKay and Marshall, 1999a).
- The difficulty of generalising results from Action Research studies (McKay and Marshall, 2001: 49).
- Goal dilemmas between the practical problem(s) and the research endeavour (Rapoport, 1970).
- (Possible) value dilemmas between the roles of consultant and researcher (Rapoport, 1970).
- Difficulties establishing rigour and objectivity according to conventional positivist natural science traditions (Susman and Evered, 1978; Lawler, 1985).
- A preoccupation with organisational problem solving at the expense of transferable theoretical understandings (Susman and Evered, 1978).
- A lack of epistemological clarity in theory testing and development (Rose, 1997).

⁷² The traditional consulting process requires a consultant’s application of expertise to a problem. The consulting process can be linear and sequential, and does not necessarily require the consultant to reflect and/or revise expertise except for economic gain – indeed, the process allows the consultant to re-apply the same expertise repeatedly in the same and other situations and/or organisations. The case organisation principal can be largely absent, and usually plays a passive role except in the implementation of the consultant’s expertise (McKay and Marshall, 2001). However, Action Research differs from traditional consulting in that the researcher:

- Possesses and applies a theoretical approach to the given situation;
 - Works in unison with the case organisation principal;
 - Seriously considers negative feedback and/or failed attempts to remedy the problem at hand; and
 - Attempts to revisit and revise (Martensson and Lee, 2004: 6).
-

As a counter to these criticisms, Martensson and Lee (2004) argue that Action Research differs from traditional consulting in that:

- The researcher typically possesses and applies an expertise rooted in the academic world of a scientific discipline.
- The researcher(s) and the practitioner/case organisation principal(s) work jointly with one another as members of a team.
- The team seriously considers failed attempts to remedy the problem and seeks to revisit and revise its expertise whenever possible. In Baskerville's Action Research Cycle (Figure 5.5), the learning unfolds in the "evaluating" and "specifying learning" steps (Martensson and Lee, 2004: 6).

In addition, there is little guidance for the researcher on how to conduct Action Research. McKay and Marshall (1999a) question whether there has been sufficient academic scrutiny of the Action Research process and its underlying data collection and analysis techniques.⁷³

The declaration of an explicit methodological framework establishes the validity of Action Research, making it a "legitimate rigorous alternative to positivistic research" (Checkland, 1991: 402) and distinguishes it from consultancy (Baskerville and Wood-Harper, 1996). Criticisms about Action Research can be alleviated by considering the research project as a dual cycle research process (ie. by laying research interests over problem solving interests). McKay and Marshall (2001) stress that these two cycles should be "interlinked and somewhat contingent" on each other. Figures 5.6, 5.7 and 5.8 illustrate this dual cycle research process.

⁷³ However, the following guidelines have been suggested for controlling Action Research projects in IS:

1. *Initiating the project* – in a research-driven situation, the researcher may possess a general theoretical approach to addressing problem situations and looking for settings that are characterised by such problems; in a problem-driven situation, the researcher may seek help from theoretical specialists.
2. *Determining the project's authority* – including the determination of action defining the scope of the project, the power over the structure of the project, and the process(es) for renegotiation and/or cancellation.
3. *The degree of the project's formalisation* – involves the ability to renegotiate the research structures, and to represent the evolution of the project as the outcomes emerge (Avison *et al.*, 1998; 2001).

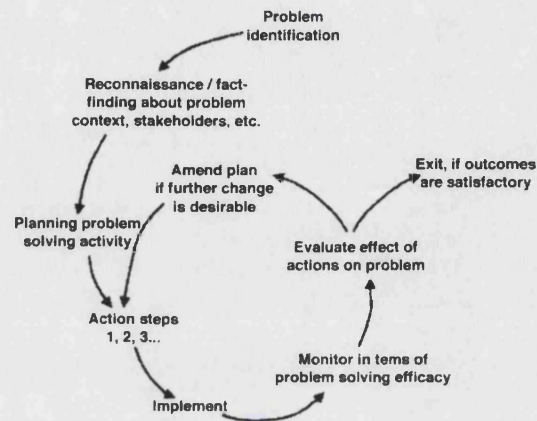


Figure 5.6 – The problem solving interest in Action Research (McKay and Marshall, 2001: 50)

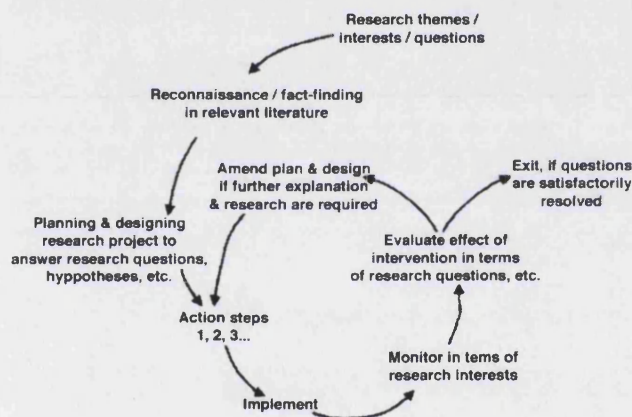


Figure 5.7 – The research interest in Action Research (McKay and Marshall, 2001: 51)

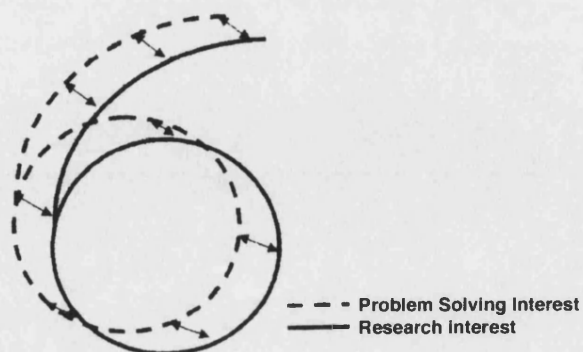


Figure 5.8 – Action Research viewed as a dual cycle research process (McKay and Marshall, 2001: 52)

Adoption of this particular process view of Action Research results in “greater clarity” for all participants (McKay and Marshall, 2001). Considering the dual imperatives of problem solving and research in two separate but interconnected and interacting cycles enables researchers to be more explicit about the reflection and learning process, and allows for better “planning, evaluation and monitoring” of the Action Research process (McKay and Marshall, 2001: 52).

Notwithstanding these challenges, Action Research is a powerful tool for those researchers who are interested in investigating “the interplay between humans, technology, information and socio-cultural contexts” (McKay and Marshall, 2001: 48); while Action Research brings an intellectual framework and knowledge of the research process, the problem owner brings knowledge of the context of the problem situation (Burns, 1994; McKay and Marshall, 2001).

The process and outcome of stakeholder involvement is often complex and driven by political and strategic decisions. Consensual involvement tends to become more political and structural over time (Baskerville and Wood-Harper, 1998). Many IS methods implicitly assume an organisation is an integrated and functioning unit (Klein and Lyytinen, 1985; Hirshheim and Klein, 1985; Chiasson and Dexter, 2001), but conflict and turbulence are prevalent in most organisations (Robey *et al.*, 1989). Structural conflict within a complex and loosely amalgamated organisation can be incompatible with many IS methodologies, especially when the facilitative or interpretive role of the researcher is unable to deal with structural conflict as a result of reliance upon “good faith” discussions between organisational members (Chiasson and Dexter, 2001).

This doctoral research used observation and participatory methods for data collection, which are fundamental to Action Research (Lau, 1997; Avison *et al.*, 2001; Baskerville and Pries-Heje, 1999). However, one differentiating aspect is the lack of an attempt for control over any variables. The researcher did not enter the field with the intention to intervene by actively taking part in the resolution of the research problem at the SME sites,

however. Dialogical Action Research and Action Case Research, which are hybrids of Action Research, were instead utilised. Action Research is the over-riding methodology of SSM. An explanation of SSM is essential to a full understanding of this research. Therefore, a description of SSM follows.

5.3.3 Soft Systems Methodology

As a research method, SSM articulates a process of inquiry that leads to action. SSM is research applied with the goal of learning about complex, problematical human situations through deliberate interventions in order to achieve positive and desirable change in the organisational setting whilst simultaneously adding to theoretical knowledge (Galliers, 1992a; Vidgen and Braa, 1997; Avison *et al.*, 1998). It is a proven effective, subjective and efficient means of carrying out a systems analysis of procedures in which technological processes and human activities are interdependent (Stowell and West, 1989; Venters *et al.*, 2002). An interpretive philosophy with a systems theoretical base that has a flexible methodology with an organisational problem-solving focus, SSM is creative, intuitive, analytical and participative. An SSM enquiry (often) provides a suitable framework for tackling problems that are difficult to articulate and define, and for which a clear set of generally agreed objectives cannot be established. SSM often results in several ambiguous organisational outcomes (Checkland, 1981; Wilson, 1984; Holwell, 1992; Barry and Fourie, 2001).

SSM, as a methodology, can be tailored to fit both the situation and the style of the researcher, as it is not a sequential process – a researcher can start anywhere and proceed in any direction (Wilson, 1992; Checkland, 1995). A key feature of SSM is the advice to keep a project vague and wide-ranging for as long as possible (Finegan, 1994; Barry and Fourie, 2001). These attributes were highly desirable to the researcher, given the multi-faceted nature of the research problem under review. Although SSM espouses the notion of a socially constructed reality, it does not incorporate a well-developed theory of the nature and process of that construction. Through various cycles of iterative intervention, models of purposeful activity are developed and adapted to changing knowledge practice (Checkland, 1981; Venters *et al.*, 2002). The process of continually developing conceptual models of a situation being researched, and of debating these with the various stakeholders, comparing these with what exists in reality, contributes to:

- Improved understanding.
- Reduced conflicts.
- Engendering positive attitudes to any action embarked upon.

These models “will not in general precisely map the observed real world action” (Checkland, 2001a: 71). The purpose of comparing the models with the real world is to instigate a debate about possible changes. The debate informs possible implementable changes to improve the problem situation. The implementable changes will represent an accommodation between the different conflicting views, making “purposeful action” possible. These changes must be both “systemically desirable and culturally feasible” for all involved. The purpose of the debate, therefore, is to find the way to take action (Checkland, 2001a: 71-2). What is “culturally feasible” in a given situation will itself be changed by means of the debate structured by the models used. But as cultures are “never static,” SSM can be seen as a positive way of “exploring” a given culture and of “enabling” it to evolve (Checkland, 2001a: 86; Checkland and Holwell, 1998).

These considerations lead to viewing SSM as a learning process, or as an enquiry system, as illustrated by Figures 5.9 and 5.10, respectively:

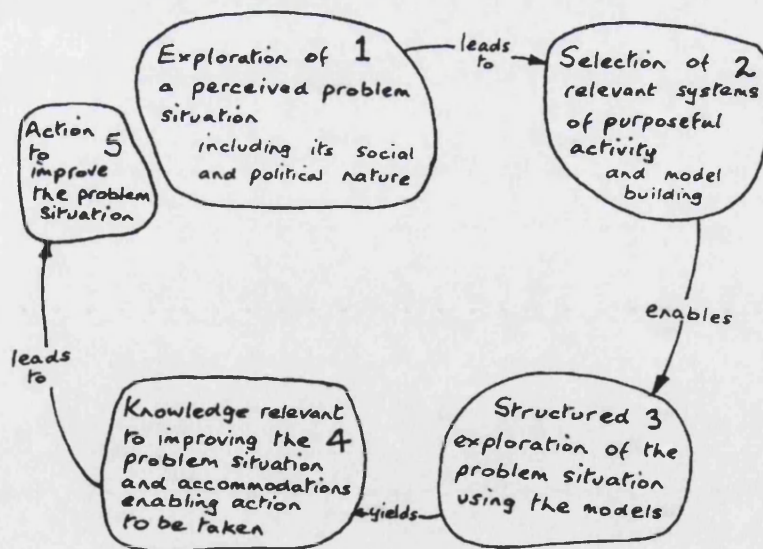


Figure 5.9 – The formalised structure of Soft Systems Methodology as a learning system (Checkland and Holwell, 1998: 160)

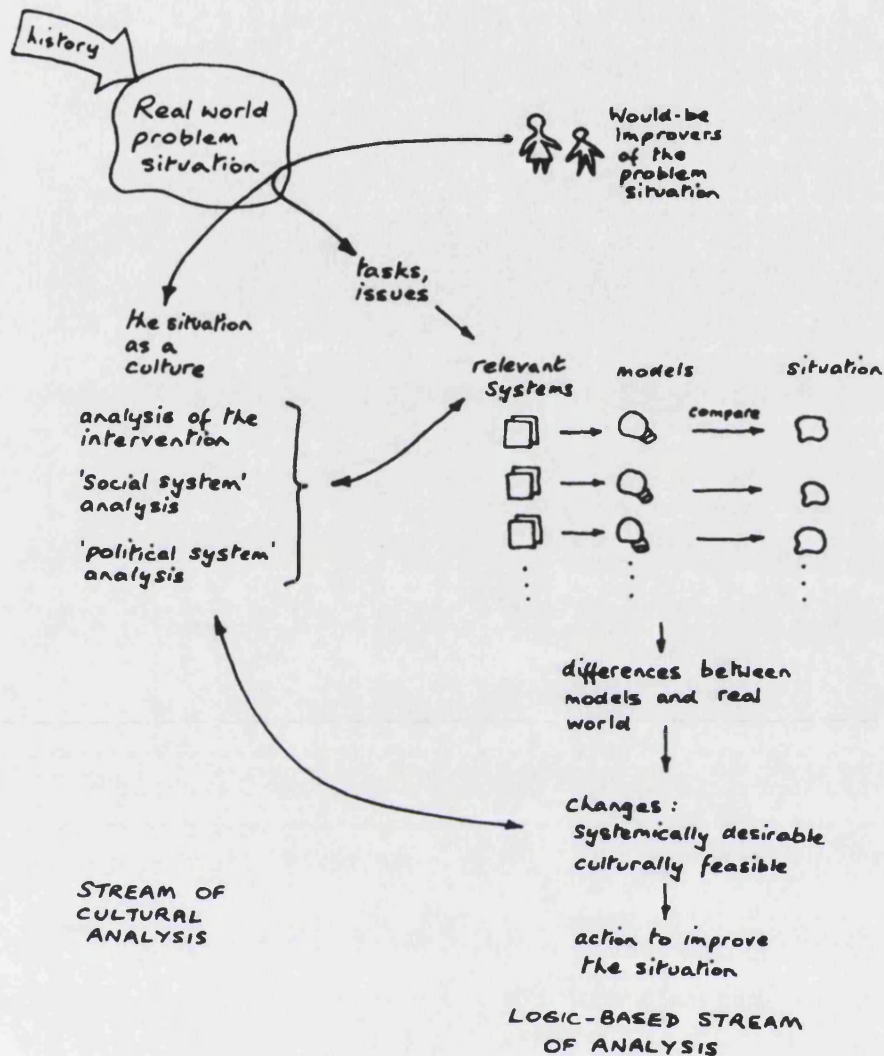


Figure 5.10 – The process of SSM as an inquiring system (Checkland, 1995: 7, from Checkland and Scholes, 1990b: 29)

The five-stage version of SSM featured in Figure 5.9 was a refinement of Checkland's original seven-stage SSM model, which consisted of the following stages:

1. *Problem situation – unstructured* – ascertaining the problem situation by researching the problem area.
2. *Problem situation – expressed* – expressing the problem situation by composing a Rich

Picture,⁷⁴ eliciting as much information as possible.

3. *Root definitions of relevant systems* – defining how the problem situation is being viewed by means of the root definition(s).⁷⁵
4. *Conceptual models*.⁷⁶
5. *Compare stage 4 with stage 2* – comparing the conceptual models with the problem situation/the real world.⁷⁷
6. *Identify feasible and desirable changes*.
7. *Take action to improve the problem situation*.

Stages 1, 2, 5, 6, 7 are in the “real world,” while 3 and 4 are “below the line” systems thinking. The *real-world activities* come before and after the formulation of relevant root definitions and the building of corresponding conceptual models (*systems thinking*). Figure 5.11 illustrates this earlier seven-stage process:

⁷⁴ A “Rich Picture” is not a formal model, although it incorporates different views of the system in order to contribute to a greater understanding of it. The concept of *emergent properties* (the principle that whole entities exhibit properties which are meaningful only when attributed to the whole, not to its parts) is at the heart of Soft Systems thinking (Checkland, 1981: 74-82). “Rich Pictures” can represent relationships “more realistically than linear prose” and can also illustrate both “instrumental and cultural relationships” (Checkland and Holwell, 1998: 161).

⁷⁵ “Root Definitions” describe a stakeholder’s world-view (*Weltanschauung*) and the transformation that the world-view implies when ascertaining the best solution to the situation (Wilson, 1992). An alternative Root Definition approach is considering CATWOE:

- C = Customer – who would be the victim or beneficiary?
- A = Actors – who would do the activities?
- T = Transformation Process – what is the transformation?
- W = *Weltanschauung* – what world view makes this definition meaningful?
- O = Owner – who owns/could stop this activity?
- E = Environmental Constraints – what constraints should the system take as given? (Checkland and Scholes, 1990b).

⁷⁶ Conceptual models are developed to analyse the activities to be carried out by the system (Wilson, 1984). The conceptual model should have the concept of a formal system model, a framework against which the structure of a human activity system can be tested:

- To define a measure of performance against the following criteria:
 - *Efficacy* – will it work?
 - *Efficiency* – will it work with the minimum resources?
 - *Effectiveness* – does it contribute to the enterprise?
 - *Economical* – is it feasible?
 - *Ethical* – is the transformation process morally acceptable?
 - *Elegant* – is it well designed?
- To monitor the activities using the above criteria.
- To take the necessary control actions (Checkland and Scholes, 1990a; 1990b).

⁷⁷ The difference between *thinking* and *being* in SSM is expressed in the form of a dialogue between “systems” views and “real world” views, with the goal of mutual learning and co-operation between different actors (eg. users and systems developers).

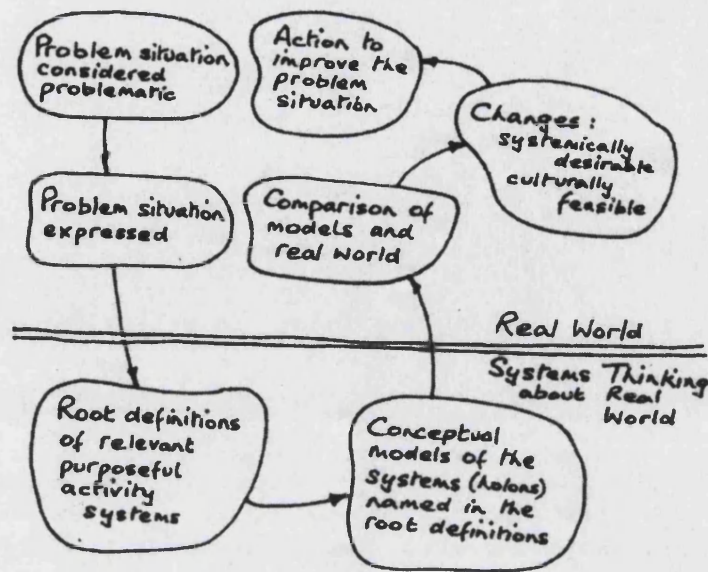


Figure 5.11 – The early account of SSM in seven stages (Checkland and Scholes, 1990b: 27)

As has been described in this chapter's section 5.2, the "real world" is socially constructed. Within this "real world," "participants" negotiate and re-negotiate their perceptions and interpretations with others (Checkland, 1981). Accordingly, the researcher is a participant in that process. The "real world" of Checkland's seven-stage model is therefore a non-conceptualised perception of the problem domain, and "systems thinking" is an epistemological set of principles that enables a richer and more insightful understanding of the domain (Checkland, 1999b). There is a distinction between complex reality and our notations of it (Checkland, 1981). "Hard" systems thinking assumes that the *perceived world* contains holons, while "soft" systems thinking enables the methodology, the *process of enquiry* itself, to be "created" as a holon (Checkland, 1981; 1990a; 1990b).⁷⁸ Consequently, SSM models can be distinguished from conventional systems models, which are descriptive and normative accounts of "systems" assumed to "really" exist in the world. SSM works best "not as a prescription to be followed, but as an explicit framework of guidance for sense making, leading to processes which can be both described and recovered" (Checkland and Holwell, 1998: 169). Checkland suggests that, as researchers gain experience of SSM, they retain the early seven-stage process "not as a prescription"

⁷⁸ SSM holons are not normative or descriptive: they serve as vehicles for exploring the problem situation (Tsouvalis and Checkland, 1996).

but as an “*aide memoire*” (Checkland, 2001a: 70).

We have seen Checkland’s later five-stage refinement of the original seven-stage versions of SSM. His more recent descriptions of SSM, however, further refine the process down to only four main activities (illustrated in Figures 5.12 and 5.13). These stages are:

1. Finding out about a problem situation, including its cultural and political dynamics.
2. Formulating conceptual systems models of an ideal world from the perspective of different stakeholders.
3. Comparing the conceptual models with the real situation, and seeking not only changes that are systemically desirable and culturally feasible, but also accommodations between conflicting interests.
4. Taking action in the situation to bring about improvement (Checkland, 1999a: A15).

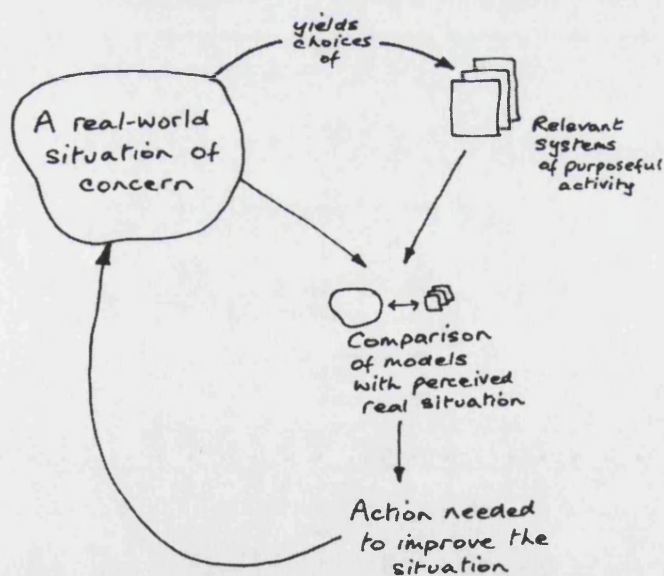


Figure 5.12 – The basic shape of SSM (Checkland and Scholes, 1990: 7)

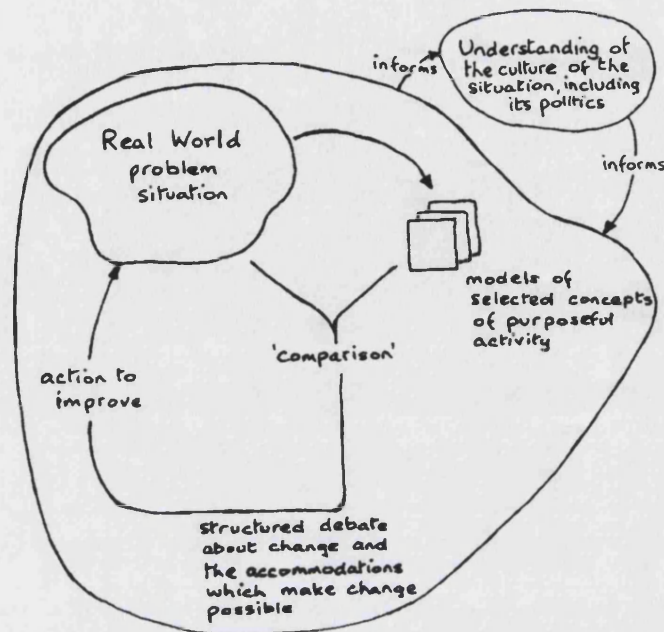


Figure 5.13 – The representation of mature SSM (Checkland, 2001a: 72)

There is no explicit logic of theory construction in SSM. Concerns have arisen in the literature, suggesting that SSM projects, which are iterative and involve different stakeholder groups, can be time-consuming and difficult to manage (Rose, 1997). There have also been criticisms in the literature that the nature of the research intervention is pre-defined in SSM projects (Flood and Jackson, 1991; Romm, 1995). SSM can too easily overlook environmental and structural determinants and questions of power: openness and togetherness are implicit and explicit values of SSM, but they are not typically found in organisations. Researchers cannot therefore assume that all participants will be able to openly discuss problems, perceptions and needs, despite the fact that open, willing and supported discussion is likely to open up organisation culture and to encourage learning and joint problem solving (Rose, 1997).

Another concern is the reduction of the richness of SSM analysis due to linking it with traditional IS methodologies. SSM generates an enormous amount of varied information, particularly concerning different viewpoints and possible activities, much of which has to be suppressed in order to fix on a single agreed activity model (Galliers, 1991c). Each activity may be modelled at a higher level of resolution, with new root definitions specific

to each activity. A conceptual model further defines the set of (more detailed) activities necessary to accomplish it. In this way, complex, iterative situations with many activities can be modelled without losing a sense of the overall shape of the problem. This process is illustrated by Figure 5.14.

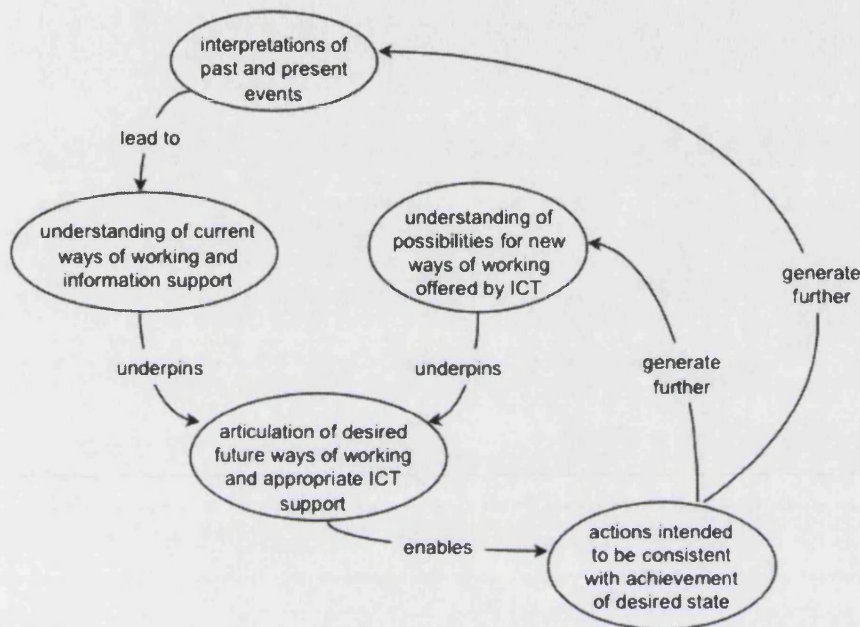


Figure 5.14 – The iterative nature of systems development work expressed as an interaction model (Rose, 2000: 202)

Notwithstanding these challenges, there are a number of significant benefits of conducting SSM research. SSM can alleviate many of the limitations of “hard” IS design methodologies because different stakeholder groups are involved throughout the research process – consequently, they all have a stronger ownership of the resulting system (Mingers, 1995). That SSM acknowledges the viewpoints of all participants and renders their perspectives explicit within root definitions and the conceptual model is of benefit in that it explains differing implicit worldviews. Certainly, the emphasis within SSM on exploring a range of root definitions - and on separating the world of conceptual thinking from that of the “real world” - contributes to the consideration given to alternatives (Mingers, 2001a). Research into the use of SSM in IS development is “vital” and holds out the promise of rich practical and intellectual rewards (Mingers, 1995). Consequently,

the researcher felt confident upon approaching and conducting this research that it would provide a valuable contribution to the literature.

The investigative force of SSM is derived from the epistemological power of a set of system concepts that structures thinking about the world. These concepts derive their investigative power from being appropriate expressions of ways in which the complexity of the world is structured in order to derive meaning from it (Checkland, 1981). The outcome of the SSM research process is knowledge, which may be expressed as theory. The forms of theory generation and testing have tended to be tests and developments of the methodology itself, such as CATWOE cross-referencing to ensure root definition completeness and consistency. This is consistent with Action Research (Checkland and Scholes, 1990b).

SSM does have a defensible ontology, epistemology and reasoning strategy, which may be used not only for theory generation, but also for testing activities of more conventional programmes (Rose, 1997). Rich Pictures are (usually) descriptions of local problem situations and have no explicit theoretical underpinning or modelling logic. It is therefore difficult to find circumstances in which they have the force of theory. SSM models, then, are often too local, transient, and personal to be regarded as middle range theory. Nonetheless, the learning acquired from them may be substantial enough to be represented as theory (Rose, 1997). Systems principles dictate that clear thought must be given not only to the components of the research design, but also to how they are linked, in order that the emergent property is satisfactory. This is often not the case in conventional research programmes. As a result, SSM is “explicit, coherent, and theoretically justifiable” (Rose, 1997: 13). As change is advocated on the basis of learning, SSM use in applied research can amount to a greater emphasis on good use of the modelling tools and comparison, and less emphasis on actions for change. SSM’s modelling techniques are highly rigorous and are founded on explicit theory. Learning from a SSM study can be represented as “middle-range” social science theory, and SSM can be used for testing theory, provided the epistemological approach is appropriate (Rose, 1997).

Because SSM is a methodology, not a method, there is the inherent flexibility allowing

“creative, innovative use” of its principles, specific to a particular situation, and the particular participants and particular users of the methodology. This “fatally undermines” the generalised criticisms made about SSM (Checkland and Holwell, 1998: 171). Although “no two users” use SSM in the same way, this does not result in its “dissolution” because at its core is the idea of making sense of problematical situations by using systems models of purposeful activity (Checkland and Holwell, 1998: 162).

The inherent flexibility of SSM has enabled it to be used extensively in IS development (Stowell, 1995; Mingers, 2001a; Ormerod, 2001). SSM can be comfortably integrated into a research programme containing other methods, and can play the roles of:

- *A problem-structuring tool* – “front-ending” other approaches by lending structure to problems (eg. the result of the study may be a set of research questions to be answered by other means) (Rose, 1997).
- *A good-fit research tool* – a qualitative, activity-based, interpretative, participative, systems-based, methodologically explicit tool appropriate to the research area and objective.
- *A triangulation tool* – findings obtained with another method may be confirmed, disconfirmed, or amplified.
- *A theory testing, extension or generation tool*.⁷⁹
- *A co-ordinative or directive tool* – the research process itself may be conceptualised as a purposeful human activity system. Models may then be built. These may delineate the various research activities and their logical dependencies, which will constitute the research process (Hindle *et al.*, 1995).

The researcher considered the relationship between the SSM component and other components of her research programme in order to ensure that the ontological, epistemological and reasoning strategy approaches were appropriate to the needs of all the major stakeholders involved in this research project.

The next sub-section of this chapter concentrates on Dialogical Action Research, a form

⁷⁹ Theory extension is “the most difficult phase of research in a complex field such as Information Systems” (Galliers, 1991c: 341).

of Action Research consisting of a series of “reflective one-on-one dialogues” between the researcher(s) and the case organisation principal(s). These dialogues played a central role in this research. As such, they will be examined in some detail in the section of this chapter that follows.

5.3.4 Dialogical Action Research

The “reflective” dialogues in Dialogical Action Research (Dialogical AR), which was developed by Martensson and Lee (2004), “periodically” take place away from the case organisation in order to reconcile theory with the organisational context.

For the case organisation principal, the reflective dialogue provides an occasion to:

- Take time to reflect on the organisation’s functioning.
- Discuss and experiment with new ideas with an objective, independent advisor.
- Learn from an outside perspective.

For the researcher, the reflective dialogue provides the opportunity to:

- Learn about the case organisation principal’s situation.
- Learn from an inside perspective.
- Utilise empirical material that extends over a lengthy period and hence enables rich theorising (Martensson and Lee, 2004: 27).

An interface between the researcher’s academic attitude (*theoria*) and the world of the case organisation principal (*praxis*), these dialogues attempt to address *knowledge heterogeneity*, the different forms that knowledge takes in both the world of academia and the world of practice, and *knowledge contextuality*, the dependence of knowledge on its context. Successive dialogues result in the researcher(s) and the case organisation principal(s) coming to a “mutual understanding” of the organisation and its problems.

The dialogues also enable the researcher to listen to the case organisation principal’s interpretation and understanding of the problem requiring action, and enable the researcher to gather facts to which theory can be applied. In Dialogical AR, the case

organisation principal(s) are provided with suggestions to be appropriated into action(s) that have the concomitant goals of remedying a problem situation and of testing or advancing theory. Whether or not the actions are followed through is dependent upon the case organisation principal. However, every intervention that the case organisation principal makes - and that follows from the researcher's theory-based dialogue - provides an opportunity for the researcher to empirically test theory. Interventions that yield organisational results that the researcher's theory does not anticipate provide an opportunity for improving the theory arising from the researcher's and case organisation principal's reflections. Additional interventions can be made until the case organisation principal(s) deems her/his/their problem(s) to be sufficiently addressed. Successful Dialogical AR entails improvements in the real-world problem, in the researcher's knowledge, and in the case organisation principal's knowledge.

In Dialogical AR, the researcher does not directly intervene in the activities of the organisation where a problem is to be solved or a situation is to be improved, and the researcher's theories do not need to be made explicit to the case organisation principal in order to assist remedying the problem situation. Instead, the one-on-one dialogues foster learning for both the researcher and the case organisation principal. In these dialogues, the researcher plays a facilitating role, drawing on one or more relevant theories. The "explicit recognition and handling" of the different roles and perspectives is fundamental to Dialogical AR and, in turn, gives rise to "heterogeneous forms of knowledge" (Martensson and Lee, 2004: 28). "Reflective dialogues" can assist the case organisation principal to "reflect on, learn from and remedy" problems in their organisation, and to facilitate understanding between the researcher and the case organisation principal (Martensson and Lee, 2004: 28).

Martensson and Lee (2004) intend that the dialogue be related to the elements in Baskerville's Action Research Cycle (Figure 5.5). A key feature of Action Research is its reflective and iterative cycle. In Dialogical AR, practitioners appropriate academic theories on their own terms, meaningful in their own world, with the active support of (and in collaboration with) the researcher, who considers the practitioner's need to solve problems to be equal in importance to the researcher's need to move knowledge forward. Dialogical AR recognises knowledge heterogeneity by splitting apart expertise into

separate entities: that of the researcher, and that of the practitioner. This is necessary and useful because expertise does not appear explicitly in Baskerville's Action Research Cycle. The reflective dialogue included in Figure 5.16 illustrates the on-going dialogue between the two knowledge domains of the researcher and of the case organisation principal. This dialogue is a key element in Dialogical AR and can be related to the elements identified in Baskerville's Action Research Cycle. The researcher and the practitioner take various types of action depending on the situation at hand. These actions in turn then lead to new reactions from the real world problem. This stimulus/response pattern is illustrated by the arrows between the Action Research team and the real world problem in Figure 5.15.

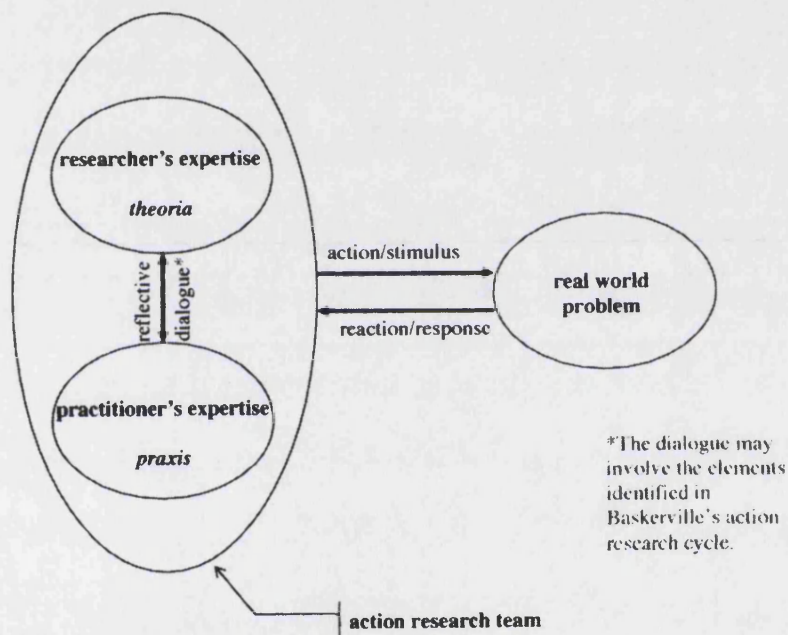


Figure 5.15 – Dialogical Action Research (Martensson and Lee, 2004: 36)

Figure 5.16 emphasises that, over time, there should be an improvement in the expertise of both the researcher and the practitioner. In Baskerville's diagram of the Action Research cycle (Figure 5.5), this improvement is reflected in the word "learning." Consequently, there are three domains for improvements:

- In the researcher's expertise.
- In the case organisation principal's expertise.

- In the real world problem.

Dialogical AR can thereby help to resolve Action Research's "rigor versus relevance" dilemma (Martensson and Lee, 2004), which was discussed in Section 5.3.2 of this chapter.

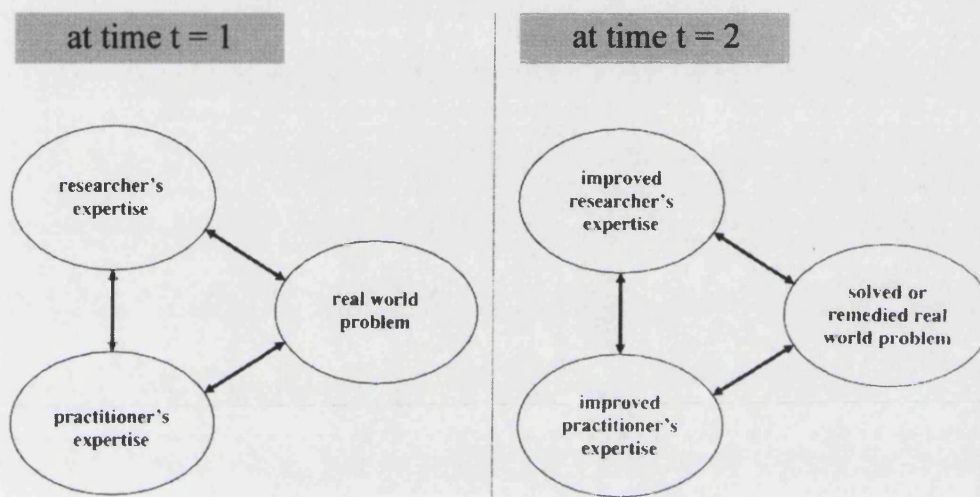


Figure 5.16 – Improvements over time (Martensson and Lee, 2004: 35)

The distinguishing features of Dialogical AR are:

1. Adopting a scientific attitude.
2. Adopting the natural attitude of everyday life.
3. Accepting the role played by social and historical context.
4. Understanding the social and historical context of the researcher and of the practitioner (Martensson and Lee, 2004).

The reflective dialogues intrinsic to Dialogical AR offer a new way of managing the time spent on a research project. As a result, the researcher was able to spend less time involved in each case organisation, which in turn enabled her the opportunity to spend more time in process-oriented research projects. She could thereby be kept updated on

organisational activities through the reflective dialogues with the principals of the case study organisations.

An explanation of Case Study Research follows. It provides fundamental background information on the second Action Research hybrid research method that was utilised in this research, Action Case Research (ACR). A description of and justification for ACR being chosen as a cornerstone methodology of this research project will follow the explanation of its “parent” methodology, Case Study Research.

5.3.5 Case Study Research

Case study research is the most commonly used qualitative method in IS research (Orlikowski and Baroudi, 1991; Alavi and Carlson, 1992). Nevertheless, there is a notable absence of longitudinal case study designs, as well as structured multiple case study designs in the IS literature (Drew, 2002). The IS literature contains many examples, however, of the interpretive case study (Zuboff, 1988; Sauer, 1993; Walsham, 1993; Jones and Nandhakumar, 1993; Knights and Murray, 1994; Brooks, 1997).

Undertaking case study research does not mean that a researcher is limited to a choice of one specific method, or of one methodology (Yin, 1989a; 1989b; 2002; Hamel, 1993).⁸⁰ Rather, Stake (1994) views the case study as a choice of what *object* is to be studied, rather than a choice of *techniques*. Further, Rolland and Herstad (2000) claim that it is more relevant to talk about the case study as an approach to the study of the particular, with a special focus on what is unique and what is common in a given case. An empirical enquiry focused on a particular phenomenon and its relation with its real-life context (Yin, 1994; 2002), the case study can be seen as a research strategy that focuses on “understanding the dynamics present within single settings” (Eisenhardt, 1989: 534), from which arises the difficulty of acquiring similar data from a statistically meaningful number of similar organisations (Galliers, 1991c).

⁸⁰ Case study research can be either positivist, interpretive or critical, depending upon the underlying philosophical assumptions of the researcher. Yin (1981a; 1981b; 1994; 2002) and Benbasat *et al.* (1987) advocate positivist case study research, whereas Walsham (1993) advocates in-depth interpretive case study research. Although qualitative data cannot readily be converted to numerical values, it can be hard-nosed, data-driven, outcome-oriented, and scientific. Similarly, quantitative research can be “soft” and deal with inadequate evidence - these are characteristics of good and bad research, rather than a dichotomy between two types of research (Galliers, 1996: 152).

Galliers (1991c; 1993d), drawing a distinction between positivist case study research (such as Yin, 1981a; 1981b; 1994; 2002) and interpretivist case study research (such as Walsham, 1993), has described much published case study research as being “empirical, scientific research” based on observable facts which are not open to interpretation, and a means of exploring the “relationships” that exist in any given problem situation (Galliers, 1992a: 154).

Case study research normally involves substantial involvement in the research situation over a period of time. The goal of this style of research is “deep familiarity” (Goffman, 1989) with the research situation, resulting in a “thick” description that provides enough detail to allow analysis of the interpretations of the research subject(s). The researcher could not be assumed to be free of her own interpretations, and considerable care was taken to offer analysis in an open and explicit manner, in order to ensure its validity. Walsham (1995), following Eisenhardt (1989), suggests that theory may be involved in interpretive case studies in three different ways:

- As an initial guide to design and data collection.
- As part of an iterative process of data analysis.
- As a final product of the research.

An iterative approach to case study research allows the theoretical position to be developed as data collection and analysis proceed. There may be a problem in generalising from case study research, where depth is substituted for breadth, but Walsham (1995) suggests four possible types of generalisation:

- Concepts may be developed.
- Theory may be generated (as with Orlikowski’s (1992) structural model of technology).
- Specific implications in particular domains of action may be drawn.
- “Rich insight” may arise from less focussed learning.

The case study approach enables the capture of “reality” in detail. It also enables the analysis of “a greater number of variables” than is possible with other approaches (Galliers, 1991c). Case study research is well-suited to IS interpretivist research due to its

focus on organisational (rather than technical) issues (Benbasat *et al.*, 1987; Walsham, 1993; Baskerville, 1997; Pare and Elam, 1997; Darke *et al.*, 1998). Indeed, Benbasat *et al.* (1987) suggest that the following factors support the case study methodology as an appropriate IS research strategy because it:

- Enables researchers to study IS in a natural setting, to learn about technologies, and to generate theories from practice.
- Enables researchers to gain a greater understanding of the nature and complexity of processes in organisations.
- Enables valuable insights to be gained into new areas of investigation.

The case study research approach enables the retention of the “holistic and meaningful characteristics” of real-life events, such as “organisational and managerial processes” (Yin, 1994; 2002). As a case reveals knowledge in its natural context, it can thereby clarify difficult problems or issues, and interpret open-ended and ill-defined aspects of the problem situation(s) (Avison and Fitzgerald, 2003). Case studies are an appropriate research strategy:

- When studying contemporary events in their natural settings.
- When it is not necessary to control behavioural events.
- When researchers have little control over the environment.
- When the context of the research is important (Yin, 1989b; 1994; 2002).

The case study approach emphasises in-depth understanding and qualitative analysis (Walsham, 1993). It is an appropriate research strategy to provide description, to test theory, and to generate theory (Eisenhardt, 1989). The approach is particularly appropriate for studying phenomena that are not supported by a strong theoretical base (Benbasat *et al.* (1987). Table 5.2 explains the process of building theory from case study research.

Step	Activity	Reason
Getting Started	<ul style="list-style-type: none"> • Definition of research question • Possibly <i>a priori</i> constructs. • Neither theory nor hypotheses. 	<ul style="list-style-type: none"> • Focuses efforts. • Provides better grounding of construct measures. • Retains theoretical flexibility.
Selecting Cases	<ul style="list-style-type: none"> • Specified population. • Theoretical, not random, sampling. 	<ul style="list-style-type: none"> • Constrains extraneous variation and sharpens external validity. • Focuses efforts on theoretically useful cases (those that replicate or extend theory by filling conceptual categories).
Crafting Instruments and Protocols	<ul style="list-style-type: none"> • Multiple data collection methods. • Qualitative and quantitative data combined. • Multiple investigators. 	<ul style="list-style-type: none"> • Synergistic view of evidence. • Strengthens grounding of theory by triangulation of evidence. • Fosters divergent perspectives and strengthens grounding.
Entering the Field	<ul style="list-style-type: none"> • Overlapping data collection and analysis, including field notes. • Flexible and opportunistic data collection methods. 	<ul style="list-style-type: none"> • Speeds analyses and reveals helpful adjustments to data collection. • Allows investigators to take advantage of emergent themes and unique case features.
Analysing Data	<ul style="list-style-type: none"> • Within-case analysis. • Cross-case pattern search using divergent techniques. 	<ul style="list-style-type: none"> • Gains familiarity with data and preliminary theory generation. • Forces investigators to look beyond initial impressions and see evidence through multiple lenses.
Shaping Hypotheses	<ul style="list-style-type: none"> • Iterative tabulation of evidence for each construct. • Replication, not sampling, of logic across cases. • Search evidence for “why” behind relationships. 	<ul style="list-style-type: none"> • Sharpens construct definition, validity and measurability. • Confirms, extends and sharpens theory. • Builds internal validity.
Enfolding Literature	<ul style="list-style-type: none"> • Comparison with conflicting literature. • Comparison with similar literature. 	<ul style="list-style-type: none"> • Builds internal validity, raises theoretical level and sharpens construct definitions. • Sharpens generalisability, improves construct definition and raises theoretical level.
Reaching Closure	<ul style="list-style-type: none"> • Theoretical saturation when possible. 	<ul style="list-style-type: none"> • Ends process when marginal improvement becomes small.

Table 5.2 – The process of building theory from Case Study Research (Eisenhardt, 1989: 533)

Theory arising from case study research is likely to have novelty, testability and empirical validity, which emerge from intimate linkage with empirical evidence. The independence of case study research from prior literature or past empirical observation makes the approach well-suited to new research areas, as well as to research areas for which existing theory is or seems inadequate (Eisenhardt, 1989; Yin, 2002). Case studies have been seen as a “fruitful” way of studying a phenomenon before using a more formal and rigorous approach to test existing theory (Rolland and Herstad, 2000). Literature discussing similar findings ties together underlying similarities in phenomena normally not associated with each other. The result is often theory with “stronger internal validity, wider generalisability” and a “higher conceptual level” (Eisenhardt, 1989: 544).

Eisenhardt (1989) also suggests that researchers assess the evidence from each case in order to iterate towards a theory that closely fits the data. This can illuminate insights from the data and yield empirically valid theory. Comparing data from diverse sources can enable “a single, well-defined construct to form” (Eisenhardt, 1989: 542). The cross-comparison of cases also lessens the possibility of the researcher:

- Leaping to conclusions based on limited data.
- Being overly influenced by “elite respondents.”
- Ignoring basic statistical probabilities.
- Dropping disconfirming evidence.
- Reaching premature conclusions (Eisenhardt, 1989: 540).

Stake (1994) categorises case studies into three types:

- *Intrinsic* – when a researcher desires a deeper understanding of a particular case, rather than theory building.
- *Instrumental* – provides insights into an issue or refines existing theory.⁸¹
- *Collective* – an instrumental study extended to several cases.⁸²

⁸¹ There is “no line” distinguishing an intrinsic case study from an instrumental one: rather, they are separated by “a zone of combined purpose” (Stake, 1994; 1995).

⁸² Collective case study research compares and draws general implications and relates variability from the phenomena being studied (Galliers, 1991c; Stake, 1994; 1995).

Yin (1994; 2002) also categorises case studies into three types:

- *Exploratory* – where the collection of data occurs before the theories or specific research questions are formulated.
- *Causal* – explores causal relationships and explanatory theories of phenomena.
- *Descriptive* – requires a theory to guide the collection of data.

The case study research approach has been heavily criticised for a perceived lack of rigor, and for problems of generalisation (Galliers, 1991c; 1992a; Irani *et al.*, 1999; Yin, 1989a; 1989b; 1989b; 2002; Rolland and Herstad, 2000). The weaknesses of the approach are:

- The difficulty of generalising.
- The acquisition of similar data from different cases.
- The lack of control over different variables (Galliers, 1992a; 1992b).
- The (potential) difficulty in distinguishing between cause and effect.
- The different interpretations that can be placed on observations by individual researchers and/or stakeholders (Pettigrew, 1983; Vitalari, 1985).

However, these limitations of the case study research approach can be largely overcome by means of rigorous research design, data generation and analysis (Pettigrew, 1983; Vitalari, 1985).

Some researchers consider the case study method to be inferior to methods based on random statistical samples of a large number of observations (Gummesson, 1991). Whilst it is true that generalisation can arise as the case study approach rarely yields precise descriptive statements about a large population (Babbie, 1989), however, conclusions based on a small number of case studies may be ideal for gaining an understanding of the problem domain, and for building a theoretical model for testing generalisability. Walsham (1993) suggests four ways of making generalisations based on interpretive case studies:

- Concepts development.
- Theory generation.

- Giving specific implications.
- Giving rich insight.

Walsham (1993) has also argued that the validity of generalisations from an individual case or cases depends “not on the representativeness of such cases in a statistical sense” but rather “on the plausibility and cogency of the logical reasoning used in describing the results from the cases, and in drawing conclusions from them” (Walsham, 1993: 15).

Flyvbjerg (1991) is adamant that the following are “misconceptions” about case study research:

- That context-independent knowledge is more valuable than practical knowledge.
- That it is not possible to generalise upon any given single case, and therefore individual case studies cannot contribute to scientific knowledge.
- That any given case study is only useful for generating hypotheses, not for testing them.
- That researcher’s interests, values, and opinions often bias generalisations based on case study research more than with other approaches.
- That case studies are difficult to write up and summarise (Flyvbjerg, 1991: 137-8).

It is difficult to research how technology affects and is affected by social and organisational issues, as the use of IT has “contradictory organisational consequences” (Rolland and Herstad, 2000: 6). It is therefore crucial to examine context in IS research (Rolland and Herstad, 2000; Klein and Myers, 1999). A critical case can enable the researcher to describe particular events within a social and organisational context (such as organisation structures, political conflicts among stakeholders, the history of the organisation, and the existing IT infrastructure) that generate rich insight (Flyvbjerg, 1991). Context can also be, however, “problematic” (Rolland and Herstad, 2000), as the boundaries between the context and the actual phenomenon studied can be somewhat unclear (Yin, 1989a; 1989b).

As research on case studies often highlights contradictory findings both within and across studies (Robey and Boudreau, 1999), a critical case study can generalise based on

descriptive research findings, paradoxes and case-specific contradictions (Walsham, 1995). Critical case research can extend existing theory by yielding rich insights from the case study that falsifies or verifies existing theories, and hidden aspects of a particular problem situation and its genesis may become visible and accessible (Flyvbjerg, 1991; Stake, 1994; Rolland and Herstad, 2000).⁸³ Certainly, this was the experience of the researcher as this project unfolded.

The concept of choosing “critical” cases was raised by Flyvbjerg (1991), who suggested that cases of particular interest and with strategic content in relation to the research questions should be chosen in order to highlight the different aspects of a particular problem situation. Extreme and atypical cases can provide more information and illuminate more aspects of the problem situation (Pettigrew, 1988; Flyvbjerg, 1991; Stake, 1994; Rolland and Herstad, 2000). Extreme and atypical cases also tend to illuminate the inadequacy of theories and methods used, especially when contradictory and paradoxical issues are being investigated.⁸⁴ The comparison of different cases can also generate theory with less researcher bias than theory built from incremental studies, and is likely to be testable, with constructs that can be readily measured and hypotheses that can be proven false (Eisenhardt, 1989).

As far as this doctoral research is concerned, the researcher’s adoption of case studies that enabled the capture of the organisational and social setting proved to be a suitable method for pursuing the research objectives, as there was no need for manipulation or control of subjects or events (Miles and Huberman, 1994). This approach also answered the calls to cater to context in IS research (Avgerou, 2000) and resulted in the researcher being able to follow events over time at sites previously inaccessible to scientific investigation (Cavaye, 1996; Benbasat *et al.*, 1987; Benbasat and Weber, 1996).

Case study research is an appropriate approach for this project, not only because the theory and research are at their early stage of development, but also because the context of actions by the actors involved are critical, in accordance with the findings of Benbasat *et*

⁸³ The IS literature shows that statistical generalisations often do not explain the contradictory effects of IT in organisations, as information systems are embedded in social and cultural structures or a context through its use - not all phenomena can be understood and explained using such techniques. Statistical information can show that X exists, for example, but not why it exists - descriptions from case studies can (help to) explain it.

⁸⁴ For example, surveys as a statistical analysis of data tend to exclude extreme examples.

al. (1987). A sample of critical case organisations were selected for this research based on their contrasting characteristics, and rounds of in-depth interviews were conducted with the case organisation principals. Data from the interviews were analysed and synthesised for patterns of e-business adoption, implementation, and performance, so that different factors from the case organisations could be identified, and propositions could be tested (this process is explained in Chapter 6). The researcher intended that these interpretative case studies would provide generalisations which follows (Walsham, 1995) in order to assist conceptual development, draw specific implications (Walsham and Waema, 1994) and provide valuable insights (Orlikowski, 1991).

Building on this explanation of Case Study Research and the earlier description of Action Research, and presenting a comprehensive justification as to how and why they are appropriate methods for this doctoral study, the next sub-section of the chapter describes the hybrid research methodology that emerged from them, Action Case Research.

5.3.6 Action Case Research

Action Case Research (ACR) is an amalgam of (and compromise between) intervention or change (Action Research) and an interpretation or understanding (“soft” case study), designed to balance the trade-offs between being either an observer capable of making interpretations, or a researcher involved in creating change in practice.

Despite aspirations to objectivity in both positivist and interpretivist approaches, the researcher is nonetheless making an intervention. Braa and Vidgen (1999) argue that case studies are not “pure” interpretations if they contain an element of intervention, and that such research cases can often be better categorised as Action Case Research rather than as case study or as Action Research. The case studies in this research project contained an element of intervention, but not to the scale of change that one might expect in full-scale Action Research. The researcher’s approach can better, therefore, be categorised as Action Case (Braa and Vidgen, 1997). As such, ACR was considered by the researcher to be an ideal methodology to employ.

As has been previously explained (in sub-section 5.3.1), Action Research aims to gain knowledge through deliberately intervening in order to achieve desirable change in the organisational setting. As a consequence, the researcher is both “constrained” and “enabled” by the research context, whilst having the potential to initiate change in that organisational context. Learning from ACR should be a combination of learning about the content of the research and learning about the process of inquiry (Braa and Vidgen, 1999). Beginning with a study of an organisation in focus, ACR continues by analysing the findings and finishes with an intervention stage, such as the implementation of findings from the earlier stages (otherwise known as “understanding for change”). A strong connection between study and analysis is advocated, as it can result in constant refinements in the focus of the field study (Vidgen and Braa, 1997).

It is possible to conduct ACR with a lower level of participation than would be needed for successful Action Research. The ACR method is supplemented by considerations of “suitability” (to the aims of the research project) and “practicability” (the do-ability of the research project). The scope of an ACR investigation can also be restricted in order to achieve a rich context from a small-to-medium-scale intervention, and the timescale can be of short-to-medium-term duration rather than the longer timescales associated with full-scale Action Research (Jonsson, 1991). Negotiating access for small-scale interventions, in combination with the lower levels of resources required from the participating organisation, make ACR more accessible than full-scale Action Research. These benefits, however, can serve to reduce the organisational commitment towards implementing the outcome of the research. Nonetheless, Braa and Vidgen (1999) assert the value of small-scale Action Case interventions focussed on a specific technique or method (such as this doctoral research).

ACR proved to be an ideal choice of methodology. With ACR it is possible to introduce new techniques without collaborating with the organisational participants in the *design* of the technique, as long as there is effective participation in the *testing* of the technique (Braa and Vidgen, 1999). The method is particularly well suited to situations where full-scale Action Research is neither possible nor appropriate. In particular, Braa and Vidgen (1997; 1999) suggest that ACR can be used by new researchers (such as doctoral students) who wish to gain experience of in-context research on a small-scale and structured

intervention, because it takes “particular account” of available resources, such as the skills and experience of the researcher, the time available, and financial constraints, and also because it provides a pragmatic and feasible approach for investigating subjects in-context on a small scale based on deep conceptual understanding (Braa and Vidgen, 1997).

The research characteristics of hard and soft case study research, Action Research, and Action Case Research (along with the likely comparison of outcomes for each) are presented here, in Table 5.3.

		Research Method			
		Hard Case Research	Soft Case Research	Action Research	Action Case Research
Research	Change (intervention)	Unintended	Unintended	Intended, large-scale	Intended, small-to-medium scale
	Prediction (reduction)	Medium	Low	Low	Low
	Understanding (interpretation)	Medium	High	Low to medium	Medium
Research characteristics	Duration	Any	Any	Long	Short to medium
	Time orientation	Contemporary	Historic and contemporary	Building future	Contemporary and building future
	Participation	Low	Low	High	Medium

Table 5.3 – Research method characteristics (adapted from Braa and Vidgen, 1999: 14)

Building on this information, Braa and Vidgen (1999) suggest that the following questions should be considered when undertaking ACR:

Factor	Attribute	Action Case Concern
Suitability	Research design	Has a framework of ideas and a methodology been declared?
	Researcher skills	Does the researcher have the skills and experience to make an intervention?
Interpretation	Richness	Is the context of the research rich enough to provide understanding?
	Focus	Is the research question sufficiently focussed?
Intervention	Scale	Is the scale of the subject for research manageable?

Factor	Attribute	Action Case Concern
	Participation style	What level of participation can be expected from the organisation members?
	Critical impact	Is a critical approach required?

Table 5.4 – Considerations when Embarking on Action Case Research (adapted from Braa and Vidgen, 1999: 22-3)

Vidgen and Braa (1997) advocate clear guidelines for research practices. With ACR, the research design should take particular account of available resources, such as the skills and experience of the researcher, the time available, and financial constraints. The research question should be sufficiently focussed so that the effects of the change can be studied. Lower levels of participation from the organisation can be accommodated than is generally needed for Action Research. Despite these constraints, there will still be an orientation toward building the future through purposeful change (Braa and Vidgen, 1997; 1999; Vidgen and Braa, 1997).

An explanation of SSM, Dialogical Action Research and Action Case Research (the methods of research relevant to and utilised in this project), has been presented, as has Action Research and Case Study Research (the research methods from which they generated). To consolidate this information, and place it in the context of this research project, a further clarification of how and why these methodologies were considered to be appropriate is necessary. To that end, we now move to the next section of this chapter, in which the research methods are aligned with the focus of study.

5.4 ALIGNMENT OF RESEARCH METHODS WITH THE FOCUS OF STUDY

It is important to “clearly label” research approaches, their strengths and weaknesses, and the purposes to which each research approach is put within a study (Galliers, 1984a: 291). Eisenhardt (1989) discusses this issue in the context of organisational research,⁸⁵ and identifies three distinct uses of theory:

⁸⁵ The organisation is “the primary laboratory” for IS research, where the development and use of technology can be studied in context (Ehn *et al.*, 1995).

- As an initial guide to design the research and to collect data (Walsham, 1993).
- As part of an iterative process of data collection and analysis (Orlikowski, 1993).
- As a final product of the research (Orlikowski and Robey, 1991a; 1991b).

The researcher took into consideration the necessity for the alignment amongst the research objectives, the theoretical foundations and the adopted methods of the research (Robey, 1996). She took great care to ensure alignment between the research problem, objectives, philosophical stance, theoretical perspectives and research methods. First, the research problem was identified. The researcher aimed to identify contradictory and paradoxical issues of the subject matter in order to contribute to existing theory and to suggest a “systemically desirable and culturally feasible” way forward. Due to the complicated nature of the problem, she decided to follow the advice of the great number of researchers that support combining research methods. They suggest that a combined research approach increases the robustness of the results (Kaplan and Douchon, 1988; Eisenhardt, 1989; Galliers, 1992d; Gable, 1994; Markus, 1994; Cornford and Smithson, 1996; Braa and Vidgen, 1999; Irani *et al.*, 1999; Mingers, 2001). Her approach was also in line with the advice of Baskerville and Wood-Harper (1996), who argue that theory is more relevant when mixed with practice. The research objective was to also make a contribution to knowledge in these areas. The research problem assumes and acknowledges the social construction of social facts, and the philosophical approach taken was therefore interpretative. This approach is also consistent with the philosophical underpinning of SSM, and Action Research is an appropriate research genre given the research objectives.

Table 5.5 summarises the key features, strengths and weaknesses of the research approaches used by the researcher in this doctoral study.

	Key Features	Strengths	Weaknesses
Multi-Methodologies	The selection and use of multiple data collection methods by combining a range of methods and/or parts of methodologies in order to meet the needs of a particular situation.	May well produce a richer picture for seeing and understanding the complex web of relationships and interconnectivities.	Opposing positions in each dichotomy can represent alternative competing “truths” about the world, and can therefore resist synthesis. The perceptions of the IS community

	Key Features	Strengths	Weaknesses
			itself are a barrier to combining methodologies.
Action Research	Applied research where there is an attempt to obtain results of practical value to groups with whom the researcher is allied, while at the same time adding to theoretical knowledge.	Practical as well as theoretical outcomes most often aimed at emancipatory outcomes. Biases of researcher made known.	Similar to case study research, but additionally places a considerable responsibility on the researcher when objectives are at odds with other groupings. The ethics of the particular research is a key issue.
Dialogical Action Research	A form of Action Research consisting of a series of reflective one-on-one dialogues between a case organisation principal and a researcher/researchers.	The researcher(s) and the case organisation principal(s) come to a “mutual understanding” of the organisation and its problems. The “explicit recognition and handling” of the different roles and perspectives is fundamental to Dialogical AR. As less time is spent directly involved in the organisation, the researcher can spend more time in process-oriented research projects.	Whether or not the suggested actions are followed through depends entirely upon the case organisation principal.
Case Study Research	An attempt at describing the relationships that exist in reality, usually within a single organisation or organisational grouping.	Capturing “reality” in greater detail and analysing more variables than is possible using any of the other approaches.	Restricted to a single event/organisation. Difficulty in generalising, given the problems of acquiring similar data from a statistically meaningful number of cases. Lack of control of variables. Different interpretations of events by individual researchers/stakeholders.
Action Case Research	An amalgam between intervention and	A strong connection between study and	Organisational commitment towards

	Key Features	Strengths	Weaknesses
	interpretation. Case studies contain an element of intervention, but not to the scale of change in full-scale Action Research.	analysis is advocated, as it can result in constant corrections in the focus of the field study. Requires a lower level of participation than is needed for Action Research. The scope of an ACR investigation can be restricted to a small-to-medium scale intervention, and the timescale can be shorter than with full-scale Action Research. New techniques can be introduced without collaborating with the organisational participants in the design of the technique.	implementing the outcome of the research can be reduced by the lower level of interaction by the researcher.
Soft Systems Methodology	Research applied with the goal of learning about complex, problematical human situations through making deliberate interventions in order to achieve positive and desirable change whilst simultaneously adding to theoretical knowledge.	Can be tailored to fit both the situation and the style of the researcher. SSM can alleviate many of the limitations of “hard” IS design methodologies because different stakeholder groups are involved throughout the research process. Consideration is given to alternatives. Promises rich practical and intellectual rewards.	SSM projects can be time-consuming and difficult to manage. The nature of the research intervention can be pre-defined. Can too easily overlook environmental and structural determinants and questions of power.

Table 5.5 – A summary of the key features, strengths and weaknesses of the chosen Information Systems research approaches (adapted and extended from Galliers, 1991c: 337)

The seven UK case organisations featured in this research were each examined in a series of interviews with their case organisation principals.⁸⁶ These interviews utilised the distinctive combination of ACR and Dialogical AR. The subsequent aspects of the research (that of reconciling the disparate worlds of SMEs, e-business and government policies) utilised SSM. As SSM has not often been used in SME situations, and given that this research concentrates on aligning asynchronous areas, and as SME owner/managers would also (seem to be) oblivious to policy initiatives, the researcher faced the challenge of how to build and then marry a research framework with a utilitarian approach that could draw together these anachronous worlds and indicate a way of pursuing a dialogue meaningful to all involved parties.

The investigative focus of the research, which was defined by the research questions, in conjunction with the adopted process definition and the guidelines for conducting research associated with knowledge creation processes, dictated the researcher's assumptions and their development, both philosophical and methodological, that underpin the research. The researcher employed the techniques of Action Case Research and Dialogical AR as the basis upon which to conduct fieldwork activities. To support this decision, the hybrid approach of Action Case Research and Dialogical AR was selected as the theoretical framework to support the data collection techniques. Action Research and case study research, from which Action Case Research and Dialogical AR generate, support the evolution of the philosophical and disciplinary divides of the research and gave precedence to the empirical over and above theoretical delineations. This formed an interesting basis upon which to organise and carry out data collection, and led to the achievement of great insight into the operations of the case organisations. Fieldwork activities were organised around the relationships and associations that these SMEs formed with e-business. Data collection itself incorporated a range of fieldwork activities, from semi-structured interviews to periods of observation conducted at each field site. Documents, texts and transcripts were collected at all field sites simultaneously over a two-year period. These documents formed the basis of data analysis, where concepts and themes were developed from the raw case study materials. For data analysis

⁸⁶ The views expressed by the case organisation principals are those of a single individual from each of the case organisations – only those owner/managers interested in the study were likely to participate in such a study (Sohal and Ng, 1998). Reliance on the perceptions of one key informant from each of the case companies, who was the instigator of e-business adoption, may imply cognitive biases. Raymond (2001), however, demonstrated that this methodology can draw valid conclusions.

purposes, techniques were adapted from the SSM conceptual modelling process. The justification for the selection of the theoretical basis for these concepts has been set out in this chapter, in preparation for the description of their development in relation to the fieldwork data and analysis procedures in the next.

The researcher examined a number of alternative theoretical and methodological approaches before deciding on her chosen research path. These approaches (which included Structuration Theory, Resource-Based Theory, Actor Network Theory and Multiview) are described in Appendix M.

5.5 SUMMARY

This chapter has outlined the methodological framework for the research, justified the decision of the researcher to embark upon this course, and aligned the research methods with the focus of study. Finding a framework capable of supporting the research aims was a decisive factor in the researcher's understanding to what extent – and how – her research priorities could be addressed. The bottom line was that it was necessary to understand and present the adoption and implementation of e-business by SMEs, and to ascertain the practical impact of relevant policies, based on the experiences of the seven UK SME case organisations and within a “flow of events.” Having made her pre-fieldwork research influences and research framework explicit, it was also necessary for her to take into account the criticisms of interpretive research. To that end, a comprehensive overview of the issues and concerns pertinent to IS researchers was provided (in Section 5.3.1), and a clear justification of the reasons behind the choice of methodology has been provided.

The role of theory in the development of the thesis has been articulated. Direct links between the theory and the methodological work have been created. A clear justification of the choice of methodology has been provided. In the coming chapter, how the empirical data is linked with this theoretical framework derived from the literature will be clearly illustrated. Particular attention will be paid to the development of and rationale for: the research questions, the literature review and the empirical work.

Having detailed both the benefits and challenges of adopting multi-methodologies, the researcher's approach, the distinctive mix of research methodologies chosen for addressing this research agenda was articulated (in Section 5.3) – ACR and Dialogical AR methods provided the focus for the research on the seven case organisations, while SSM conceptual modelling examined how to resolve policy development with SME needs. ACR, Dialogical AR and SSM all generated from Action Research, which was described in section 5.3.2 of this chapter.

ACR, an amalgam of, and compromise between, intervention or change (Action Research) and interpretation or understanding (soft case study) was shown (in section 5.3.6 of this chapter) as providing a pragmatic and feasible approach for investigating subjects “in-context” on a small scale based on deep conceptual understanding. ACR was also shown as an appropriate means of adapting SSM's Action Research so that it can become useful as a realistic research strategy (Vidgen and Braa, 1997). For these reasons, they were embraced and utilised by the researcher.

Dialogical AR was explained (in section 5.3.4) as a hybrid form of Action Research (proposed by Martensson and Lee, 2004) that requires “reflective one-on-one dialogues” between a case organisation principal and the researcher to take place “periodically” in a setting removed from the case organisation, in order to reconcile theory with the organisational context. As such, it was considered by the researcher to be an ideal selection for this study.

SSM (described in 5.3.3 of this chapter) provided an “explicit, organised and defensible” means of reconciling different perspectives in a way that is appropriate to all parties involved (Wilson, 2001), culminating in the construction of a “rich picture” of the problem situation (Checkland and Scholes, 1990a; 1990b; Wilson, 2001).

A justification for the choice of combination of these research methodologies, as well as a presentation of their pros and cons, have been comprehensively laid out by the researcher in this chapter. Good research is affected not by strong methodology alone, but by its “conscientious, intelligent and self-reflective application” (Rose, 1997: 14). To that end, this chapter marks the end of the first half of the thesis. In the next, the research

procedures, along with the data collection and data analysis techniques, are described in detail. A description of the genesis and development of not only the research questions, but also the selection of the case organisations will be provided, in order to map out the researcher's intellectual journey.

The following chapter will develop the relevant theoretical concerns presented here in order to transform them into the detail of practical research design – the collection and analysis of valid empirical data. The next chapter also explains the development of the research questions, the selection of the field sites, and the techniques developed for contending with the shifting form of the research domain. The development of the research – the “story” as it were – is thereby explicated.

Supplementary information referred to in this chapter is located in the following appendices:

- Appendix M – Alternative Theoretical and Methodological Approaches
- Appendix N – Socially Constructed Reality

Chapter 6

Research Procedures

6.1 INTRODUCTION

“The personality traits, experience, knowledge, and interests of the researcher will all affect what is noticed and what is taken to be significant”

(Checkland, 2001a: 73).

The literature review, which was presented in Chapters 2-4, identified the research “problem situation.” The research objective, as described and defined in the chapter previous to this one, was to make a methodological contribution to IS in the area of this research. The researcher wanted to identify contradictory and paradoxical issues in order to contribute to existing theory and to illustrate the inadequacies of the relevant EU and UK government policies and initiatives in order that more appropriate initiatives might be created in the future. The research methodology, and its tangible expression in the research procedures, responded directly to her goal. Her philosophical approach was interpretive – the research problem, as she defined it, assumes and acknowledges the social construction of social facts – an approach that is consistent with the philosophical underpinning of the interpretive research methods she adopted: Dialogical AR, Action Case Research and SSM. The over-riding research approach from which these three methods arose is Action Research, which was described (in the previous chapter) as a pragmatic activity principally concerned with taking action in a problem situation in order to change it.

That chapter also explained why this distinctive combination of research methodologies was chosen for addressing the research agenda: with ACR and Dialogical AR providing the focus for the research on the seven case organisations, and SSM conceptual modelling exploring a potential resolution of policy development with SME needs. ACR was shown to be a feasible and pragmatic means of “in-context” research conducted on a small-scale

and based on deep conceptual understanding. ACR was also shown to be an appropriate means of adapting SSM's Action Research into a realistic and worthwhile research strategy. Dialogical AR was explained in the previous chapter as a hybrid form of Action Research requiring periodic "reflective one-on-one dialogues" between the case organisation principals and the researcher in order to reconcile theory with the organisational experience. SSM was shown there to provide an "explicit, organised and defensible" means of reconciling the different perspectives of the research problem situation in a way that is appropriate to all involved parties, culminating in the construction of a "rich picture" (Wilson, 2001). The researcher further explained, following Rose's (1997) argument, that good research is characterised not by strong methodology alone, but also by its "conscientious, intelligent and self-reflective application."

Consequently, *this* chapter describes in detail the data collection and the data analysis techniques – the research procedures – employed in the course of conducting this research. A description of the genesis and development of the research questions is provided. The rationale underlying the selection of the case organisations and a description of the level of access attained at each is outlined. Developing the relevant theoretical concerns introduced earlier (in the process transforming them into the detail of practical research design), this chapter builds on the previous description of the theoretical framework that informed and supported the research's data collection and analysis.

Putting in place a framework capable of supporting the researcher's goals was a decisive factor in understanding to what extent her research priorities could reasonably be addressed. In defining the problem area, she took both the adoption and implementation of e-business by SMEs (which can be referred to as Information Systems Development, or ISD) and the practical impact of policy initiatives produced to motivate this adoption and implementation to occur, to be pragmatic action-based activities (which are also social processes). The theoretical approach of social construction by SSM is pragmatic, in that the emphasis is placed on the rigorous solving of complex practical management problems. As the previous chapter made clear, by using SSM to guide the research analysis, Action Research provides a framework that is not only pragmatically workable, but also enables a sophisticated understanding of social construction.

The research was conducted in three phases: the first stage examined the essential practical background of UK SMEs, e-business and related policy initiatives; the second stage examined to what extent there is a dialogue between these three disparate worlds utilising Dialogical AR and Action Case Research in collaboration with the case organisations; and the third stage attempts to reconcile these worlds by utilising SSM conceptual modelling. To some extent, the first and second stages of the research overlapped.

Chapters 2-4 (which form the literature review) explain how, despite the considerable EU and UK resources allocated to formulate policies and initiatives to promote and enable the adoption and implementation of e-business by SMEs, relatively few policies and initiatives are visible, let alone coherent, relevant and/or accessible to SMEs. The researcher presents the case for a more collaborative and meaningful dialogue between SMEs and policy makers to take place. The issues arising from these chapters were summarised in tables at the end of each of these three chapters: Table 2.3 – The Key Issues Arising from the SMEs Literature Review, Table 3.1 – The Key Issues Arising from the e-Business Literature Review, and Table 4.4 – The Key Issues Arising from the Policy Initiatives Literature Review. Table 5.1 (in the introduction of the previous chapter) drew these issues together. Figure 6.1 presented below, builds on this synthesis with a summary of how these issues will be investigated:

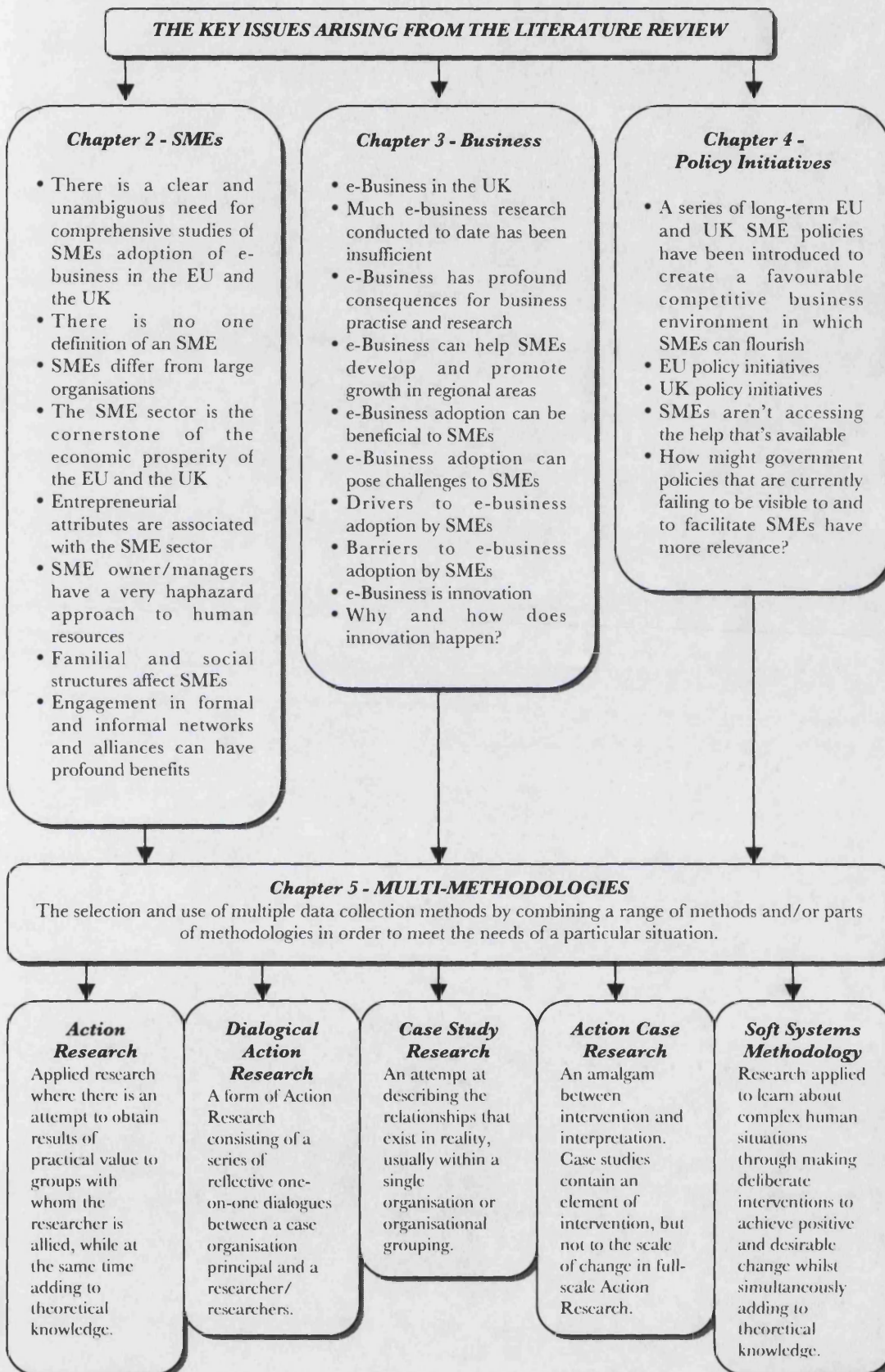


Figure 6.1 – The research thus far

One of the challenges of conducting a multi-faceted research project such as this one, which simultaneously examines the adoption and implementation of e-business by SMEs whilst ascertaining the relevant extant government policies, was that for a substantial part of the fieldwork period (10/2000 – 2/2003), the final form that both the technologies and policies would take were uncertain. Conducting rigorous research in such conditions raised some distinctive considerations. A substantial part of the study's preliminary investigations, for example, involved learning about the different types of technologies whilst seeking out specific information about government policy initiative capabilities and ascertaining how – and to what extent – the SME case organisation principals were aware of these capabilities. Hence, for a time, it was unclear whether making contact with the relevant policy makers would involve conducting fieldwork with private sector partners or with government organisations. These considerations had unknown implications for the initial research direction. In light of the debates explained in Chapters 2-4, the researcher decided not to wait until these conditions had stabilised, but instead placed them at the core of the research design.

Tracking seven case organisations over the course of these dynamic events required the researcher to make a commitment to longitudinal research. She felt that she needed to take a flexible approach – as opposed to a purely pedagogic perspective – on the shifting form of the research domain. In fact, her definition of the scope of empirical research delineated the research domain: it became in essence a frame, in and out of which the e-business technologies could (be seen to) pass before the individual case study organisations were finally fixed on. The use of this placeholder enabled the researcher to remain flexible enough to follow policy and technology trends without allying fieldwork to a specific development. The dynamic aspects of the research domain and emergent trends in the conceptualisation of the issues and circumstances that emerged could therefore – and thereby – be encompassed within the research.

The selection of the theoretical framework(s) for data collection and analysis was a crucial part of the preliminary research activities: the theoretical framework needed to support the depiction of such dynamic events and their role in shaping both the adoption and

implementation of e-business and the government policies designed to promote and support them. It was also important that the framework(s) could account for the implications of emergent technologies that could (possibly) be re-conceptualised, re-named and re-constituted over the course of the fieldwork period. In light of these concerns, the theoretical framework was selected to support data collection. It was also intentional that the data and case study materials were separated from the analysis as far as possible in the writing, in order that the researcher could (attempt to) judge the validity of the analysis and conclusions. The research was overt and conducted with the encouragement of the case organisations concerned. The end product of the research process can be characterised as proffering specific implications in a particular domain. Whilst the theoretical foundations of the research have been explained in detail, the outcome, or resolution, of these concepts cannot be fully developed until after the fieldwork data are presented. Therefore, further elaboration must necessarily be deferred until the analysis of fieldwork data is put forth (in the two concluding chapters of the thesis, Chapters 9 and 10).

The fieldwork designs (arising from, but operating in conjunction with, the research methodology and its integral and concomitant theoretical framework and concerns), held distinct, practical implications for data collection, which took place at all field sites/case organisations simultaneously over a significant period of time. The researcher opted to take a participant observer role for a fixed period at all case study organisations in order to view the networks and processes through which these businesses adopted and implemented e-business. In order to capture an unformatted sense of “dynamic events,” she made a point of attending events and meetings associated with the case organisations’ e-business integration. She also conducted (a number of) semi-structured interviews with the case organisation principals and other key members of staff. The outcomes of many of these activities were fieldwork notes and reflections. Collecting multiple fieldwork data types allowed the researcher to capture a variety of standpoints, which could then form part of her analysis.

The researcher’s “journey” is thereby recounted, if not explicitly discussed, in this chapter, which is divided into six sections. The next section shows how the researcher’s goals, interwoven as they were with the development of the researcher’s core theoretical

concepts, resulted in the emergence of the research questions. The details of data collection and analysis activities are described in the third section of the chapter. An overview of the research procedures is provided, and the general principles of the use of theoretical frameworks are set out in relation to the data collection and data analysis strategy. The implications of the key philosophical ideas are then considered in some depth. Building on this, the fourth section of the chapter presents the selection criteria of the case organisations, and provides an outline of how the researcher negotiated and obtained access to the case organisations. The establishment of communication channels with case organisation actors is explained. Section five reflects on the skills and role of the researcher in relation to the research design. The chapter concludes with a summary of its contents, in preparation for and leading into the presentation of the research into the case organisations, which is presented in the two chapters that follow.

Thus, we turn now to focus on the development of the research questions, which proved to be a fundamental aspect of the research design process.

6.2 DEVELOPMENT OF THE RESEARCH QUESTIONS

The researcher aimed to capture and describe the emergent activities that characterised the research area she had mapped out. The iterative relationship between the primary and secondary literature in the topic area, in combination with preliminary research activities, highlighted the significance of claims to transformation with respect to SME adoption and implementation of e-business, and also to the relevant EU and UK policies. As has been explained, these claims underlaid the research climate and thereby played a role in shaping the fieldwork design. Given this distinctive climate, the researcher's chosen qualitative/interpretive longitudinal approach afforded her access and flexibility as the basic framework for research. Taking into account the debates surrounding studies of e-business technologies/innovation, she chose to focus her research on the relevant "everyday" activities in the case organisations as the primary means of capturing emergent or dynamic activity. Since the primary and secondary literature showed evidence of a significant disparity of e-business adoption and implementation across SMEs, a cross-case comparison was considered (by the researcher) to be likely to afford a greater generalisability of results. This view is supported by a number of researchers

(Flyvbjerg, 1991; Lee, 2001; Lee and Runge, 2001; Pettigrew, 1988; Rolland and Herstad, 2000; Stake, 1994; Walsham, 1995; Yin, 1989b; 1994; 2002).

The researcher formulated a preliminary research question to guide the initial research activities, which included the exploration of the literature and the identification of suitable case study organisations. This research question was formulated during the preliminary research, when it was not clear which case organisations would form the basis of the study and what level of access would be agreed. Case study selection therefore took place simultaneously with the early research activities. This initial question was: “how can government policies and initiatives motivate UK SMEs to adopt and implement e-business?” The purpose of the question was to draw claims to transformation and empirically based descriptions into the same frame of analysis. In answering this question, the researcher’s intention was not to create a taxonomy – or list – of available e-business technologies. Rather, it was to draw attention to the disjuncture between claims being made about the success of government policies, and the reality that during the research period:

- There were few examples of policies in use that were suggestive of the scale of transformation that had been mooted.
- The organisational and contractual arrangements supporting the development of e-business by SMEs were conditioned by market activities, and were therefore extremely volatile and subject to change.

The researcher intended, whilst highlighting this disjuncture, to focus her fieldwork activities around the adoption and implementation of e-business in the case organisations. Responding to the shifting domain as the research progressed, the core focus was transferred to the second research question: “in the case of UK SMEs, how and why is e-business adoption and implementation taking place?” The concept of “implementation” is developed along specific lines in this research, to denote the means by which a technology is brought over the organisational boundary, as well as those activities surrounding the involvement of that technology in existing systems and work practices. As opposed to “technology diffusion,” which focuses on the processes behind why particular organisations or sectors adopt one form of technology over another, “implementation” is

framed from the standpoint of organisational integration. From this perspective, the idea of a technology can be circulated well before any definitive examples of that technology have been encountered by an organisation or by its intended users. This perspective highlights the difficulties involved in understanding in advance the implications of incorporating new technologies – such as e-business – into existing infrastructural and organisational practice. Rather than marginalise these aspects of the unknown or unsettled aspects of the research scenario, this second research question sought to draw these issues into the heart of data collection and analysis.

It was a significant aspect of the research fieldwork design that this second research question was constructed as an open question, so that it would not be rendered redundant or irrelevant by a particular turn of events or technological development. Answers to the question were inevitably going to be driven by dynamic events at the case study organisations, and so it was important that it could address emerging issues unimpeded by reference to a specific technology or organisational context. On a purely practical level, it was helpful that the question was simple, in order that it could be easily called to mind over the course of longitudinal research taking place across the seven case organisations simultaneously.

The third research question was devised in order to capture the significant events surrounding the practical impact on SMEs by government policies and initiatives so that they could become more appurtenant. Where the second core/primary research question called forth descriptions of the conditions and arrangements through which SMEs adopt and implement e-business, this third core, or primary, research question asked: “what are the debates, activities and concerns arising from UK SME adoption and implementation of e-business, and what do these debates suggest about EU and UK policy initiatives?”

Table 6.1 summarises the three research questions, and outlines their intended purposes:

Research Questions	Intended Purpose(s) of Question
<i>How can government policies and initiatives motivate UK SMEs to adopt and implement e-business?</i>	<ul style="list-style-type: none"> • Preliminary core research question • Used to guide initial research activities • Aimed to draw claims to transformation and empirically-based descriptions into the same frame of analysis • Aimed to draw attention to the disjuncture between claims

Research Questions	Intended Purpose(s) of Question
	<p>being made about the success of SME-directed government policies and the reality</p> <ul style="list-style-type: none"> • Called forth descriptions of the conditions and arrangements through which SMEs adopt and implement e-business
<i>In the case of UK SMEs, how and why is e-business adoption and implementation taking place?</i>	<ul style="list-style-type: none"> • Used to focus fieldwork activities in the case organisations • Sought to draw into the heart of data collection and analysis the issues related to understanding in advance the implications of incorporating new technologies into existing infrastructural and organisational practice • Intentionally structured as an open question so that it remained relevant in the light of technological/ event changes, unimpeded by reference to a specific technology or organisational context • Intentionally simple, in order that it could be easily called to mind over the course of research taking place at the seven case organisations simultaneously • Called forth descriptions of the conditions and arrangements through which SMEs adopt and implement e-business
<i>What are the debates, activities and concerns arising from UK SME adoption and implementation of e-business, and what do these debates suggest about EU and UK policy initiatives?</i>	<ul style="list-style-type: none"> • Devised to capture the significant events surrounding the practical impact on SMEs by government policies and initiatives

Table 6.1 – The purpose of the research questions

Figure 6.2 illustrates the “journey” from one research question to the next, indicating the rationale behind the developments in the researcher’s thinking pertaining to the research questions.

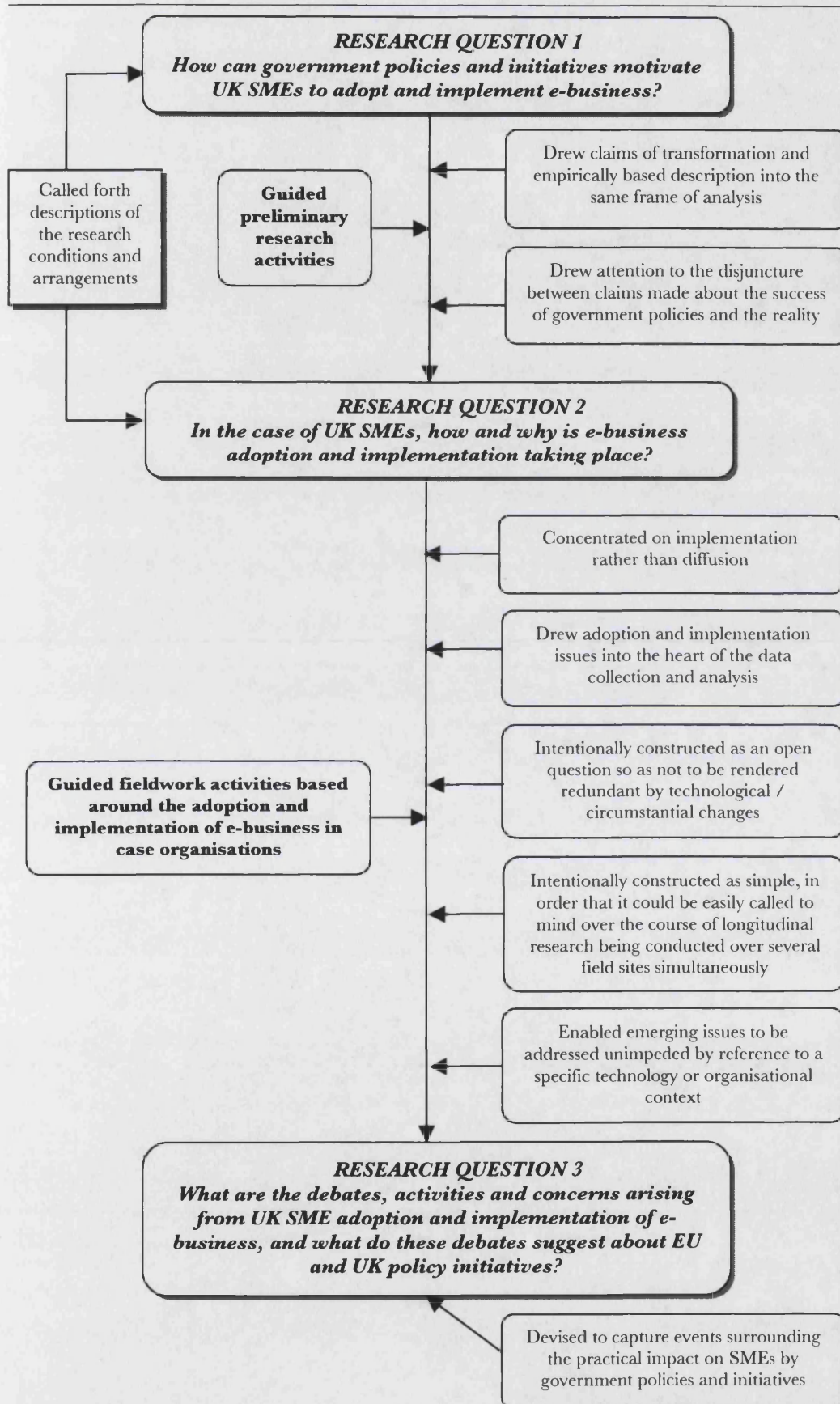


Figure 6.2 – The development of the research questions

Having presented the research questions, and explained their evolution, the next section of this chapter builds on the information presented here, and discusses the inter-relationship between the research questions, as they have been explained, and the research procedures.

6.3 RESEARCH PROCEDURES

An important part of the research process was achieving a balance between distance and engagement: engagement promotes understanding but can lead to bias and over-subjective interpretation, while distance helps with achieving defensible understandings, but can lead to superficiality (Nandhakumar and Jones, 1997). The researcher engaged with both the research situation and the theory, achieving balance by conducting a series of long analytical conversations with the case organisation principals. She assumed throughout that all her analytical insights into the research situation were provisional and in need of validation. The initial data collection was followed by analysis, which led to the generation of insights. A further round of data collection targeted at those insights, in addition to ongoing analysis, took place. The insights generated from this round of analysis were discussed with the case organisation principals for validation. Figure 6.3 illustrates this process.

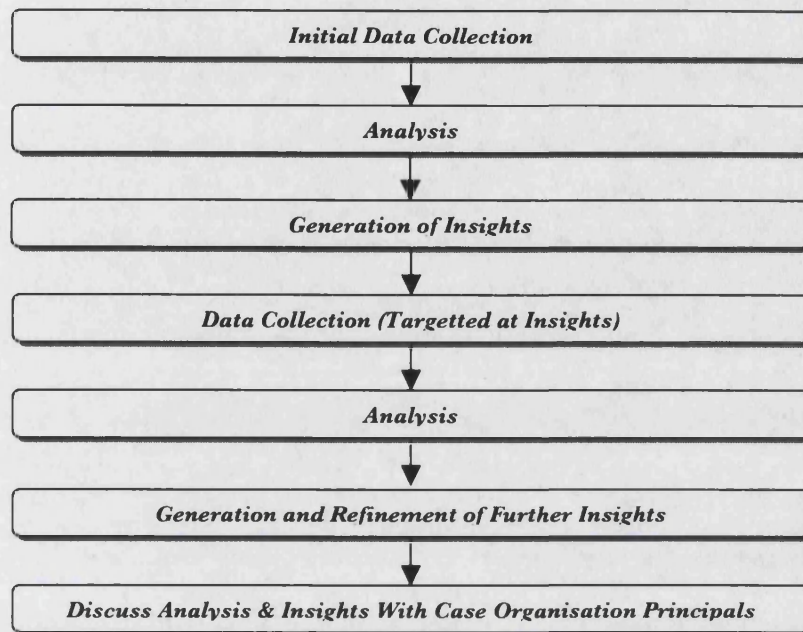


Figure 6.3 – The process of generating insights from the data analysis

In accordance with Yin's (1994; 2002) suggestions, the procedures for collection of the data for this research were based on the following three principles:

- The use of multiple sources of evidence.
- The creation of a case study database.
- The maintenance of a chain of evidence.

These principles, along with the adoption of an organised research protocol, contributed to the reduction of common qualitative research biases, which include:

- The holistic fallacy - the interpretation of events as more patterned and congruent than they really are.
- The elite bias - the overweighting of data from articulate, well-informed and high-status informants.
- "Going native" (Miles and Huberman, 1984; Klein and Myers, 1999).

Furthermore, the research – and, consequently, the data collection – was overt in character (Burgess, 1984; Walsham, 1995; Silverman, 1997): the researcher, even in informal discussions, revealed to each of the case organisation principals her academic goal and her need for access to the organisation for that purpose.

A feature of all stages of the fieldwork data collection for this research project was extensive participation with the case organisation principals. The interpretative hybrid approach of Action Case Research and Dialogical AR analysis was combined with SSM conceptual modelling. The involvement with the case study organisations was conducted as follows:

- The data collection stage concentrated on making sense of the “problem situation.” Background research techniques included interviewing the case organisation principals and studying documents relevant to their organisations. Analysis techniques incorporating SSM conceptual modelling and rich pictures culminated in a (preliminary) formal written document for each organisation, which was discussed and revised with the case organisation principals.
- The data analysis stage of the research concentrated on scenario building and change planning. Conceptual modelling was used to synthesise the data and to develop a way forward for all involved. The case organisation principals were involved in discussing and refining the models with the researcher, who would then refine them accordingly.

As described in Chapter 1.5, the research unfolded in the following way:

- A review of the IS literature was conducted and the course of the initial research was “plotted.”
 - The interview questions and protocol for the pilot study were prepared.
 - A detailed pilot case study (on Berkeley Square Gallery) was conducted in order to identify and consolidate the research question(s) and direction.
 - The pilot study was evaluated.
 - Initial conclusions were drawn.
-

- Data were collected, collated, described, analysed and reported on EU and UK policy initiatives.
- A subsequent exploratory/explanatory cross-case analysis involving the seven case organisation principals was undertaken.
- Drawing on the findings of the case organisations and on the Galliers *et al.* (1981) soft systems study, the research models were developed.
- The process was recorded.
- The findings were analysed and summarised.
- Implications of the research were presented.
- Future directions for research are suggested.

Figure 6.4 illustrates these stages of this “journey,” showing the progression from one part of the research to the next.

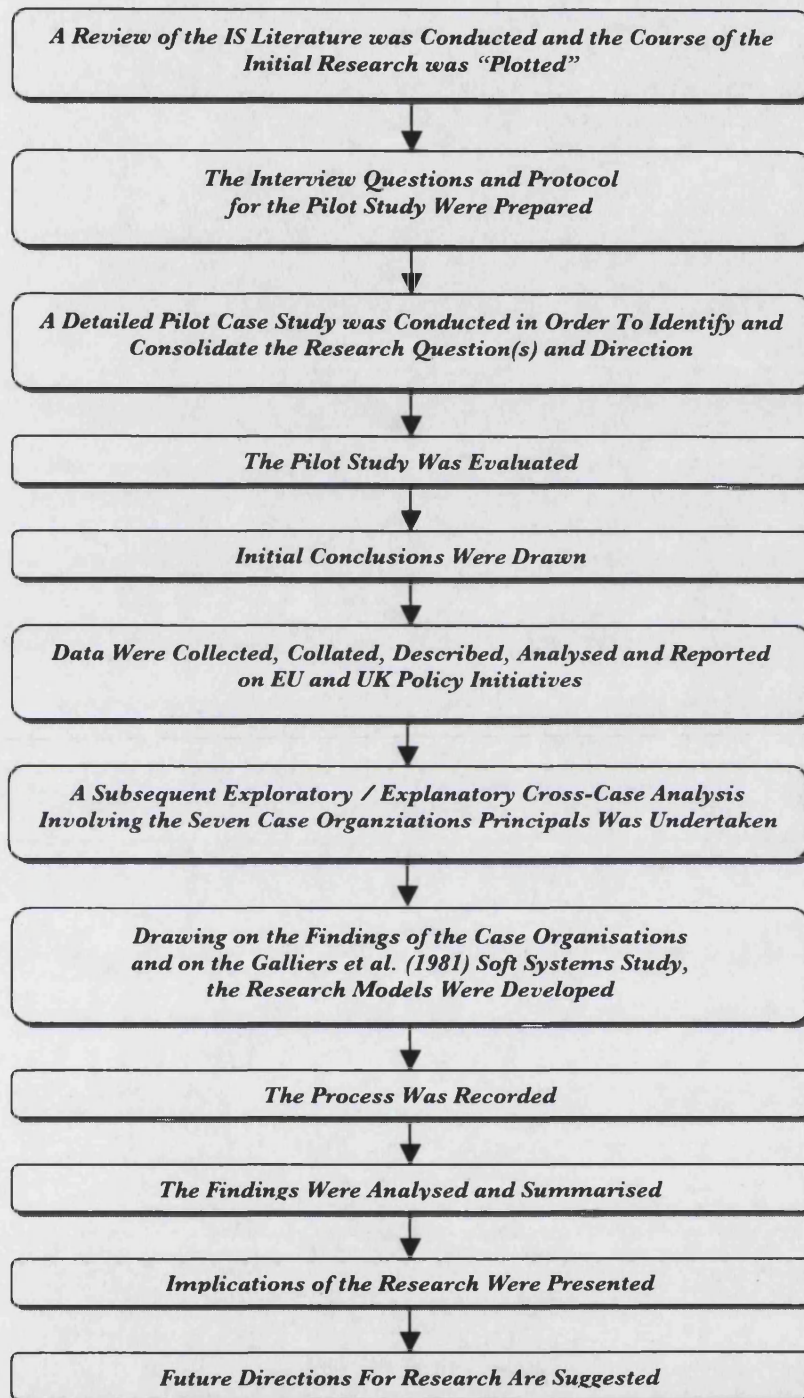


Figure 6.4 – The progression of the research

The researcher's review of the literature was recounted in Chapters 2-4, and her research methodology explained in the previous chapter. The next sub-section of *this* chapter

describes how the theoretical framework was translated into the practical task of the data collection. In so doing, the techniques and procedures the researcher employed (and through which the core concepts of the research emerged) are described.

6.3.1 Data Collection

The overall case study design for this research evolved from a single, exploratory, in-depth pilot case study (on Berkeley Square Gallery), followed by a more detailed, explanatory, cross-case analysis of the seven UK SME case organisations. These stages of the research were conducted according to the prescription of Gable (1992a; 1992b) and Yin (1989a; 1994; 2002), but viewed from an interpretivist perspective. The pilot case study was exploratory and descriptive, and was employed to identify potentially important factors influencing e-business success. These factors were then further investigated in the subsequent reflective dialogues with the case organisation principals.

For the pilot study, the models generated and utilised were of the conventional, sense-making kind (Weick, 1995). These generic models, developed during the pilot study, were based on the development of SSM models as an inquiring system (cf. Checkland and Scholes, 1990; Figure 5.11). However, after subsequent in-depth discussions with the case organisation principals, these models became more intricate, and were specific to each case organisation.

Discussions took place with the case organisation principals about the requirements of SMEs within the context of their organisational and cultural situation. Information was obtained from them in semi-structured interviews, in line with Walsham's (1995) argument that interviews can "grasp" the interviewees' interpretations of their actions and events, in addition to their beliefs and aspirations. Thus the employment of Dialogical AR enabled a perfect marriage of the research theory fitting in with its practice (refer to Chapter 5.3.4).

Inspired by and arising from the literature review presented in Chapters 2-4, the researcher pre-established a set of questions to direct the interviews. Nonetheless, the interviewees were able to express their views on any and all aspects they considered important and/or relevant, particularly as to how government policies could be rendered

more appropriate to their needs. These interviews were supplemented with interpretations of internal material and documents, external reports, industry reports, popular press articles, and observations. Arising from themes that emerged in the early analysis, a questionnaire containing open questions was developed to further investigate the core topics. Inspired by her synthesis and subsequent analysis of the literature, at the core of the questionnaire was a systematic and comprehensive series of questions intended to throw light upon SMEs' general circumstances and concerns, especially where these intersect with government (Appendix D contains the list of initial interview questions). These questions grew from – and were informed by – the literature review.

The key issues covered in the initial questionnaire were:

- Business objectives and growth.
- Barriers and obstacles to achieving business objectives.
- Financing the business.
- Business advice and support.
- Contact with/use of government services.
- Suggestions for constructing more relevant and accessible government initiatives.

A second questionnaire was prepared as the completion point for the “reflective dialogues” with the principals of the case organisations. The goal of this questionnaire was to identify whether (and if so, to what extent) the case organisation principals would/could be encouraged to donate their time and resources to participate with the policy makers who seek to serve them, in order that more visible, appropriate and accessible policy initiatives might be generated for their benefit. Presented in detail in Appendix I, these questions explored:

- To what extent the case organisation principal had become more aware of UK and EU policy initiatives as a result of participating in this research.
 - How the case organisation principals felt that policy initiatives could better affect the adoption and implementation of e-business by SMEs.
 - What the case organisation principals thought of the proposed workshops.
-

- What would incentivise the case organisation principals to participate in such a dialogue with policy makers.

Preliminary data collection began in late 2000. The researcher considered it of paramount importance that the framework she adopted provided a solid base to explore the case organisations. The primary data collection technique used was semi-structured interviews (Taylor and Bogdan, 1998). Due to the nature of the research questions, their potential to allow the researcher access to participants' interpretations (Walsham, 1995), and the collaborative relationship between the researcher and the case organisation principals, this proved to be a rich and expedient means of conducting the research.

Note-taking was supplemented by tape recording, and perceptions and observations were documented using the diary method. The research was evaluated according to the principles of conduct and the evaluation of interpretive field study guidelines developed by Klein and Myers (1999). A variety of complementary techniques were also used. These included participant and non-participant observation and document study. The collected and utilised datasets (Eisenhardt, 1989; Yin, 1989a; 1989b; 1994; 2002) and empirical material (Myers, 1997) included public, private, solicited and unsolicited documents (Burgess, 1984), archival records, interviews, direct observation (Remenyi and Williams, 1995), and participant observation (O'Connor and Trauth, 1991). A significant component of the documentary evidence gathered during the initial period of the research comprised secondary sources (such as documents, archives and other material), which had undergone at least some sort of processing or editing, since they had been prepared for a variety of occasions and they were based on a number of assumptions, which may have weakened them (Miles and Huberman, 1984). However, the primary sources (people, situations and/or events that were studied), in conjunction with the "reflective dialogues," enabled the researcher to (come to) understand many of the underlying assumptions and perspectives expressed in the secondary sources. The multiple data collection methods, or complementary techniques, were employed with the aim of obtaining a rich set of data surrounding the specific research issue, as well as capturing contextual complexity (Benbasat and Weber, 1996; Benbasat *et al.*, 1987). These multiple data collection methods enabled triangulation of data source and

methodologies (Miles and Huberman, 1984). Appendix G provides a classification of the datasets collected from the case organisations.

A period of directly observing each case organisation enabled the researcher to generate important datasets that facilitated (for example), observations of the dynamics of everyday working life. These opportunities for participant observation enabled the collection of rich detailed data based on observations *in situ*. Informal discussions with members of staff in the case organisations were a rich source of information, and were recorded in the researcher's diary – she maintained a diary throughout the fieldwork period (10/2000 – 2/2003), in line with the suggestion of Symon (1998). In addition to recording direct observations, this diary aided reflection and provided ideas that assisted in the direction of the research (Silverman, 1997).

This diary formed the backbone of data collection, preserving the basic timeline of events and serving as a place where the researcher could record her notes and reflections. The diary also provided a means of keeping track of e-mail correspondence and of cataloguing the various documents collected from events and meetings. Collecting multiple types of fieldwork data in this way provided a useful way of triangulating or corroborating events. Attending case organisation meetings and events generated different types of documentation, each of which reflected different aspects of the events taking place in each organisation. Interestingly, the e-business technologies themselves were often left out of these accounts. For this reason, the researcher observed the systems and/or technologies in question at each case organisation in order to develop a “hands on” sense of their design and utilisation. Where possible, relevant user manuals and system documentation were also collected in order to support her understanding of the situation at each case organisation. An abridged version of the researchers' Fieldwork Appointment Diary is presented in Appendix H.

Table 6.2 summarises the data collection techniques employed by the researcher.

Data Collection Technique	How Technique Was Used	Supporting Literature
<i>Note-taking supplemented by tape recording during interviews/"reflective"</i>	Primary source <ul style="list-style-type: none"> Evaluated according to the principles of conduct 	Klein and Myers, 1999

Data Collection Technique	How Technique Was Used	Supporting Literature
<i>dialogues” with case organisation principals</i>	and the evaluation of interpretive field study guidelines	
<i>Informal discussions with key members of staff</i>	Primary source <ul style="list-style-type: none"> • Enabled the collection of rich detailed data based on observations <i>in situ</i> 	Silverman, 1997; Symon, 1998
<i>Participant and non-participant observations documented in the Fieldwork Diary</i>	Primary source <ul style="list-style-type: none"> • Evaluated according to the principles of conduct and the evaluation of interpretive field study guidelines • Enabled the researcher to generate important datasets that facilitated observations of the dynamics of everyday working life 	Klein and Myers, 1999; O'Connor and Trauth, 1991; Remenyi and Williams, 1995; Silverman, 1997; Symon, 1998
<i>Document study</i>	Secondary sources <ul style="list-style-type: none"> • Collecting and utilising datasets • Empirical material (public, private, solicited and unsolicited documents, archival records, interviews – a detailed description of the collected datasets and of documents is provided in Appendix H) • Appendix G illustrates the classification of the research documents 	Eisenhardt, 1989; Yin, 1989a; 1989b; 2002 Burgess, 1984; Myers, 1997; Remenyi and Williams, 1995; O'Connor and Trauth, 1991

Table 6.2 – Data collection techniques employed during the research period

The data collection procedures were flexible enough to permit the researcher to follow up any – and all – surprising issues that surfaced (Miles and Huberman, 1984). In accordance, the researcher adopted a flexible and iterative interview design. She conducted interviews in an informal setting, in which she was alone with the respondent(s). Moreover, all interviews (after the pilot study) were recorded, and detailed notes were taken. The reflective dialogues were recorded, but the researcher did not take notes during them, in order to maintain an egalitarian, peer-to-peer atmosphere. The

researcher reconstructed and transcribed the conversations immediately after the completion of the interviews/reflective dialogues. At the end of each interview/“reflective dialogue,” the case organisation principals were asked if they would like to have a copy of the researcher’s notes once they were transcribed. Transcripts were subsequently passed on to those who wished to receive them, for feedback/comment.

Due to the dynamic nature of events and the researcher’s intention to conduct “reflective dialogues” in line with Dialogical AR, the research had to be negotiated with a number of different key stakeholders: the seven case organisation principals. The initial interviews were often used as an opportunity to negotiate the subsequent “reflective dialogues.” Particular issues of interest emerged, and further semi-structured interviews were conducted. Interviewees were asked to describe their background, their current role, and their involvement with the given organisation’s e-business adoption and implementation activities. They were also asked to provide details of any meetings in which this work involved them. Invitations to forthcoming events mentioned in the interview were sought by the researcher, and descriptions of, and documents pertaining to, past events described as significant were requested. Where appropriate, access to relevant meetings and involvement in correspondence were also requested, as were computer networks (to enable the researcher to interact with the e-business technologies in question). The researcher took care to balance the collection of interview data at all organisations against other forms of data collection taking place. All interviews took a similar form and emphasis. In total, 8 interviews and 28 “reflective dialogues” with the case organisation principals were conducted following the pilot study. These interviews are summarised in Table 6.3.

Interviewee	Time Period in Which Interviews Took Place	Pilot Interviews	Initial Interviews	Reflective Dialogues
Peter Osborne (<i>Berkeley Square Gallery</i>)	10/2000 – 2/2003	1	-	6
Christopher Davis (<i>Davis & Co.</i>)	12/2001 – 2/2003	-	1	4
William Goodenough (<i>Design Bridge</i>)	10/2001 – 2/2003	-	1	3
Christopher Foyle (<i>Foyles</i>)	7/2001 – 11/2002	-	1	3

Interviewee	Time Period in Which Interviews Took Place	Pilot Interviews	Initial Interviews	Reflective Dialogues
Demetrios Zoppos (<i>G-FX</i>)	9/2001 – 11/2002	-	1	4
Alex Fitzgibbons (<i>Lobster</i>)	11/2000 – 11/2002	-	2	5
Jessica Seaton (<i>Toast</i>)	10/2001 – 11/2002	-	1	3
Number of Interviews/Reflective Dialogues	N/A	1	7	28
Total Number of Interviews/Reflective Dialogues	N/A	36		

Table 6.3 – Interviews and reflective dialogues with the case organisation principals

During the first year of the data collection period, the researcher made sure that she was physically present at relevant case organisation meetings and events. After this first year, she intentionally switched to more of a Dialogical AR/Action Case Researcher role.

Once the series of “reflective dialogues” with the case organisation principals was completed, and the core case study materials were available as final drafts, additional meetings were arranged with the case organisation principals in order to review the researcher’s account of events. The case organisation principals were invited to comment on the presentation of case study material. However, they were not invited to comment on the analysis of that material. As long as there was agreement over the details of the researcher’s account, the responsibility for the final analysis of that account was understood to be the researcher’s alone. Areas of the text that were considered to be potentially sensitive were highlighted and discussed (and deleted, when necessary). None of these meetings threw up any particular points of contention beyond corrections to dates and/or names.

Data collection continued until February 2003, by which time each of the organisations in question had reached a significant juncture in their attempts to implement and integrate e-business into their business operations. Finishing data collection and the series of

reflective dialogues with the case organisation principals was a significant milestone, and needed to be sensitively enacted. From the researcher's point of view, it was important to begin constructing a sense of the "fieldwork period."

The researcher then had to make sense of the collected data. By so doing, she aimed to reflect the UK SME case organisation principals' experiences, which encompassed: information support, the financial aspects of contracting, and the organisational knowledge involved in establishing a pattern of contract negotiation (Checkland and Holwell, 1998). The process by which she collated and analysed the data that she had collected during the fieldwork period is described in the next section of this chapter.

6.3.2 Data Analysis

As explained in some detail in section 5.3.3 of the previous chapter, the SSM rich picture and conceptual modelling techniques were the primary Action Research data analysis techniques employed in this research. In interpretive case studies, Dialogical AR and Action Case Research analysis and SSM conceptual modelling most frequently take the form of concept analysis, in which previously specified theoretical concepts are matched to empirical data, often in a simple tabular or matrix form. Written analytical descriptions of case studies are common to these approaches.

After collecting the data, the researcher had to build SSM models to a high resolution to clearly illustrate the connection of the UK case studies to EU policy initiatives, and to construct an information classification system that captured and linked this modelling process to the ongoing research. The process of refining the conceptual models continued throughout the research, and was conducted in conjunction with the (Action Case) research on the case organisations. More refined SSM conceptual models emerged as the researcher became more adept.

Besides the careful reading (and re-reading) of the collected data, the early analysis steps also involved coding and memoing (Miles and Huberman, 1984), especially when it came to dealing with material obtained through the interviews and subsequent "reflective dialogues." In addition, the data analysis tactics adopted to draw meaning from the

fieldwork involved making comparisons and building a logical and coherent chain of evidence – these protected the researcher from drawing inferences from non-representative processes (Miles and Huberman, 1984).

In fact, the researcher's analysis of fieldwork materials had begun before data collection ended, in line with arguments that the overlapping of data collection and analysis enables researchers to address questions raised whilst still in the field (Glaser and Strauss, 1967; Eisenhardt, 1989). In most cases, the outcome of fieldwork activities were text documents, taking the form of either an interview transcript, minutes of meetings, descriptions of a technology, a model, or impressions noted by the researcher. During the course of conducting her research, these documents provided a basis for the researcher to think over activities taking place in the field and in planning the next phase of involvement. The collection of multiple data types meant that the process of organising and collating fieldwork documents needed to begin early on in the data collection period. Initially, electronic fieldwork documents were held in e-mail and document repositories, and paper-only documents in indexed box files. Although carefully filed, these documents were essentially unordered in the very early phases of fieldwork, but each communication received or paper collected was referenced within the fieldwork diary. The diary enabled the researcher to tie each piece of data to a sequence of events that was eventually translated into an index of fieldwork documents. This index mapped out the fieldwork events noted in the diary in temporal order, creating a fixed association between events and the fieldwork documents. This fixed association, in turn, facilitated the researcher's physical cataloguing and organisation of material. Latour (1999) identifies this preservation (and consequent re-arrangement) of temporal order as one of a researcher's key analytical acts when moving "from the field site into the laboratory."

The fieldwork documents were classified in terms of date, fieldwork event and type of document collected. Sometimes, where – and when – the document was part of an ongoing discussion or conversational thread, the boundary of individual documents was not discernable as a single itemisable document. For an event or communication to constitute a fieldwork event, the researcher had to be personally involved in it. By placing herself within networks that were focused on the integration of e-business *into the business* of the case SMEs, the researcher found that significant events would be discussed or

reported on in one form or another in the reflective dialogues, even if personal involvement had not been possible.

The researcher allowed unique patterns to emerge from each case individually before she attempted to link patterns across cases. The process of building the narrative of the case studies was significant in this respect, and revealed two kinds of fieldwork documents:

- Those that signified a new phase of adoption and implementation activity but which in themselves were not sufficiently complex to warrant close textual analysis.
- Those that were sufficiently rich enough to offer opportunities for identifying new concepts.

The researcher's analysis of data (ie. the dynamic and creative process through which she gained understanding of the phenomena under study and refined her interpretations, according to Taylor and Bogdan (1998)) did not occur in isolation from, but rather alongside, data collection. These dual processes examined, categorised, tabulated and recombined the evidence (Yin, 1984a; 1984b; 1989; 1994; 2002).

The research used a combination of general analytic strategies for the analysis of the evidence. Hence, reliance on expressed theoretical propositions – the research questions – helped the researcher to focus on the data and guided her analysis. Simultaneously, the supportive analytical strategy was the development of a case description: although the objective of the case studies was not descriptive, the descriptive approach enabled the identification of apparently casual links (Yin, 1984a; 1984b; 1989; 1994; 2002).

The process of mapping and attempting to reconcile two dichotomous worlds was borrowed from a Galliers *et al.* (1981) soft systems study. Although that study had a very different context from this research, the two studies share the premise of attempting to reconcile differing and asynchronous worlds within a single soft systems research project. By utilising the modelling process of the earlier study, it was possible to illustrate the problem situation in this one. Following on from this, it became possible to draw conclusions about ways to structure a meaningful dialogue between the two problem

owners, the SMEs and the policy makers. As a consequence, a resolution of the problem of how to map the disparate worlds of the research became accessible.

As has been explained (in Section 5.3.3 of the previous chapter), in SSM the Root Definition captures “the essence” of the system being described and thereby makes the activities and performance of the system “meaningful.” The Root Definition provides the basis from which a model can be built, and on which it must “occur” for the system – and the model – to be valid (Wilson, 1992; 2001). The researcher’s individual skills and experience will inevitably factor in their choices of method, as people are not equally competent across a wide range of quantitative and qualitative approaches, and as individuals tend to have comfort zones (Ormerod, 1996). Intuition is also an essential component of intellectual work (Mintzberg, 1994). With SSM, the skill and experience of the researcher in using the methodology is a crucial element. In order to illuminate this aspect of the research, the researcher’s skills and experiences are recounted in section 6.5 of this chapter.

Building on the description of the evolution of the research questions and the explanation of the methods of data collection presented earlier in the chapter, this section has described the processes of collation and analysis used by the researcher to extract meaning from the data collected during the fieldwork period. By describing these processes in detail, the logical order of not only the procedures themselves, but also the rationale behind their employment (both of which propelled the research), has been revealed. The next section describes the selection of the case organisations and how the researcher negotiated and obtained access to them. The establishment of communication channels with the case organisation principals is also explained, in order that the full scope of the research procedures – and their impact on the researcher’s intellectual journey during the course of the study – can be revealed.

6.4 SELECTION OF THE CASE ORGANISATIONS

The research focused on a selection of very different case organisations, which were chosen because, as a collection, it:

- Holds intrinsic value.
- Complements relevant EU and UK government policy initiatives.
- Provides in and of itself an extremely rich picture.

Pettigrew (1989; 1998) stressed the importance of a theoretical or purposive strategy for choosing case studies to review. His rationale was that, given the small number of organisations that can realistically be included, a selection strategy is needed to serve as a lens to magnify the research topic. Further, Eisenhardt (1989) suggests selecting cases that:

- Are polar types.
- Are in extreme situations.
- Have high experience levels.
- Have transparently observable phenomena of interest.
- Are likely to replicate or extend emergent theory.

With these suggestions in mind, the researcher made a concerted attempt to select SME case organisations that had differing levels of e-business experience, in order to draw out the salient points and to place the research issues in context. The aim was not to seek identical levels of access at each case study organisation. On the contrary, the distinct historical relationships the researcher had with each of the field sites allowed dimensions to emerge from fieldwork data that could not have been achieved otherwise.

Table 6.4 relates these criteria for case organisation selection to the various cases examined in this research.

Case Organisation Selection Criteria	Berkeley Square Gallery	Davis & Co.	Design Bridge	Foyles	G-FX	Lobster	Toast
Polar Type		✓		✓			
In An Extreme Situation		✓		✓			
High Experience Level			✓		✓		
Transparently Observable Phenomena of Interest	✓	✓	✓	✓	✓	✓	✓

Case Organisation Selection Criteria	Berkeley Square Gallery	Davis & Co.	Design Bridge	Foyles	G-FX	Lobster	Toast
Likely to Replicate or Extend Emergent Theory	✓	✓	✓	✓	✓	✓	✓

Table 6.4 – Criteria for case organisation selection (following Pettigrew (1989; 1998) and Eisenhardt (1989))

The pilot case study on Berkeley Square Gallery was an attempt to observe, interpret, and understand the organisations under study (Vidgen and Braa, 1997). A single case study could have either filtered out, or rendered contextual, the sweeping developments taking place in UK SME adoption and implementation of e-business. These developments bore implications for how the different aspects of the research would be integrated. For these reasons, this research was designed as a collective study of seven UK SME case organisations in which activities and attitudes were unformatted, situated within a “flow of events” and which aimed to capture – as opposed to filter out – the strength of conviction that formed part of contingent debates.

Marshall and Rossman (1989) propose that the ideal site for a qualitative research project is one in which entry is possible and in which there is a high probability that a mix of many of the processes, people and interactions are present. Access to the case organisations examined in this research was feasible for a number of reasons. The researcher made an opportunistic selection of the research sites, fulfilling concurrently at least three rather pragmatic case selection criteria:

- The organisation permitted a degree of access.
- The familiarity of the investigator with the organisational setting, the language and the culture of SMEs.
- The possibility for the researcher to participate in a series of ongoing activities (Burgess, 1984).

A further concern that had a bearing on the choice of case organisations was the decision to adopt a research methodology that focused on “everyday” adoption and implementation activities. This decision brought with it the need to spend time at each organisation in addition to the one-on-one “reflective dialogues” with the case

organisation principals, which took place off-site. Over the period of fieldwork research, the researcher was able to spend some time at each organisation. This enabled her to situate analysis within a “real-time” flow of events, and to have informal conversations with other key members of staff. This opportunity gave texture to the research. If data collection had happened consecutively as opposed to concurrently, this element of comparison between the sites would have been lost.

A greater understanding and analysis of professional practice can inform theory as well as practice. Research into these SME cases in their everyday contexts enabled the researcher to learn about their practices, problems and concerns and meant that she was able to generate useful and usable research and theory. This complemented her growing understanding of how SME-targeted e-business policies are developed and used in social, business and government environments.

The issue of access to the case organisations was influenced by the researcher’s relationship with each case study organisation, these being:

- *Berkeley Square Gallery* <www.bsgart.com> - Established in 1988, this commercial London gallery has a staff of five that services a client base located mainly in the USA and Far East Asia. The researcher had worked from 1996-2001 as the gallery’s IT & Design Director. Among other duties, she was responsible - at that time and in this role - for the design, programming and maintenance of the gallery’s website. She simultaneously oversaw the development of a digital image database interlinked with external institutions, including the Henry Moore Foundation. Her responsibilities in this regard included overseeing the administration relating to the database development and outsource contracts, the design of dedicated software, the creation of computerised records and the provision of essential system support.
- *Davis & Co.* <www.davisco.net> - Davis and Co. is a London law firm with a network of 40 lawyers and support staff built entirely around flexible and remote working. After reading a newspaper interview with the founder of the firm, the

researcher contacted him with the request that his organisation participate in her doctoral research.

- *Design Bridge* <www.designbridge.co.uk> - A privately owned group of four brand design companies. From June-September 2001 the researcher worked on a freelance basis as a Senior Designer in the Digital Media division. During this time she was solely responsible for the design and redevelopment of the organisation's website, and oversaw from concept to completion stage the development of a number of their clients' websites. She also developed the visuals and concepts for new media pitches to Unilever, Nike, Muller, Absolut Vodka and MTV.
- *Foyles* <www.foyles.co.uk> - At one time the world's largest bookstore, located in Charing Cross Road, London, with 30 miles of shelves, Foyles has only recently embraced the most fundamental aspects of technology. The researcher, an inveterate reader, and for several decades a customer of the store, read an intriguing magazine article following the death of the store's owner, Christina Foyle (who had been such a technophobe that even calculators and cash registers were banned during her lifetime). Upon inheriting control of the store, her nephew, Christopher Foyle, embarked on a major programme of IT/e-business adoption and implementation. The reader contacted him with the request that Foyles be a case organisation for her research.
- *GF-X* <www.gf-x.com> - Founded in London in 1998, GF-X has developed a B2B trading platform to exploit the airfreight sector, with bases in London, New York, Dubai and Tokyo. The existence of the company was brought to the attention of the researcher by a former colleague, who was working there as a consultant. Upon the researcher expressing an interest in the organisation's inclusion in her research, an introductory meeting was arranged with one of the co-founders of the organisation.
- *Lobster* <www.lobster.co.uk> - Established in 1999, Lobster caters to the sophisticated gourmet food niche market. The researcher was co-author of

Galliers, R.D. and Wiggins, A. (2002). "Internet Retailing in the United Kingdom" in Elliot, S. (Ed.), *Electronic Commerce: B2C Strategies and Models*. John Wiley & Sons, Oxford: 179-215. Lobster was one of the case organisations examined therein.

- *Toast* <www.toastbypost.co.uk> - Started in 1997 in the kitchen of the Welsh country home of a married couple, this clothing company has turned into a multi-million pound mail order enterprise. The researcher approached the couple after reading about them in a newspaper article, and requested that they participate in her research.

Yin (1984a; 1989; 2002) insists that having a case study protocol is essential if a multiple case design is being used. The case study protocol is a data collection instrument intended to increase the reliability of case study research. Since multiple case studies require cross-case comparisons, some standardisation of the research instruments was necessary to facilitate comparative analysis (Lee, 1989b). As has been explained, the initial case study protocol consisted of a list of questions defined by the variables identified in the literature. This list of general questions related to potential individual, organisational, and technical factors that (may) influence e-business adoption and implementation success in SMEs. Based on an analysis of the pilot case study on Berkeley Square Gallery, a revised protocol was created and used as an interview guide to ensure that parallel information was collected across the case studies. Qualitatively oriented interviews gave a general understanding of the SMEs' organisational culture, of business and e-business practices, and of attitudes towards government policies related to the adoption and implementation of e-business by SMEs. These interviews set a collaborative tone for the subsequent "reflective dialogues" between the researcher and the case organisation principals.

The researcher did not sign any legally binding documents with the case organisations, since not only did the principal in each case organisation consider her credibility to be adequate, but also because they trusted her to conduct academic research in an ethical manner. When discussions turned to data collection, it was explicitly stated by the researcher to the case organisation principal in each organisation that she felt she had an obligation to respect the organisation's wish for confidentiality. Moreover, the researcher

stressed that she would not disclose sensitive financial information, mainly related to the costing procedures of the organisations. The researcher promised to notify each organisation of her intention to publish any articles, reports and books arising from her research.

During access negotiations it was not always feasible for the researcher to identify all the data sources she would be using. As a result, it was arranged in each case organisation that she could have access to internal documents and archives, and could interview employees, separate to the informal discussions that arose. This proved to be important for research validity and reliability (Burgess, 1984). The number of additional actors interviewed in the case organisations is presented in Table 6.5. These interviews took place during the researcher's observation periods at the case organisations.

Organisation	Interviews and Reflective Dialogues with Case Organisation Principals	Number of Other Organisational Actors Interviewed	Interviews with Case Organisation Employees
Berkeley Square Gallery	7	4	7
Davis & Co.	5	3	5
Design Bridge	4	8	5
Foyles	4	6	6
G-FX	5	5	5
Lobster	7	2	2
Toast	4	2	2
Number of Interviews	36	30	32

Table 6.5 – Summary table of case organisation interviews

The researcher consistently tried to ensure that the research tools she employed were used with a good understanding of their provenance, philosophical and theoretical underpinning, and inevitable limitations (Feyerabend, 1993; Rose, 1997). All stages of research were marked by extensive participation with the case organisation principals, and the resulting analysis and conceptualisations facilitated the ongoing development of the SSM conceptual modelling process. The case organisation principals were, in all of the case organisations, either the owner or manager of the SMEs: the person who would

have to agree to any new strategy, and would be ultimately responsible for implementing it. All proposals by the researcher were put in terms that they could relate to, and which acknowledged their understanding of the relevant issues. The case organisation principals were a vital source of information, and divulged their knowledge and insight of their businesses based on their in-depth knowledge and experience.

It is worth noting that neither the case organisation principals nor the seven case study organisations had any formal or informal connection to one another before, during or after the research period, and no inter-relations between the organisations came to the researcher's attention.

Having completed this description of the selection of the case organisations, and having recounted the route into and level of access available at each, the next section of the chapter explains the skills and role of the researcher. This brief introduction is provided in order to serve as an indication of her level of understanding of the subtle permutations of the research and her ability to combine theoretical qualifications with practical experience.

6.5 REFLECTION ON THE SKILLS AND ROLE OF THE RESEARCHER

The researcher's employment background began in arts administration. From 1988-1999, she worked in museums, private and public arts organisations in the US, Australia and the UK. She has participated at every level in the development and implementation of education programmes and literature designed to assist primary and secondary students up to matriculation level to understand and appreciate abstract and conceptual art. Over time, her role evolved to encompass the design and development of kiosk installations, CD-ROMs and websites. Since 1999, the researcher has built a solid reputation as a new media consultant in a variety of roles. Testament to her skills and experience is the caliber of her clients, who have included: Richemont, The Olympic Television Archive Bureau, The British Museum, The Nobel Channel, PriceWaterhouseCoopers, BAE Systems, GlaxoSmithKline and Renesas Technology.

The researcher has a BA (History & Medieval Studies) from the University of Sydney, and

an MA (Computer Applications for the History of Art) from Birkbeck College, University of London. The coursework for her master's degree examined the fundamentals of digital technology, software, hardware, databases, image processing, multimedia, and the internet, and looked at how these are used in research, education, collections management and information dissemination, with emphasis on the application of computers to the visual arts. Her self-directed research thesis, *A Discussion of the Issues Surrounding the Use of the Internet in Commercial and Public Cultural Organisations*, was presented in two parts: by submission of a 10,000 word independent study, and by a separate fully-functional multimedia application.

Hence, the researcher's specific knowledge and experience enabled her to understand the established technologies within the organisational setting, enabling the reconstruction of context. This knowledge, coupled with her managerial experience acquired over the course of her career, also enabled the development of a wider understanding about organisational and social aspects, including social interaction and institutional conditions. This combination of skills and experience made possible a richer analysis of the data she collected over the course of the research.

6.6 SUMMARY OF THE RESEARCH PROCEDURES

Developing the explanation of the research methodology/framework (given in the previous chapter), *this* chapter shows how the relevant theoretical considerations were transformed into the collection and analysis of valid empirical data. The development of the research questions was explained, as was the data collection and data analysis techniques and procedures employed to contend with the shifting form of the research domain. The opportunistic selection of the research sites was recounted, and reflections on the researcher's skills and background were provided as evidence of her understanding of both technologies and the organisational setting.

The "story" of the research's evolution was thereby laid forth. The next three chapters are built in turn on this foundation, and provided a detailed account of the researcher's interactions with and observations of the seven case organisations. The structure of the three forthcoming chapters dedicated to the case organisations is a reiteration of the categories and storylines that emerged during the research. The next chapter, therefore,

describes the evidence that arose from the case organisations Berkeley Square Gallery, Davis & Co. and Lobster in some detail. Chapter 8, which follows it, presents an overview of the experience of e-business adoption and implementation of the remaining four case organisations: Design Bridge, Foyles, GF-X and Toast. Although the research procedures were equally comprehensive with all seven case studies, events subsequent to the fieldwork period resulted in the latter four case organisations no longer fitting the criteria of an SME in either the UK or EU definitions. The reasons for this are made clear in each individual case description. They are outlined in somewhat less detail than the three case organisations in Chapter 7. The full research procedures were undertaken with all seven case organisations throughout the research period, however. These latter four case organisations are therefore utilised primarily to draw out the salient points that will be presented in the discussion of the case organisations that follows in Chapter 9.

Chapter 9 discusses the findings that arose from the research on the seven case organisations. That chapter draws together the different strands of the research, and presents a detailed analysis, using theory to provide greater insights into the problem domain.

Supplementary information referred to in this chapter is located in the following appendices:

- Appendix D – Interview Questionnaire
- Appendix G – Collected Datasets – A Classification of the Case Organisation Documents
- Appendix H – Fieldwork Appointment Diary
- Appendix I – Incentivisation/Workshops Questionnaire

Chapter 7

Three In-Depth Case Studies

7.1 INTRODUCTION

The previous chapters of the dissertation have laid the groundwork for the trilogy of chapters that begins with this one. As a whole, they provide an account of the research into the seven case organisations. This chapter describes the evidence that arose from three of the case organisations: Berkeley Square Gallery, Davis & Co. and Lobster. They are presented in some detail. The following chapter presents an overview of the remaining four case organisations: Design Bridge, Foyles, GF-X and Toast. The final chapter in the trilogy, Chapter 9, knits together all the disparate threads of the research, and presents a detailed analysis of the findings that arose from the research on the seven case organisations as a whole.

As has been previously explained, the researcher conducted a general background information search on each case organisation before the interviews or “reflective dialogues” with the case organisation principals began. Following the pilot study on Berkeley Square Gallery, the first phase of data collection with each of the case organisation principals for this research consisted of taped interviews of approximately 2-3 hours duration. Every interview tape was transcribed and analysed for further comparative evaluation, alongside the complementary documentation that arose from the researcher’s collected datasets (as presented in Appendix G). Thereafter, the direction of the subsequent Dialogical AR-inspired “reflective dialogues” was directed, to a great extent, by the case organisation principals themselves.

This initial stage of the research was conducted in order to:

- Gauge the needs of SMEs and to assess their main concerns.

- Record the case organisation principals' awareness and/or expectations of available avenues of government business support.

A set of introductory interview questions was developed for the initial interview with each case organisation principal. These questions were informed by (and emerged from) the researcher's review of the literature. A copy of these questions is attached as Appendix D.

This systematic and comprehensive series of questions was compiled with the intention of illuminating the case organisations' general circumstances and concerns, especially where they intersect with government departments and their agencies. The researcher's review of the literature (in Chapters 2-4) brought to light a number of issues that affect SMEs' adoption and implementation of e-business. These key issues were:

- Business objectives and growth.
- Barriers and obstacles to achieving e-business objectives.
- Financing the businesses.
- Business advice and support.
- Contact with/use of government services.

The questionnaire sought to address these issues. The questions therein were therefore designed to capture:

- The case organisation principal's perspective of how his/her organisation used technology to enhance their business.
- Whether the case organisations had a strategic e-business plan, and if so, how comprehensive it was.
- An overall discussion of the impact, constraints, and usefulness of ICTs in SMEs.
- The case organisation principals' awareness and expectations of relevant available government support.
- Suggestions for a more collaborative relationship with government agencies.

A second questionnaire was prepared as the completion point for the "reflective dialogues" with the principals of the case organisations. This questionnaire was formulated with the aim to identify whether, and if so to what extent, the case

organisation principals would/could be encouraged to donate their time and/or resources to participate with the policy makers who aim to serve them, in order that more visible, appropriate and accessible policy initiatives can be generated for their benefit. These questions explored:

- To what extent the case organisation principals had become more aware of UK and EU policy initiatives.
- How they believed policy initiatives could better affect the adoption and implementation of e-business by SMEs.
- What they thought of the proposed workshops.
- What would incentivise them to participate in such a dialogue with policy makers.

This questionnaire is presented in Appendix I.

As explained, this chapter examines three very different UK SME case organisations in some detail: Berkeley Square Gallery, Davis & Co. and Lobster. The remaining four case studies investigated in the course of the research (Foyles, G-FX, Design Bridge and Toast) are outlined in somewhat less detail in the next chapter. At the beginning of the research period, the latter four case organisations could all be classified as SMEs. However, by the time the researcher was writing up, due to either organisational growth or to having been purchased by a conglomerate, the case organisations in the latter group no longer fit the criteria of an SME in UK and/or EU official government terms. The full research procedures were undertaken with these case organisations, however, and accordingly these cases are presented in Chapter 8 in order to accentuate and draw out the salient points in the discussion of the case studies *in situ*, which is presented in Chapter 9.

Within each of these two chapters, the cases are presented in alphabetical order. In line with the Dialogical AR-inspired methodology, the individual “voices” of each case organisation are somewhat different, in order to more accurately reflect the fact that, following the initial interviews, the direction and content of the “reflective dialogues” were prescribed by the case organisation principals. Accordingly, the “tone” individual to each case organisation is a natural result of the employment of Dialogical AR. To preserve the sense of immediacy of the fieldwork experience, the case studies are all

written up in the present tense. The flow and content of each case study, however, is consistent throughout:

- An introduction to the case organisation is provided.
- The key e-business adoption drivers are recounted.
- The development and operational issues that arose are discussed.
- The case organisation's involvement with networks and alliances is detailed.
- The case organisation principal's perspectives on government policies and initiatives are examined.
- The case organisation principal's vision for the organisation's future development is described.
- The actual experience of how the organisation developed from the end of the fieldwork period until the end of the thesis' writing up period is recounted.

In this and the following two chapters, the researcher has intentionally, where findings arise from the literature, noted them in the footnotes. She felt that this was necessary, given that there are so many comprehensive references – had they been incorporated into the main text, they would almost certainly have interrupted the narrative flow (ie. in this chapter alone, Berkeley Square Gallery has 17 footnotes, Davis & Co. has 16, and Lobster has 12).

The theoretical framework was selected to support data collection. It was also intentional that the data and case study materials were separated from the analysis as far as possible in the writing, in order that the researcher could (attempt to) judge the validity of the analysis and conclusions. The research has been explained as being overt and conducted in collaboration with the case organisations concerned. The end product of the research process can be characterised as proffering specific implications in a particular domain. Whilst the theoretical foundations of the research have been explained in previous chapters in some detail, the outcome, or resolution, of these concepts can only be fully developed when the fieldwork data is presented. Therefore, the analysis of fieldwork data is included in the discussion of the case studies presentation in Chapter 9. A supplementary and comprehensive summary of the findings, within accompanying tables, is therefore presented in Appendices O and P.

The first in-depth case study presented in this chapter is Berkeley Square Gallery, the case organisation on which the pilot study was conducted. This presentation is followed by in-depth examinations of Davis & Co. and Lobster.

7.2 IN-DEPTH CASE STUDY – BERKELEY SQUARE GALLERY

Established in 1988, Berkeley Square Gallery <www.bsgart.com> is a commercial London gallery with a staff of five that services a client base located mainly in the USA and the Far East. The owner-manager, Peter Osborne, is a passionate advocate of technology.⁸⁷ As a consequence, developing a comprehensive website detailing the gallery's updated stock was and remains a high priority. The gallery was one of the first commercial galleries in London to have a website.

Berkeley Square Gallery has used a broadband internet connection to research and communicate with potential and existing agents, artists and clients since 1996. The gallery's website, which was also launched in 1996 (with several major redesigns since), is described by Osborne as being "an interactive online brochure." The gallery's website serves the business as its main communication and promotional medium to existing and potential clients, and replaced "a significant percentage" of the gallery's printed brochures, which were becoming "prohibitively expensive" to update and distribute. The website has enabled the business to "tailor its services to client and market requirements," to respond quickly to queries and suggestions, and to list the prices of and information about works of art for sale. The website does not, however, facilitate electronic payments. Customers are nonetheless invited to communicate and purchase works via email correspondence. Osborne does not think that a transactional facility on the site would result in any tangible benefits for the business, as many of the gallery's clients still prefer to rely on other forms of communication, such as telephone and fax machines, and on traditional modes of financial transactions, such as bank transfers (especially given the large amounts often involved).

⁸⁷ Evidence that this SME owner/manager characteristic is essential for championing e-business adoption is presented in Chapters 2 and 3 and in Appendix C (Kirby and Turner, 1993; Harrison, 1994; Iacovou *et al.*, 1995; Yap and Thong, 1997; Berg and Karttunen, 1998; Nilsson, 1999; Turban *et al.*, 2000).

Since its initial website launch, the gallery's website URL is featured on all advertising, stationery and documentation. "I'm all for investigating inexpensive but effective online promotional methods," claims Osborne. "I've researched all the options that have crossed my path, including banner advertising and reciprocal linking."

In order to retain gallery staff, Osborne ensures that they "are not over-trained." He credits this strategy with having created a working environment in which the gallery's staff will usually only move on to another firm for a substantial pay rise (uncommon in the notoriously low-paid art world).⁸⁸ It has proved to be a successful strategy, in that most of the gallery's employees have been there for over 10 years. People with management potential "do not tend to stay" with the gallery, as they are offered "no opportunity of promotion." The gallery is too small to offer an upward career path to ambitious staff – a problem shared by many SMEs, as has been shown in Chapter 2 and Appendix B (Gunningle and Grady, 1984; McMahon, 1994; Kennedy and Healy, 1985; Blili and Raymond, 1993; Dennis, 2000).

7.2.1 Key e-Business Adoption Drivers

Prior to the installation of an integrated stock management system and website in late 1990/early 2000, the gallery's client and stock information was stored in a diverse range of media. Some stock information was contained in the company's "ancient" pre-Windows database, but most of it was located in numerous filing cabinets and storage boxes situated in various locations scattered around the company's premises. Even more significantly, much important information was stored as tacit knowledge, held in the minds of key personnel. This situation created two major weaknesses:

- When (existing or potential) customers contacted the gallery with an enquiry, if the answer required the tacit expertise of a specific individual who was not available at that time (a common scenario, as several of the staff members work

⁸⁸ This is in line with the following findings:

- SMEs generally pay lower wages, as presented in Chapter 2 and Appendix B (Gunningle and Grady, 1984; Kennedy and Healy, 1985; McMahon, 1994).
- SMEs generally don't train staff, as presented in Chapter 2 and the comprehensive reference lists provided in Appendices B, E and F (which include: Hitchens and O'Farrell, 1988; Blili and Raymond, 1993; Reynolds *et al.*, 1994; Bunker and MacGregor, 2000).

on a part-time basis), then responding to that enquiry could take up to a number of days. Even enquiries of relatively minor complexity could meet with significant delays, during which time the potential customer could potentially defect to a rival gallery.

- The gallery was highly vulnerable whenever a member of staff left, as they took their tacit knowledge with them.

In Chapters 2 and 3, it was described how small businesses often rely on their existing physical infrastructure to deliver products to an online market (Craig *et al.*, 2003). In line with this finding, Osborne's initial goal was to transform the gallery's business into a "bricks-and-clicks" model by selling inventory from the physical gallery online as well as in store. It wasn't until 1996, however, when he hired an employee whose remit included managing the gallery's internet and ICT operations, that the gallery's first website was launched. Osborne admits that this process was "much harder" than he expected.

In any effective publication, an understanding of the target audience is fundamental to producing meaningful copy. In the case of Berkeley Square Gallery, the "audience" divides clearly into two main categories: potential and existing clients. Osborne "decreed" that the launch of the gallery's internet site required that the staff member responsible for it "undertake an intensive period of industry analysis." This analysis established that there was a clear need to enable the gallery's existing and potential clients to interact with the organisation in a more effective way, and that it was no longer feasible, given the competition, for these clients to have to wait to get the information that they required. The internet was seen as an ideal way to ensure that these clients would be better informed, and that by doing so to outsource much of the low-level research work to the clients themselves.

Therefore, a website was developed to provide basic information about the gallery and its works for sale. It was intended from the beginning that the gallery's website would be frequently updated. If the answer to a particular enquiry was not available on the site, customers were encouraged to send enquiries directly to the gallery via email. Once either Osborne or another staff member had researched the answer, the customer would be notified directly, and the answer would also be placed on the website's FAQ page and in

the relevant section of the website. Thus, the website became “a continuously updated repository of the gallery’s knowledge” (Osborne considers knowledge to be a primary source of competitive advantage, a view supported by the findings presented in Chapter 3).

7.2.2 Development and Operational Issues

“I never thought that going online would be an easy business endeavour, but I didn’t expect it to be so difficult, either. It’s even harder when you are a sole proprietorship without talent to utilise”

Peter Osborne.

Initially, the gallery’s e-business strategy was devised by the staff member hired for the purpose of managing the gallery’s online and networking activities. She had considerable input from Osborne, however. He admits that he likes “to control everything that happens” in his business.⁸⁹ The approach recommended by the staff member responsible, taking into consideration the financial and other resource constraints, was that the gallery should adopt and adapt an “off-the-shelf” professional database development package in combination with an integrated website management package. She recommended this on the grounds that purchasing a ready-made solution with options to provide standardised e-business features with built-in business rules would simplify operations enormously, as well as limit financial expenditure. A major additional benefit of this proposed solution would be that all stock information would thereby come to be stored in one accessible location. She advised that she would be able to design, upload and manage the website, and that the database for the gallery could be integrated into the stock management system. She recommended that the gallery’s staff would then be trained to use the development tool to update the web pages and – most importantly – to populate the website with knowledge (primarily taking the form of stock information).

⁸⁹ This is in line with evidence presented in Chapter 2 and Appendix B regarding the strong owner influence and centralised management of SMEs (Dandridge, 1971; Nelson and Winter, 1977; 1982; Welch and White, 1981; Oakey, 1985; Raymond, 1985; Miller and Droge, 1986; Miller and Toulouse, 1986; Bekker and Staude, 1988; Blili and Raymond, 1993; Kirby and Turner, 1993; Harrison, 1994; Reynolds *et al.*, 1994; Iacovou *et al.*, 1995; Mulhern, 1995; Murphy, 1996; Spender, 1996; Julien *et al.*, 1997; Yap and Thong, 1997; Bolisani and Scarco, 1999; Bunker and MacGregor, 2000; Dennis, 2000; Smallbone *et al.*, 2000; Olave and Nato, 2001).

At this stage, however, Osborne decided “on a hunch” to enlist the aid of “a cousin of a friend,” who proposed to develop and code a system from scratch. Rather than purchase the ready-made solution that had been researched and agreed upon,⁹⁰ Osborne decided to go with this latter option, a decision he later described as “insane.”

Although the website was (separately) successfully designed and uploaded by the member of staff responsible for doing so, Osborne’s decision initially created some friction within the organisation. However, the friction was “soon superceded” by having to deal with the ongoing “sub-optimal technical solution” that the system coder had created and was “trying unsuccessfully” to rectify. Osborne admits that the decision “to build a system from the ground up” was “an unqualified mistake.” The situation became increasingly fraught with problems that were not resolved for several years. “Enormous additional costs” were absorbed into “a pit” of general staff unproductivity. An integrated package was eventually purchased in late 1999, as had originally been advised and planned.

Also, at Osborne’s insistence, the gallery’s staff members had not been consulted or were in any way involved with the selection and installation of the system coder’s package under development.⁹¹ This (not surprisingly) resulted in staff members becoming concerned when the replacement system was being introduced. Osborne eventually – and somewhat reluctantly – realised the need to convince the gallery’s staff of the package’s

⁹⁰ References and examples in line with evidence in Chapters 2 and 3 and Appendices A, C, E and F are presented for the following aspects of this type of SME owner/manager decision-making:

- Informal and inadequate planning processes occur because of a lack of the owner/manager’s recognition of the benefits of doing so (Gunnigle and Brady, 1984; Giaglis *et al.*, 1998; McMahon, 1994; Reynolds *et al.*, 1994; Pollard and Hayne, 1998; Chappell and Feindt, 1999; Bunker and MacGregor, 2000; Stauber, 2000; Millar and Besser, 2000; Lee, 2001; Levy *et al.*, 2001a; 2001b; Raymond, 2001; Tetteh and Burn, 2001; Jeffcoate *et al.*, 2002).
- SME owner/managers typically take advice from friends and family rather than from professionals (Dandridge, 1979; Clegg, 1990; Cornford *et al.*, 1991; Bunker and MacGregor, 2000; Castleman *et al.*, 2000; Dennis, 2000; Gibb, 2000; Miller and Besser, 2000; Castleman and Coulthard, 2001; Drakopoulou-Dodd *et al.*, 2002).
- SME owner-managers having short-range management perspective (Welch and White, 1981; Harrison, 1994; Reynolds *et al.*, 1994; Giaglis *et al.*, 1998; Pollard and Hayne, 1998; Bunker and MacGregor, 2000; Tetteh and Burn, 2001; Jeffcoate *et al.*, 2002).

⁹¹ This is in line with evidence presented in Chapter 2 and Appendix B regarding the strong owner influence and centralised management of SMEs (Dandridge, 1971; Nelson and Winter, 1977; 1982; Welch and White, 1981; Oakey, 1985; Raymond, 1985; Miller and Droge, 1986; Miller and Toulouse, 1986; Bekker and Staude, 1988; Blili and Raymond, 1993; Kirby and Turner, 1993; Harrison, 1994; Reynolds *et al.*, 1994; Iacovou *et al.*, 1995; Mulhern, 1995; Murphy, 1996; Spender, 1996; Julien *et al.*, 1997; Yap and Thong, 1997; Bolisani and Scarco, 1999; Bunker and MacGregor, 2000; Dennis, 2000; Smallbone *et al.*, 2000; Olave and Nato, 2001).

benefits in order to mitigate the effect of resistance, especially in light of the failure of the previous “solution.” Accordingly, an intense programme was undertaken in order to convince the gallery’s staff that e-business would have benefits, not only for the gallery’s business, but also to enable them to perform their individual duties with greater efficiency.

An ICT skills audit of all gallery staff revealed that while most staff members had some level of word-processing, presentation software and spreadsheet skills, several had no ICT experience at all. And while Osborne himself had a wealth of industry experience and considerable enthusiasm, his own technological skills proved to be a major limitation.⁹² Despite his enthusiasm for embracing e-business, he admitted that he would rate his knowledge of all web *development* technologies as “poor.”

It was decided that, if the website was to become useful (as far as the gallery staff members were concerned), it would have to be adapted to capitalise on the current levels of ICT knowledge within the organisation. During the subsequent full consultation process, the potential benefits for the decision to implement the website included a new stock management package integrated with the website, and the potential streamlining of each staff member’s tasks were explained to them. The staff were each invited to express their comments, concerns and criticisms. As a result of this consultation process, modifications were made to the implementation approach. The system was adapted so that staff could add and update web pages and stock information using word processing, database and spreadsheet software – applications with which most of the staff members were already somewhat familiar.

The next phase of e-business adoption and implementation was to conduct a series of staff training days. These involved the gallery’s staff (who were paid for their attendance) learning to use the website and integrated database in order to find answers to common customer enquiries, and to populate the website with new information. This approach served the dual purpose of training them and also of emphasising the importance that

⁹² This is in line with evidence presented in Chapters 2 and 3 and Appendices B, E and F (Roberts and Berry, 1985; Iacovou *et al.*, 1995; Poon and Swatman, 1996b; 1997a; 1997b, Auger and Gallagher, 1997; Yap and Thong, 1997; Tidd *et al.*, 1997; Berg and Karttunen, 1998; Zimmerman and Mathiesen, 1998; Purao and Campbell, 1998; Chau and Pederson, 2000; Farhoomand *et al.*, 2000; Mirchandani and Motwani, 2001; Barry and Milner, 2002; Dixon *et al.*, 2002; Roberts and Wood, 2002).

Osborne placed on the project. The sessions were conducted in an informal manner in order to mitigate the anxiety of the staff.

Development of this online integrated stock management system/website consumed a great deal of the responsible staff member's time and energy. She recognised that full documentation of the system would be required, and again this task fell to her to solve. She believed, however, that the burden of doing so would be outweighed by the strategic benefits: producing a system that the staff did not understand and/or would not use would be of little value.

As with many organisations, launching a website was relatively painless in comparison to the challenge of maintaining it. Although it was initially assumed that the staff member responsible for building the site would continue to handle its design, programming and maintenance alongside her primary role, staffing quickly became a critical issue, as the sheer volume of work exceeded expectations – thousands of stock items needed to be added to the system.⁹³

The staff member responsible for the gallery's online operations left the gallery in 2000. Osborne describes the process of adding to the site (following her departure) as "constant wrangling" between individuals before "eventually someone would reluctantly do it." In the two years that followed, the size of the website and integrated database expanded considerably, becoming "heavily and cryptically cross-linked." By this time, no single staff member had the time or responsibility to do complete editorial control, and increasingly, newer pages became inconsistent with older ones, the content was uneven, and

⁹³ This is in line with the evidence shown in Chapter 3 and Appendix F, whereby it is often an individual within an organisation who initiates the move to launch a website/e-business innovation, and that this is often dependent on extant skills. In so doing, that individual takes on a considerable amount of extra work (Sriram and Bannerjee, 1994; St. Pierre *et al.*, 1999; MacGregor *et al.*, 1998; 2004).

As we have also seen in Chapter 3 and Appendix F, many organisations launch websites without realising how much maintenance and ongoing development they will require (Sriram and Bannerjee, 1994; Murphy, 1996; Berg and Karttunen, 1998; MacGregor *et al.*, 1998; 2004; St. Pierre *et al.*, 1999; Ritchie *et al.*, 1999; Stauber, 2000; Sparkes and Thomas, 2001; Lee, 2001; Porter, 2001). Many SMEs are particularly disadvantaged by their lack of clearly thought out or articulated goals (Pollard and Hayne, 1998; Giaglis *et al.*, 1998; Kalakota and Robinson, 1999; Bunker and MacGregor, 2000; Evans and Wurster, 2000; Jeffcoate *et al.*, 2002). In addition, because the internet is a (relatively) new medium, attitudes towards it within conservative public and commercial arts organisations are imbued with "prejudice and mystique" (Haapalainen, 1999).

distributed incomprehensibly.⁹⁴ Eventually, the management and maintenance of the gallery's site had to be completely outsourced, as Osborne was not able to find an "affordable" new member of staff for the project.

Before leaving the gallery, the staff member responsible for the website conducted statistical analysis research (building on the findings of the one she had conducted several years prior). This analysis showed that the site had two audiences, the first of which was local, consisting of people planning visits to the physical gallery, and a second consisting of people searching the web for specific art works. Knowing the gallery's audience assisted immeasurably in rebuilding the site, a process that she began before leaving the gallery. Osborne admits that, in retrospect, he should have followed her initial advice and defined his goals and strategies before launching the gallery's website (this issue is presented in Chapter 3 and Appendix F).⁹⁵

Despite these operational challenges, having a website proved from the beginning to be beneficial for the gallery. Since 1997, the gallery's exhibitions have featured both in the gallery's physical exhibition space and "virtually." In 2000, for example, a remarkable "online exhibition" was divided into four primary areas:

- In the first area, a "Gallery" of photographs of London was displayed full-screen, with navigation designed to invoke the experience of touring a physical gallery with these images on bare white walls.
- In the second area, "Memories," comments made by visitors about experiences of London were accepted by e-mail and posted on the site, curated into a threaded discussion.
- The third area of the website, "Commentary," invited the public to comment on the experience of living in Britain in the 21st Century.
- The final area, "Commemorations," was a discussion of what it means to memorialise events, with links to physical memorials.

⁹⁴ This is in line with evidence presented in Chapter 3 and Appendix F (Sriram and Bannerjee, 1994; Lawrence, 1997; MacGregor *et al.*, 1998; 2004; Zimmerman and Mathiesen, 1998; St. Pierre *et al.*, 1999; Tetteh and Burn, 2000; 2001; Lee, 2001).

⁹⁵ This experience is in line with the findings of Giaglis *et al.*, 1998; Pollard and Hayne (1998), Kalakota and Robinson (1999), Bunker and MacGregor (2000), Evans and Wurster (2000) and Jeffcoate *et al.* (2002).

This website was an “encapsulated gallery exhibit visitation” with the same principles of “image manipulation, evocative questioning and interaction between people” working online. According to Osborne, the “extraordinary discussion” that developed during the six weeks this exhibition was live “finally convinced” the staff at the gallery that the internet does indeed provide cultural organisations with “a new way of interacting” with their existing and potential clients.

Osborne claims that this provision of “experience, not just information” enabled the gallery’s website to become “fundamentally more inviting,” and therefore made it possible for the gallery’s visitors to have a “meaningful, and therefore real” experience online, just as a physical gallery visit can be divided into “objects, information and experience.”⁹⁶

⁹⁶ Cultural organisations, even if they are small commercial galleries, remain institutions of enlightenment in the classic sense, obliged to guide the visitor toward critical viewing and experience (Semper, 1999). But arguments about whether - and to what extent - the gallery “experience” can be transferred online essentially refer back to questions concerning what a gallery is and to what the gallery experience can potentially be. Online galleries “support and extend” the idea of transferring “meaning and knowledge building” (Teather, 1998). Indeed, Bearman (1992) maintains that all cultural organisations, public and commercial, are “in the business of dissemination of information rather than artefacts.” This view validates intangibles, such as oral histories, in addition to the actual artefacts.

According to Bearman (1992), cultural organisations are “in a key position” to “integrate traditional functions of collection, preservation, research and display with... education and communication.” In his view, cultural organisations will come to be judged according to how well the online versions of cultural organisations “tell the stories” of our cultural history. Hermann (1999) is in agreement with Bearman’s point of view that the primary role of a cultural institution, commercial or public, is to let the artwork “tell stories.” Stories, according to Hermann (1999), “entertain” and “knit us together, creating our culture.” Preservation, research and scholarship are vital, but people “remember and connect to” stories, which give us our emotional connections to each other, to our shared culture, to other cultures, and to works of art. Roberts (1997) has documented how cultural organisations place objects in a narrative context. But the number of “stories” a small commercial gallery (for example), can tell has until now been necessarily restricted by competition for gallery space and publication budgets. Cultural organisations, having made the transition to narrative interpretation in physical space, have now the opportunity to move from the 19th century view of interpretation in virtual space to begin to exploit the full storytelling potential of the internet (Roberts, 1997). In physical space, objects take centre stage, even in a narrative interpretation. In virtual space, the object recedes, and the story becomes pre-eminent. The same premise holds true for the descriptive interpretations of works displayed for sale in commercial galleries.

Donovan (1997) and Roberts (1997) claim that online exhibitions must evolve from object-centric collection management systems to context-capable content management systems. Further, Dietz (1999) stresses that objects “do not give up the richness of their history, context, and meaning easily.” To ensure that clients realise its meaning, Osborne believes that cultural organisations need to “wrap layers of interpretation” around “the bare fact of an object.” The same principle holds true, he believes, for information offered online in any organisation.

Although the emphasis in online exhibitions is gradually shifting from creating content to presenting a context for it, some researchers (Donovan, 1997; Roberts, 1997; Dietz, 1999) call for “a more compelling online experience” in accordance with the belief that, while “object-centredness” is necessary from a collections point of view, it is “not the best way” to engage the public online. Instead of leading with the object, cultural organisations should lead with “the story” (Dietz, 1999). Dietz (1999) further claims that cultural organisations should “tell engaging stories with objects woven through them... via entertaining, prescribed paths that...

The internet as a tool to stimulate interest in general collections or specific works of art does - and will continue to - change the way people access graphic and textual resources. Increasingly, the internet is creating a dynamic channel for collaboration amongst and between private, public and commercial entities (Fink, 1995). One example of this was a 1997 project shared between the British sculptor Sophie Ryder, Berkeley Square Gallery (which represents her), and The Carell Woodland Sculpture Trail (a department of the Cheekwood Botanical Garden & Museum of Art in Nashville, Tennessee, USA). Ryder was installed as artist-in-residence for a six week period at the Sculpture Trail during the summer of 1997, during which time she constructed a twenty foot long, thirty foot high wire sculpture, *Crawling Lady-Hare*, on the site where it was to remain. This sculpture is illustrated in Figure 7.1.

lead the user lightly by the hand and encourage curiosity, exploration and serendipity.” This approach, of animating the gallery experience and artworks with a narrative structure, is echoed by Appelbaum (1995).



Figure 7.1 – *Crawling Lady-Hare*, 1997. Sophie Ryder. Wire. Height: 120 in. Ref: W/97/3. Permanent Installation, The Carell Woodland Sculpture Trail, Cheekwood Botanical Garden & Museum of Art, Nashville, TN, USA.

The creation of this sculpture was recorded and projected by a live camera linked to a webpage on the Sophie Ryder section of the Berkeley Square Gallery website. The image of the sculpture being created was updated on the page every five minutes, 24 hours a day throughout the six-week period, to film a complete and readily accessible record of its creation. This was done with the intention of enabling a wider audience to witness the creation of a monumental sculpture, which is usually a closed experience. It was also hoped that the local community would thereby become more aware of and involved with their Sculpture Trail, a division of the first new Museum of Art built for some time in the American Deep South. The project thereby provided an opportunity for feedback from and between the public, enabling the Cheekwood Botanical Garden & Museum of Art to better ascertain the needs and wants and reactions of its existing and potential visitors. This information could then be used to formulate future exhibition strategies and education programmes.

One major benefit of having a website is the ability to impart a great deal more information and to display a greater number of artworks than is possible in the physical gallery space or in a brochure or a book. It is a major asset to a cultural organisation (large or small) that portions of a general description of a specific artwork can be linked to areas of related information, which can in turn be linked to other relevant artworks, collections and texts.

Osborne firmly believes that, commercial or otherwise, the most interesting websites have their strength beneath the surface – not in their graphic design, but in the information they hold. “The best-designed sites have a linear structure based on a list of items akin to the table of contents in a book. People still think that way. It works,” he insists. In this sense, Osborne feels that many website designs do not take into account either the essential properties or the potential of the medium, and many content features are introduced in electronic form in the same guise as their traditional printed versions, such as brochures (as multimedia is still heavily influenced by traditional one-dimensional editorial or graphic design layout concepts).⁹⁷ In retrospect, Osborne feels that although

⁹⁷ As was illustrated by Table 4.2 in Chapter 4, whereby although 73% of UK government services directed towards SMEs have some degree of electronic presence, in practice many of these are simply online equivalents of the paper-based services already available, and consequently offer insufficient additional value to users over their paper-based equivalents.

building a website involves focusing on the needs of both the audience and the organisation, evaluating a website and updating it are “too often” overlooked once a site has launched.⁹⁸ This belief, he admits, comes from “hard-earned experience.” Osborne feels that “the objective must be to entice visitors to return” to the site “repeatedly.” In his opinion, it is “essential to continually evaluate” how a site is being used, and to always be “adding something new” to it.

Many of the current issues and challenges (especially in relation to the internet) facing commercial galleries are identical to those facing large organisations, cultural or otherwise. Often, not a single webpage is completed without collaboration (if not co-operation) between different employees in an organisation, and such pages are being developed alongside traditional working procedures. Despite this universality, the internet remains – in the commercial art world at least – a relatively new medium, and in-house expectations regarding it are still “vague and unrealistic” in large and small cultural organisations alike. Indeed, despite the “undoubted benefits,” Osborne feels that some problems with accessing the internet remain “frustrating.” For example, the appearance of web pages can differ depending on the browser used (as each browser interprets the formatting codes slightly differently). Also, due to compression of file memory in order to speed up access and download times, the electronic digitised images that can be downloaded are rarely, if ever, equal to quality printed sources or to 35mm slides. Nonetheless, Osborne concedes that, especially for those with neither physical access nor extensive image resources in print or transparency formats, the internet and CD-Roms are “invaluable” resources.

Osborne feels that every new feature has the dual potential to attract people to a site, or else to drive them away. Wanting a site to be accessible to as many users as possible has “always been” Osborne’s goal, but the choice between wanting to be cutting-edge and wanting to serve a broad audience is difficult, as every appealing technology is exclusive on some level. As a consequence, frames, Java, Flash and plug-in dependency have all

⁹⁸ This view is in line with evidence presented in Chapter 3 and Appendices E and F (Sriram and Bannerjee, 1994; Murphy, 1996; Lawrence, 1997; Giaglis *et al.*, 1998; MacGregor *et al.*, 1998; Zimmerman and Mathiesen, 1998; Pollard and Hayne, 1998; Berg and Karttunen, 1998; Kalakota and Robinson, 1999; Ritchie *et al.*, 1999; St. Pierre *et al.*, 1999; Stauber, 2000; Bunker and MacGregor, 2000; Evans and Wurster, 2000; Tetteh and Burn, 2000; 2001; Lee, 2001; Porter, 2001; Sparkes and Thomas, 2001; Jeffcoate *et al.*, 2002; MacGregor *et al.*, 1998; 2004).

been either eliminated or pared down on the gallery's website since the initial launch. Osborne thinks that many discussions about "what technologies to use or exclude" are really "discussions about access," and that "being accessible" means as many people as possible can get the maximum benefit from the site, including access for visitors with old(er) equipment. Website designs for Berkeley Square Gallery, therefore, invariably wound up being heavily slanted towards increasing the site's accessibility, not least because most of the gallery's staff were viewing their own sites on small, old monitors with slow connections (until 1999, only one computer in the gallery had internet access) and old browser versions. (However, Osborne claims that this was because the gallery's staff were adamant that they did not wish, or need, to upgrade.)

The fear of "being left behind" prompts many organisations to accept offers of so-called "free" web pages from unsuitable portals. One such negative example in the experience of Berkeley Square Gallery was that of The Art Connection <www.art-connection.com>, which labelled itself "the world's most comprehensive online art database," and which for a time offered free web pages to public and commercial London galleries. Osborne is "sure" that it has proved to be common in many such cases that the motivations of both the organisations and the provider are "not thought through."⁹⁹

Osborne believes that websites will only prove successful if their "scope and relevance" is sustained, rather than add to "disorganised websites that are out of date and/or use differing fonts, grids and layouts, and present little information." He insists that his opinion is "borne of experience," and he is uncompromising in his view that a business' design and editorial style should be consistent across all aspects of its website, and that content should be kept "relevant and up-to-date."

7.2.3 Networks and Alliances

⁹⁹ For a time, The Art Connection claimed to represent the Society of London Art Dealers (SLAD). However, at its peak in 1998, only 33 of the 94 SLAD members featured on The Art Connection portal. Of these 33, 26 had only a single token web page. Of these 26, six had no images and no links, while twelve had one image and no links, four had one image and one link, two had two images and one link, and two served purely as links to their own separately-administered websites. Further, several of the pages had links that didn't work, and six of the SLAD member galleries had their names incorrectly spelt in The Art Connection's search facility.

Osborne adamantly believes that SLAD should have established from the outset what it now has in place: a website representative of its member galleries, including an illustrated catalogue of works from each, with exhibitions and display information, a full events programme, details of future plans, links and e-mail facilities.

Although Osborne does not consider memberships of professional organisations to constitute networking,¹⁰⁰ he admitted that the gallery “has always been” a member of The International Fine Print Dealers Association (IFPDA) and The Society of London Art Dealers (SLAD). Indeed, Osborne is Deputy Chairman of SLAD.

The IFPDA, based in New York, is a non-profit organisation dedicated to “ensuring the highest ethical standards and quality” among fine print dealers, and to “promoting greater appreciation of fine prints among art collectors and the general public.”

SLAD was established in 1932 to “promote and protect the good name and interests of the art trade,” and to “enhance public confidence in responsible fine art dealing.” SLAD has approximately 100 members, all of whom have signed an undertaking to “observe high standards of fair and honest dealing.” SLAD membership, while open to firms throughout the UK engaged in the trade of the visual arts, is restricted to companies “invited and vetted” by the Executive Committee.

SLAD represents the interests of its members in discussions with the government and other professional bodies on issues concerning the art trade. These issues generally cover topics such as *Droit de Suite*,¹⁰¹ VAT legislation and regulations concerning the import and

¹⁰⁰ The nature and extent of SME owner/managers engaging in formal and informal networking are described in Chapter 2 (Lei and Slocum, 1992; Möller, 1992; Golden and Dollinger, 1993; Gibb, 1993; Grönroos, 1994; Ozcan, 1995; Webster, 1995; Mowery *et al.*, 1996; Raymond and Bergeron, 1996; Rosenfeld, 1996; Auger and Gallagher, 1997; Gummesson, 1997; Dean *et al.*, 1997; Gimeno *et al.*, 1997; Tikkanen, 1998; Achrol and Kotler, 1999; Jeal and Wroe, 1999; Keeble *et al.*, 1999; Miles *et al.*, 1999; Dennis, 2000; Overby and Min, 2000; 2001; Engsbo *et al.*, 2001; Premaratne, 2001; O'Donnell *et al.*, 2001; Bar Nir and Smith, 2002).

¹⁰¹ The *Droit de Suite* aims to provide artists with a share of the revenue from sales of their work after the initial sale of that work to a dealer or other buyer. It is independent of *droit moral* - moral rights schemes - that are based on respect for the artist's creativity. The resale right provides that visual artists (or their estates) receive a royalty on the resale of artworks. That royalty is usually between 3% to 5% of the price of the work, with individual payments being made to copyright collecting societies on behalf of the artists. Some nations require galleries and dealers to pay 1% of their turnover into a special fund, while others base the royalty on the seller's profit rather than on the price of the work. The *droit* relates to public rather than private sales (eg. by dealers and auction houses rather than directly between private individuals), and only covers work above a specific (re)sale value.

The *droit* is concerned with the resale of physical entities (eg. canvas, a sculpture, a work on paper), and is independent of reproduction rights (ie. the artist's licensing of intellectual property for use in posters, books etc). Typically, artists sell the canvas, pigment or paper - the embodiment of their creativity - but retain the intellectual property. The *droit* allows artists (or their estates) to obtain a percentage of the price of the artwork when the embodiment is resold, sharing in the increase in value of the work over time.

export of artworks. SLAD also publishes a quarterly newsletter, a directory of members, and information sheets on “topics of essential interest to the art trade.”

SLAD is a founder member of the British Art Market Federation (BAMF), which was established in 1996 to represent the interests of the art trade as a whole in discussion with the government and other bodies. The Society co-operates closely with The British Antique Dealer’s Association (BADA) and the Association of Art and Antique Dealers (LAPADA). SLAD is also a member of the Confédération Internationale des Négociants en Oeuvres d’Art (CINOA) and the Federation of European Art Galleries (FEAG).

In addition, Berkeley Square Gallery “shows at many of the world’s best art fairs,” and exhibits annually at the *20/21 British Art Fair* and *The London Original Print Fair* at the Royal Academy of Arts.¹⁰²

7.2.4 Perspectives on Government Policies and Initiatives

Osborne is Deputy Chairman of SLAD, which represents the interests of art traders as a whole in discussion with the government and other bodies. Despite this exposure and experience, he claims to have been “completely oblivious” to SME-specific government initiatives, policies and programmes before and during this research.¹⁰³

When the researcher suggested to Osborne that perhaps funds from a part of one (apparently invisible) government initiative could be spend on conducting either a workshop or series of workshops, from which more in-depth information could be generated from a number of SME owner/managers, he wholeheartedly agreed that such a workshop/series of workshops would (likely) place SME owner/managers in an arena

The *droit* lasts while a work is in copyright. It has been strongly opposed by UK galleries and auction houses on economic grounds, as they claim that it disadvantages artists by discouraging sales, on philosophical grounds as a social welfare measure unrelated to copyright, and on operational grounds as difficult to administer.

¹⁰² The benefits of SMEs engaging in formal and informal networking are comprehensively discussed in Chapter 2 (Lei and Slocum, 1992; Möller, 1992; Golden and Dollinger, 1993; Gibb, 1993; Grönroos, 1994; Ozcan, 1995; Webster, 1995; Mowery *et al.*, 1996; Raymond and Bergeron, 1996; Rosenfeld, 1996; Auger and Gallagher, 1997; Gummesson, 1997; Dean *et al.*, 1997; Gimeno *et al.*, 1997; Tikkanen, 1998; Achrol and Kotler, 1999; Jeal and Wroe, 1999; Keeble *et al.*, 1999; Miles *et al.*, 1999; Dennis, 2000; Overby and Min, 2000; 2001; Engsbo *et al.*, 2001; Premaratne, 2001; O'Donnell *et al.*, 2001; Bar Nir and Smith, 2002).

¹⁰³ This issue is addressed in some detail in Chapter 4.

where they would be able to discuss the issues that concerned them in a more detailed and participative manner than has previously been possible. As a result of the information that might come to light from such workshops, Osborne felt “absolutely sure” that policy makers would likely be better informed, and therefore better equipped, to meet the needs of SMEs than they currently are.

In a discussion with Osborne about what would encourage him to donate his time and/or other resources to participate with the policy makers who want to serve his business, in order to generate more visible, appropriate and accessible policy initiatives for the benefit of his business and/or industry, his answer was brief but emphatic: “money.”

7.2.5 Into the Future

Osborne is convinced that the internet has provided “unprecedented opportunities” for commercial cultural organisations to “shape their own destiny.” However, in order to harness these opportunities, Osborne feels that these organisations need to make the decision “to look beyond single short-term online projects.” The internet and online databases offer the potential of changing not only the nature of the relationship within and between (for example) a commercial gallery and its clients, but also the very way in which such a gallery sees itself, sets its agenda, and operates. Cultural organisations, public and commercial, have undoubtedly begun to make themselves more popular and/or accessible. Those with the power and the vision to put in place the initiatives to achieve the potential of new technologies in shaping the future of cultural organisations need to also exercise the persuasive skills that will undoubtedly be necessary to inspire what Osborne labels their “reticent peers” to proceed in positive e-business directions.

Osborne sees the biggest challenges to SMEs adopting and implementing e-business as:

- Establishing a brand name, as it is a “very powerful competitive advantage.”
- Determining a viable business model for the whole organisation.
- Ascertaining the “value driver” for customers from the internet site (ie. personalised welcome, customer recommendations) and the source of competitive advantage.

- Keeping the website “fresh and different” and “continually working out how to do it better.” He admits, however that this takes “a lot of time and money.”
- Being prepared to continually invest in innovation.
- Managing the pace of change.
- “Perfecting” back-office order fulfilment.

7.2.6 Postscript

In July 2004, Berkeley Square Gallery merged with Sclar Fine Art. The two companies had collaborated extensively over the previous five years, principally on annual Modern British exhibitions. Osborne Samuel LLP is the successor company. The two directors are Peter Osborne, who started Berkeley Square Gallery in 1988, and Gordon Samuel, who directed Sclar Fine Art for five years and had previously been director of the Mercury and Redfern galleries.

Having examined Berkeley Square Gallery’s experience of adopting and implementing e-business, we turn now to Davis & Co., the second of the three in-depth UK SME case studies.

7.3 IN-DEPTH CASE STUDY – DAVIS & CO.

Davis & Co. <www.davisco.net> is a London law firm that has been using “teleworking, contingent working and lean management” since 1993, in conjunction with an online workflow extranet for legal services. Davis & Co. has no central office. Nor does it have a set number of lawyers in a traditional partnership. Instead, the firm leases a Regus office in the City for central calls and meetings, and the firm is structured as a teleworking operation that draws on the availability of approximately 40 solo practitioners as and when they are needed. “We don’t want to manage offices,” says Christopher Davis, the firm’s founder. “We want to practice law.” Davis himself works from an office in his home in Hampstead, which bulges with computer gadgetry.

Consultants at Davis & Co. necessarily rely heavily on technology to share information. “Instead of walking down the hall to a colleague’s office, they will use their phone, e-mail,

intranet(s) and extranet(s) to communicate,” states Davis. The firm’s consultants and clients use a database of the documents of a case that all involved parties can access, and are linked by a secure e-mail system, audio and conferencing facilities, fax, voicemail and phone. While most other lawyers in the City “are slaving away at their desks,” Davis insists he’s “cracked it.” Davis claims that, “if you have a laptop and a mobile phone, you can work from wherever you are in the world – as long as you have clients willing to play cyber-law.”¹⁰⁴ The firm’s clients range from “small businesses to multi-national corporate groups.” He is proud of the firm’s “rapid response” and “fast turnaround,” and exudes enthusiasm when noting that the firm is involved in projects in the UK, Eastern Europe, Malaysia, Australia, and New Zealand.

By operating this model, the firm is able to avoid many of the “usual high costs” associated with traditional law firms. The resulting savings are estimated by Davis to be as high as 17% of turnover per annum. Davis claims that these savings are passed directly onto clients, “with no service quality compromise.” Because overheads are low, the firm is able to charge clients £200-£300 per hour, compared to the £500-£600 charged by major City firms.¹⁰⁵

Due diligence for international mergers and acquisitions (M&A) transactions is the firm’s specialty. Although Davis & Co. has a particular strategic focus on ICTs and international M&A, the firm also advises on a wide range of other areas.¹⁰⁶ The due diligence exercise

¹⁰⁴ The benefits of working more flexibly as a result of e-business adoption and implementation are explored in Chapters 2 and 3 and are recounted in Appendices A, B and C, in line with the findings of a number of researchers (who include: Sterne, 1996; Guthrie and Austin, 1996; Auger and Gallagher, 1997; Ghosh, 1998; Currie, 1998; Watson, *et al.*, 1998; Evans and Wurster, 1999; Fraser *et al.*, 2000; Timmers, 2000; Vescovi, 2000; Poon and Joseph, 2000; 2001; Reimenschneider and Mykytyn, 2000; Porter, 2001; Rayport and Jaworski, 2001).

¹⁰⁵ The dual benefits of reduced costs and increased efficiency arising as a result of adopting and implementing e-business are explored in Chapters 2 and 3 and in Appendices A and C, in line with the findings of a number of researchers (who include: Raymond and Bergeron, 1996; Abell and Limm, 1996; Angehrn, 1997; Auger and Gallagher, 1997; Coccia, 1997; Kalakota and Whinston, 1997; Poon and Swatman, 1997a; 1997b; 1997c; Shapiro and Varian, 1998; Berg and Karttunen, 1998; Radstaak and Ketelaar, 1998; Gullledge and Sommer, 1998; Currie, 1998; APEC, 1999; Hawkins and Prencipe, 2000; Turban *et al.*, 2000; Reimenschneider and Mykytyn, 2000; Kaplan and Sawhney, 2000; Poon and Joseph, 2000; 2001; Raymond, 2001; Porter, 2001; Martin, 2001; Europmedia, 2001; Howarth, 2002; Quayle, 2002a; 2002b; DTI, 2002a; 2002b; 2002c).

¹⁰⁶ These areas of legal advice include: banking law, commercial law, competition/anti-trust law, compliance, computer/internet law, corporate law, corporate finance, data protection, due diligence, environmental law and risk management, health and safety, insolvency, insurance, intellectual property, international law, legal

can uncover risks that enable the purchaser to negotiate down an acquisition price. “It is key to any M&A deal, and can bring in a hefty fee,” insists Davis. “I thought ‘this is a very good line of business. What other work produces half a million pounds in two months?’,” he says.

Davis “ensures” that his firm “doesn’t just take account” of legal issues, but also that it takes “a wider perspective.” Due to the firm’s experience of “establishing new e-ventures” including “funding, acquiring internet companies, and advising on launching online operations,” it has established “a track record.” Davis describes the firm as “an e-strategic adviser to governments, professional firms and large businesses around the world.” He claims that “although all businesses depend on IT, many businesses still find computers baffling, and buying equipment and services tends to be fraught with legal problems as well as being expensive. That’s where we come in.” Davis declares that, in addition to the firm’s know-how in computer-related aspects of intellectual property (IP) law,” the firm is “well-versed in legal IT matters,” as its “distinctive application” of IT to legal practice demonstrates. He also claims that the firm has “a proven track record of dealing with computer contracts of all kinds, both for customers and for suppliers,” and that the organisation is “well qualified to assist in resolving disputes in this area.”¹⁰⁷

If any member of the team brings in a deal that needs staffing, Davis & Co. provides other lawyers to assist. The philosophy is that, as the consultants have such a flexible lifestyle, they will be happy to work on the occasional project that requires a concentrated effort and thus long hours. But much of the time, the arrangement enables them to pursue other interests such as teaching, writing and time with their families. “These are people with an entrepreneurial spirit, who are sick of corporate law firms,” Davis says. Peter Groves, for example, worked formerly with Manches, Pritchard Englefield and the CBI, and currently writes and lectures on IP and IT law as well as heading Davis & Co.’s IP cases.

“The absence of a partnership structure and an acceptance from the beginning that staff are doing other things means that careers are not damaged,” as they would likely be in

business risk assessments, litigation, local government, marine law, planning law, professional negligence, property issues, regulatory issues, reinsurance, taxation and trusts.

¹⁰⁷ This is not in line with the usual experience of SMEs, according to the findings of research presented in Chapters 2 and 3.

big law firms “which tend to have a culture where you must give 110%.” From Davis’s point of view, it also means that specialists can be called on as and when they are needed. “Why would we need a specialist on staff full-time when we could have him or her on call?” he asks. Davis compares the structure of the firm to “a spiral: near the middle are lawyers with their own specialist practices who need to call on the services of other experts, while at the outer end are people, such as data protection specialists, who are used only occasionally.”

Born in New Zealand, and qualified in both Australia and the UK, Davis started his career at NZI Life, the largest life insurance company in New Zealand. He worked his way up to become company secretary. In his late twenties, he moved to a small conglomerate called The Owens Group. There, he worked with “an entrepreneurial owner who was always buying and selling companies.” From these jobs, Davis developed skills in “risk assessment for purchasers involved in international M&A.” In 1989, at the age of 30, Davis moved to England to work for McKenna & Co. (now Cameron McKenna) as head of its specialist due diligence department. After two years, Davis decided that “life in an established law firm wasn’t for” him. The culture of a law firm is very different to working in-house, and he “was used to a corporate environment with a central strategy that the entire organisation would push towards.” He left to become the head lawyer at the insurance group GFA, doing work for the UK mortgage lenders Eagle Star and Abbey National, advising them on their indemnity policies and disputes with mortgage indemnity insurers.

In 1993, he launched Davis & Co. “When I started, it was just me, but I wanted to be a full-service law firm,” Davis says. “The only question was how to do that without a large capital expenditure?” Consequently, Davis formed a “virtual” law firm. He explains that “the concept was that we would have relationships with specialist lawyers who were practicing on their own or in very small practices.” When he first worked at McKenna & Co. as head of due diligence, Davis found it frustrating that accountants and lawyers conducted separate investigations instead of sharing relevant information. Accordingly, he designed online extranet deal rooms for Davis & Co. He proudly claims that he “pushed the deal room idea to clients six years before Allen & Overy got round to it.”

Davis & Co. has won a number of awards, including the 1997 BT Work Smarter Award (a national award for the best use of IT in business) and the 1998 Hifal/Lawyer Awards Bronze Award (for the Best Use of IT). The firm was a finalist in the 1998 Legal Business Awards (for the Most Entrepreneurial Law Firm) and in the 1997 Hifal/Lawyer Awards (for the Best Use of IT).

7.3.1 Key e-Business Adoption Drivers

Davis “capitalised on the explosion of sole practitioners,” which was a growing trend throughout the 1990s.¹⁰⁸ He found that there were “a lot” of lawyers who had worked at large City firms who had left to work on a more flexible basis. Although many traditional law firms are adding teleworking to their existing structure, “there is often so much conflict between work and personal life that people are just falling out of the profession,” claims Davis. “We wanted to take advantage of this portfolio-working movement,” says Davis. “Some of them might have had one client; others worked as consultants to law firms for a while. They were all looking for an environment where you don’t have to travel to an office, where you can work when it suits you, and you can pursue other interests and activities,” he says. Davis is sure that in the future there will be a greater shift to a “contingent work force with a portfolio of jobs.”

Originally, Davis built up a team to work on deals from the clients he was advising on credit risk insurance. “But increasingly, we asked people to bring us their client following. In return we provide them with an umbrella that looks after the bureaucratic regulatory requirements, such as professional indemnity and accounting,” he says.

Davis, from the outset, adopted the view that his firm’s “highly skilled personnel” should be able to “use time in the most effective way possible.” Although the firm conducts a traditional one-to-one service for its clients, its consultants “conduct business whenever and wherever they need to without having to travel to a set place each day – they are free to operate as required, and to be linked with each other and their clients electronically.” Davis claims that “people can operate from anywhere through online and networked systems.” He believes that the days of “simply providing answers only to legal questions”

¹⁰⁸ In 2000, 41.7% of all law firms were sole practices, while a further 41.5% were practices of two to four partners (The Law Society, 2000).

are numbered. Accordingly, the firm “couples traditional one-to-one legal advice with online legal system solutions,” according to Davis. “We not only manage our clients’ legal affairs, but also offer intelligent solutions for integrating the management of legal issues into working practices.” Wherever possible, the firm’s approach is to “build legal processes, documentation and guidance systems into a client organisation’s operations” in order to “ensure consistency and reduce risk.” In Davis’ experience, leading corporations find it necessary to have one unified communications system that “encapsulates their workflow and enables them to link to their external partners and clients.”

“Through internet and extranet facilities,” Davis claims, “everyone can operate on a common IT platform, sharing knowledge with colleagues outside an organisation.” Convinced that “new business paradigms are emerging,” the model for Davis & Co.’s business services is founded on the premise that, as organisations around the world move to a central operating platform, legal management can – and should – be integrated into that platform, in much the same way as financial management often is. In order to provide many of these services, Davis & Co. operates in partnership with Lexfutura, a “global source for intelligent systems and strategic leadership in the law,” according to Davis. Together, the two organisations give advice on building websites that will offer these services to smaller law firms that can’t compete with huge legal firms like Linklaters and Allen & Overy, which are able to “spend millions.” Davis & Co.’s architecture is provided by Martindale-Hubbell, the online legal directory.

In 2000, Davis & Co. also formed an alliance with Globalhelm, an e-solutions provider. The two organisations work in close association to develop strategies and to provide solutions in the areas of e-business, knowledge management and IT. “Strategic advice on business models for developing products online is scarce,” says Davis.¹⁰⁹ Together, they advise large companies on solutions to developing e-business and on integrating legal systems into workflow processes.

7.3.2 Development and Operational Issues

Davis & Co. has managed the due diligence on deals as large as the £1.1bn purchase of

¹⁰⁹ This is in line with findings presented in Chapter 3.

Citibank loans by Britannia Building Society, where lawyers and the company's directors were linked by a secure e-mail system, an online update of the work, audio and conferencing facilities, fax, and voicemail. "Christopher pulled together a first-class team, just as any other senior or managing partner would do, to enable us to work through, negotiate and prepare a morass of documents," claims Craig Weir (currently at KPMG and formerly controller of mortgage insurance and customer services at Britannia). "Because there were groups of lawyers employed by the vendor and also by ourselves, it would have been impossible to consistently meet up at one site. I needed someone flexible enough to go wherever they were needed, whenever they were needed. Davis set up a project facility at short notice, and it worked as well as any legal firm I have ever worked with," Weir insists.

More recently, Davis & Co. was hired by a major law firm that needed to assemble a due diligence team beyond its resources in a short period of time. "We were approached on a Friday afternoon at 5pm by a large law firm in London that was advising a client buying an e-commerce business," Davis recalls. "They were looking for assistance, and wanted to outsource the specialised e-commerce due diligence to us. I was able to pull together an experienced team of ten lawyers that evening. It's basically a matter of building an *ad hoc* team. In any other law firm, you build those teams with people you don't know from within a pool of people who have been centrally vetted. We do it exactly the same way." In practice, the idea is that the client doesn't know the difference. "We operate with clients as a law firm," says Davis. "To them, our internal machinery is pretty much invisible. They call a central office and get put through to a lawyer who is presented as a representative of the firm, just as they would with any other law firm."

Flexible working utilising internet and mobile technologies can radically transform the way companies operate, providing more freedom and greater job satisfaction among staff, reducing overheads, and boosting individual and company performance. "Flexible working has worked for us. Period," states Davis emphatically.¹¹⁰

¹¹⁰ While technology is the enabler, flexible working is really about evaluating working practices in the light of these technologies, and changing those practices to gain advantage. Flexible working with internet and mobile technologies enables people to work from home or at any other location while remaining in touch with customers and colleagues via technology, such as WAP, messaging services, voiceover IP and internet-enabled call centres, a laptop and mobile phone. Organisations are increasingly turning to flexible working to cut overheads and to meet the demands of an increasingly mobile workforce (Teleworking Association, 2000).

But the virtual system has its drawbacks, one of which is the inability to leverage assistants. Under Law Society rules, any solicitor qualified for three years or less must work in a law office that is open to the public for the purposes of supervision. Davis & Co. “gets around” this rule by only employing senior lawyers.

Having decided to incorporate an open architecture, Davis recognised that in order for the firm’s lawyers to have the specialist knowledge its clients require, they would all need to be working at partner level. Davis boasts that in this way, clients receive “high-quality advice.” Many Davis & Co. lawyers have held senior management positions in commerce and industry, which enables them to offer “a commercial view alongside a legal one,” and to thereby provide “a more comprehensive, concise and focused level of service.” Davis is adamant that the firm brings not only experience, but also “highly specialised niche market knowledge.”

When asked how he controls quality, Davis responds that “it’s all in the recruitment, in the selection. Ideally, the lawyers come from a large City firm, with a lot of experience. That’s the key to it.” But without any central performance review, he acknowledges that it is “not easy” to monitor the quality of work being performed. Another disadvantage of the virtual-only method is that there is no on-the-job training. Furthermore, since the lawyers don’t know each other (personally) very well, it can prove difficult to develop institutional loyalty. “I worked very closely with another corporate lawyer on a deal for a biotech start-up client, and I’ve still never met him,” recalls Groves.

Another disadvantage of flexible working is the lack of a collegiate atmosphere, where information and evaluations are exchanged constantly. “Obviously you’re losing *esprit de corps* and communication if you’re in a different room,” says Davis. “The question is, when people are in a mobile working situation, how do you acquire that?” Davis tries to

Introduced correctly and with the appropriate technology, flexible working can increase flexibility and reduce stress. Teleworking can enable employees to work more flexibly and effectively, and companies typically achieve increases in individual productivity. Additional benefits can include lower office and travel overheads, higher morale and increased productivity. A survey of NatWest Bank managers found a 20% increase in productivity on the days when they were teleworking (Teleworking Association, 2000).

However, there is a risk with flexible working that people may end up working longer hours, become more stressed, and feel cut off from their colleagues. Some people prefer the social hub of an office and are unsuited to working from home – it is simply not the way they want – or are able – to work. Flexible working should therefore be introduced in a systematic and culturally sensitive way if it is to be effective (Teleworking Association, 2000).

overcome this by greater use of the phone, e-mails, bulletin boards and by providing forums for specialists. This constant use of technology “keeps the lawyers up to speed” for the extranets that Davis & Co. uses in its project management of multi-jurisdictional acquisitions. This is “a big competitive advantage” in a profession that is still “paddling only at the shallowest edge of modern technology,” claims Davis. That said, however, few M&A partners “in the big City firms” would “feel comfortable getting involved in the business side of an acquisition if it was done by computer,” according to Davis.

Davis & Co. is an incorporated business, not a traditional legal partnership. In keeping with the firm’s incorporation, Davis is the Chief Executive, not a senior partner. He is adamant that being a company “is more than cosmetic. The person who brings in a job will receive 10% of the fee,” says Davis. “Those who work on the matter typically receive 65% of the time charged, and the firm receives the remaining 25%,” he claims. “That essentially means that the profit margin is 75%. Therefore, we can remunerate personnel in a different way. If a trainee brings work into a traditional firm, the partner gets all the benefit. We can give a bonus in the same way a company can. More importantly, we can accurately measure and reward input,” he states.

Davis claims that the firm’s improvements in “managing the transaction process” have resulted in “quantifiable bottom-line benefits.” For example, as a result of the firm’s “more effective due diligence process,” he believes that the integration of the target goals with business practices “combine to increase the long-term success of each transaction.” These benefits are presented in Table 7.1.

Traditional Approach	Davis & Co.’s Approach	Benefits of Davis & Co.’s Approach
<ul style="list-style-type: none"> Documents from Target are kept in paper form, with limited circulation between teams/team members. 	<ul style="list-style-type: none"> All documents collected from Target are scanned into a central computer and made available in an Electronic Deal Room to all due diligence advisers, internal personnel and the negotiation team. Information requested from the Seller is tracked on an ongoing basis and gaps in documentation are routinely rectified. 	<ul style="list-style-type: none"> The Buyer’s teams all work from the same information base, improving their analysis. Documentation can be accessed from anywhere in the world as soon as it is obtained from Target. Documents are portable, and available for reference in negotiation meetings or for reading while traveling.

Traditional Approach	Davis & Co.'s Approach	Benefits of Davis & Co.'s Approach
<ul style="list-style-type: none"> • Little, if any, on-line communication. 	<ul style="list-style-type: none"> • Establishment of an Electronic Deal Room to which the Buyer's due diligence advisers, internal personnel and the negotiation team are all connected. 	<ul style="list-style-type: none"> • Buyer's project manager can co-ordinate all the teams more effectively, by publishing tasks and timeframes daily online. • Due diligence teams can communicate spontaneously and simultaneously wherever they are located - this is particularly beneficial for international transactions.
<ul style="list-style-type: none"> • Due diligence exercise is often undertaken as an administrative chore. 	<ul style="list-style-type: none"> • Due diligence is viewed as a strategic operation, driven by clearly defined objectives. • Ascertains whether the Buyer simply seeks protection against acquiring hidden problems, or if there is also an agenda to reduce the purchase price through active investigation. 	<ul style="list-style-type: none"> • From the outset, the Buyer defines the depth of the process and negotiates a purchase that reflects the desired terms and attitude to risk.
<ul style="list-style-type: none"> • Due diligence is mainly handled by junior lawyers and trainees. 	<ul style="list-style-type: none"> • Due diligence is handled by experienced and specialised senior lawyers, at similar rates to the more junior staff often assigned by other firms. 	<ul style="list-style-type: none"> • In-depth analysis, employing the experience and intuition of senior lawyers.
<ul style="list-style-type: none"> • Lawyers rely on submitting written questions to Target and receiving written responses prepared by Seller's lawyers. 	<ul style="list-style-type: none"> • Target personnel are interviewed face-to-face and documentation is collected in personal meetings. 	<ul style="list-style-type: none"> • Higher quality data can be more speedily obtained.
<ul style="list-style-type: none"> • Minimal collaboration with Buyer's external advisers and internal due diligence teams. 	<ul style="list-style-type: none"> • The investigation is dovetailed with all advisers and due diligence teams. 	<ul style="list-style-type: none"> • Avoids gaps and overlaps between different team members and/or teams. • Information staying between teams improves the overall analysis, reduces time frames and increases cost efficiency.
<ul style="list-style-type: none"> • Limited development of the due diligence process, which is seen as "an art rather than a science." 	<ul style="list-style-type: none"> • Dedicated due diligence department. 	<ul style="list-style-type: none"> • Buyer's negotiation team is supplied with commercially focused facts, with recommendations on concessions to be sought in problem areas.

Table 7.1 – The benefits of Davis & Co.'s approach

Davis & Co. integrates workflow processes onto single platforms, thereby marrying its legal knowledge with technology. The firm does this by:

- Integrating the management of legal issues into a client's existing automated workflow systems.
- Providing workflow platforms for legal activities.
- Delivering information to clients through these systems.

These systems are supported and complimented with “one-on-one” legal advice. The firm's method of legal guidance delivery is illustrated in Figure 7.2.

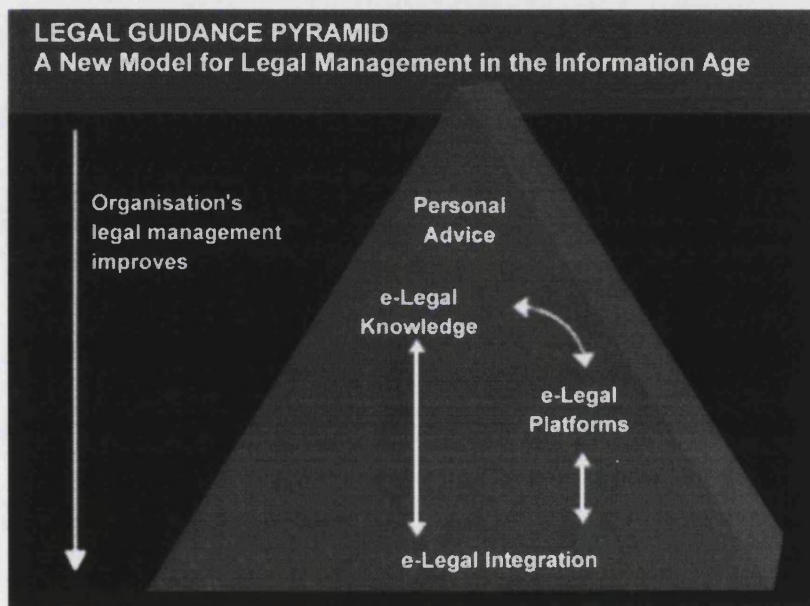


Figure 7.2 – Davis & Co.'s method of legal guidance delivery

The traditional method of providing legal advice in “one-on-one” meetings is important “where analysis beyond the capabilities of systems is required,” according to Davis. However, in other cases it can prove to be an expensive and inefficient method of delivering legal guidance to larger operations. Systems can be developed that provide legal guidance to everyone involved within an organisation who has access to a computer screen, whether or not they are located inside the organisation's premises. This ensures thoroughness and consistency in managing legal risks and in optimising an organisation's legal affairs. Where “one-on-one” advice is provided, Davis & Co. aims to improve the

“efficiency and effectiveness of the interface” with their client(s) and other advisers through the use of an “e-clientroom.” The firm seeks to assist its clients to integrate their ICT systems to provide one single workflow process. These systems are increasingly being linked to their suppliers, customers and other business partners. Other functions (such as procurement, finance and sales, production and legal issues) can be built into this process, which enables:

- The legal relations created in every transaction to be checked for acceptability, documented, agreed and stored for future analysis and follow-up.
- Compliance with regulatory requirements to be automated (where possible) and drawn to the attention of personnel in the course of their work.
- Assets to be protected (ie. intellectual capital such as software programmes, brand names and trade secrets).
- Knowledge of legal aspects to be captured, stored and published for sharing.
- Risks such as fraud and negligence to be managed.

Davis & Co. applies its combination of legal knowledge and leading edge technology to build the management of legal issues into workflow processes. For those activities that require a high degree of legal involvement, it may be necessary to develop a workflow platform for that activity. These platforms enable the firm’s lawyers, their in-house clients and other advisors to work under the same “virtual” roof irrespective of their location. However, according to Davis, most of these systems “are like empty offices, with no personnel or information to guide them.” The legal workflow platform employed by the firm includes guidance and information, delivered on a personalised basis within the context of each individual’s activities and with relevance to their experience. The features of the firm’s legal workflow platforms include:

- Case management (including tracking and status reporting).
- Task management.
- Electronic bulletin boards (where information can be posted for other team members to read discussion forums, enabling spontaneous communication between team members despite their geographical separation).
- Document management.

- Online storage and retrieval of files or e-archives.
- Internet-based legal document drafting.
- Search facilities.

Davis & Co. offers the option of legal workflow platforms to be hosted either on the firm's server, on the client's server, or by a third party. These workflow platforms provide improved co-ordination of, and collaboration with, clients and external advisers. They also enable all parties to share the same data, information and knowledge, while the guidance built into the system "ensures a consistent approach."

Within the systems Davis & Co. provides, a range of content can be made available to clients, including:

- Legal guidance from established textbooks.
- Document precedents.
- On-line databases containing information on a wide range of topics including legal, economic, political and financial matters.

Whenever a legal matter arises, advice, correspondence and documentation will be generated. The associated activities are recorded for access by those involved in the case. Other relevant information (such as a rolling record of time charged by advisers) is also made available. When an organisation prepares the same type of document regularly, the efficiencies and effectiveness of this process can be improved greatly by the use of this kind of document assembly, whereby the document drafting process is automated (examples include employment documentation and bank loan documentation). Initially, each standard template is loaded with the knowledge of the author. These templates are supplemented as time goes on by users who publish additional information and permutations, usually via a mediator. In this way, organisational knowledge is captured within the documentation system, rather than being lost when personnel leave the organisation.¹¹¹ The firm generates or acquires this data in association with its partners, and then connects it to either the client's existing systems, to the legal workflow platform,

¹¹¹ This recognition of the value of organisational knowledge retention is line with findings presented in Chapter 3 and echoes the (hard-earned) experience of the previously detailed case organisation, Berkeley Square Gallery.

or to the “e-client room.”

Davis believes that “the only way” organisations can build and sustain competitive advantage is by creating knowledge “more rapidly” than their competitors do. He is adamant that the creation of knowledge “depends upon” organisational learning, and that the organisations that learn more rapidly than others do so “on the basis of their learning context or social architecture, their structure and their infrastructure.” He stresses that, whereas the 1990s “saw the rise of benchmarking” as a process through which organisational performance could be improved, it is now clear that “improvement through imitation does not deliver competitive edge.”¹¹² Davis believes that superior performance can only arise through unique knowledge that depends on the development of a social architecture, structure and infrastructure unique to that organisation. Accordingly, Davis & Co. develops a strategy and provides a solution that is unique to each client and “precisely fits” their requirements.¹¹³

Whilst the technical aspects of knowledge creation are important, Davis feels that the socio-technological perspective is a key component for the successful development of an organisation’s learning ability.¹¹⁴ Recognising the importance of human and organisational factors, Davis & Co. provides “an integrated approach” to diagnose each client organisation’s learning capacity, and to design an organisational transformation process to effectively deliver knowledge creation and organisational learning. This, according to Davis, creates “superior performance through innovation,” and delivers competitive advantage through innovation and transformation rather than providing “minor performance improvements through an imitation of best practice.” Davis & Co.’s typical approach in this area involves:

- *Organisational diagnosis* – understanding the client organisation’s competitive position, knowledge assets and capacity for knowledge creation, and identifying

¹¹² Research on the strategic importance of knowledge creation and retention is presented in Chapter 3. The desire to retain knowledge is recounted as a primary driver to e-business adoption in Appendices A and C.

¹¹³ The ability of being able to “personalise” and uniquely target products and services to potential and existing clients as a competitive driver of benefits arising from e-business adoption and implementation is presented in Chapter 3 and Appendix A.

¹¹⁴ Knowledge has been shown to be a primary source of competitive advantage. Findings on developing organisational learning ability are presented in Chapter 3.

the key performance drivers required to achieve the organisation's goals.

- *Developing the organisational learning context* – identifying and developing the organisational and human resource developments required in terms of social architecture, structure, infrastructure, and development interventions so as to transform organisational learning and the rate of knowledge creation within the client organisation.

Yet Davis considers that the firm's "biggest problem" is that, while it has established a flair for the cost-saving uses of technology, its clients don't yet fully appreciate or capitalise on them. Davis claims that in-house lawyers and managers persistently identify managing masses of disclosed documents as a problem. In order to combat this, wherever it is appropriate to do so, the firm scans disclosed documents onto disk instead of circulating them in paper bundles. In Davis' experience, this makes the material easier to find and to handle by in-house personnel and advisers, as well as making it portable for referencing at meetings or whilst traveling. For international transactions, disclosed documents are also available on-line, thereby avoiding the delays of international deliveries.

7.3.3 Networks and Alliances

Davis is a regular contributor to the journals *International Company*, *Commercial Law Review* and *Company Lawyer*. He sits on the boards of *Amicus Curiae* (the journal of the Institute of Advanced Legal Studies) and the CLT journal *Due Diligence*. He is also a member of the Technical Committee on Law and Technology for the International Association of Science and Technology for Development (IASTD).

Davis recognises and freely admits that his firm "could not exist" without its formal and informal networks and alliances.¹¹⁵ Indeed, the firm's services are delivered in partnership with Martindale-Hubbell, Globalhelm and Lexfutura. And (as has been explained) Davis

¹¹⁵ The benefits of SMEs engaging in formal and informal networking are discussed in Chapter 2 (Lei and Slocum, 1992; Möller, 1992; Golden and Dollinger, 1993; Gibb, 1993; Grönroos, 1994; Ozcan, 1995; Webster, 1995; Mowery *et al.*, 1996; Raymond and Bergeron, 1996; Rosenfeld, 1996; Auger and Gallagher, 1997; Gummesson, 1997; Dean *et al.*, 1997; Gimeno *et al.*, 1997; Tikkanen, 1998; Achrol and Kotler, 1999; Jeal and Wroe, 1999; Keeble *et al.*, 1999; Miles *et al.*, 1999; Dennis, 2000; Overby and Min, 2000; 2001; Engsbo *et al.*, 2001; Premaratne, 2001; O'Donnell *et al.*, 2001; Bar Nir and Smith, 2002).

founded the firm by developing relationships with specialist lawyers who were working either on their own or in very small practices. Originally, he built a team of consultants to work on deals from the clients he was advising on credit risk insurance, but he increasingly encouraged them to bring their own cases and clients to the firm, for the mutual benefit of all concerned.

Similarly, Davis deals with the economic and legislative changes, economic concerns and (some measure of) political uncertainty when doing business in Central and Eastern Europe through the firm's networks and alliances.¹¹⁶ Davis & Co. addresses these challenges by:

- Its “inside knowledge” of those markets (secured through associations with the major local law firms).
- Expatriate English lawyers with substantial, long-term local experience.
- Utilising high-level contacts in the government(s) and local business communities.
- Its own “e-communications system,” which Davis believes provides “a distinct competitive edge” for clients in these markets, as it “supercedes poor local telecommunications.”¹¹⁷

7.3.4 Perspectives on Government Policies and Initiatives

Davis insists that while the firm “takes full account” of the constraints imposed by competition laws in the UK and the EU, and advises clients on financial and VAT-related regulations, it is otherwise “completely unaware” of relevant laws, regulations, policies and initiatives. Davis is uncharacteristically sheepish as he admits that, during the

¹¹⁶ The traditional challenges SMEs faced when operating in foreign jurisdictions are examined in Chapter 2 (Dicht *et al.*, 1990; Devins, 1994; Hamill and Gregory 1997; Boter and Holmquist, 1997; Gankema *et al.*, 1997; Poon and Swatman, 1997a; Julien *et al.*, 1997; Watson *et al.*, 1997; Bennett, 1997; 1998; Kandasami, 1998; Zimmerman and Mathiesen, 1998; Hornby *et al.*, 2002).

¹¹⁷ As presented in Chapter 2, Davis & Co.'s experience confirms the findings of Jarratt (1998), Keeble *et al.* (1999), Overby and Min (2000) and others, concerning alliances and networks providing SMEs with a higher and more stable flow of information and resources. Davis' networking prowess in entering operations in foreign markets supersedes the findings of researchers (Dicht *et al.*, 1990; Devins, 1994; Hamill and Gregor, 1997; Poon and Swatman, 1997a; Julien *et al.*, 1997) regarding SMEs facing internal and external obstacles when attempting to do so. The firm's experience is not, however, in accordance with Bennett (1997; 1998), whose research showed that businesses that trade online felt less physical distance from foreign markets. Findings regarding obtaining foreign representation when conducting businesses abroad are also presented in Chapter 2 (Boter and Holmquist, 1997; Gankema *et al.*, 1997; Bennett, 1998; Hornby *et al.*, 2002).

research fieldwork period, he did not know “anything at all” about EU or UK policies, initiatives and programmes generated to either stimulate SMEs generally, or to promote their adoption and implementation of e-business specifically. These policies, initiatives and programmes “simply did not register on the radar” at the time Davis founded the company, and he claims to have remained “oblivious” to them since.¹¹⁸

When the researcher suggested to Davis that perhaps funds from a part of one (apparently invisible) government initiative could be spent on conducting either a workshop or series of workshops, from which more in-depth information could be generated from a number of SME owner/managers, he wholeheartedly agreed that such a workshop/series of workshops would (likely) place SME owner/managers in circumstances where they would be able to discuss the issues that concerned them in a more “wholeheartedly” participative manner than has previously been possible. As a result of the information that might come to light from such workshops, Davis felt “positive” that policy makers would likely be better informed, and therefore better equipped, to generate relevant and visible policies to meet the needs of SMEs, and to encourage them to adopt and implement e-business.

When asked what would be likely to encourage him to donate his time and/or resources to collaborate with the policy makers who aim to serve his business, in order that more visible, appropriate and accessible policy initiatives can be generated for the benefit of his business and/or industry, Davis replied that he would be “more than prepared” to participate “for a set period of time” and that he would view it as a “pro-bono service.” However, he understands that many other SME owner/managers would not be in a position to be able to do so without being paid, and therefore that a financial incentive would be “a great idea.”

“Why hasn’t anyone done it yet?,” he asked incredulously.

7.3.5 Into the Future

Davis & Co. is a law firm that uses technology as a tool to “carve out a place in mainstream corporate law.” Davis believes that technology “is now a key driver for

¹¹⁸ This issue is addressed in some detail in Chapter 4.3.

success in many areas of the law,” and that e-business is “moving the goalposts for how we meet and transact with clients. Firms are responding to client pressure for extranets and the trend towards legal websites that provide transactability.” In Davis & Co., “the accountants, the lawyers and the purchaser all integrate their review from the beginning,” Davis claims. “They share data, work in multi-disciplinary teams, and the data and analysis are available online as it is being generated.”

The greatest disadvantage for Davis & Co. appears to be that its clients do not yet take full advantage of the technology available to them. Davis admits that the firm’s clients “tend to limit online use to communicating by e-mail and perhaps reading versions of contracts.” In fact, relatively few of the firm’s clients have taken advantage even of the opportunity to scan and update all documents onto a central site. “In actual fact, the cost of scanning and posting once is 15 times less expensive than photocopying,” says Davis. “But people still see it as an extra logistical exercise and cost.”

Nonetheless, Davis & Co. has proven itself able to successfully draw together teams to collaborate on their clients' cases – in many cases almost exclusively virtually – by having thoroughly embraced e-business.¹¹⁹ Davis remains undaunted by the fact that the supply of technological advances exceeds the current demand. Looking ahead, he plans to focus “more and more on technology and e-business.”

Davis believes that the “virtual law firm” he founded is “definitely ahead of its time.” Although he is “always looking to and building for” the future, strategic planning is not formally structured or presented in the firm. However, Davis is convinced that, in the future, “any service that can be automated, will be.” He is confident that lawyers will take instructions and payments online, and that all information and documents needed to close a transaction or document litigation will be accessible via online client deal rooms and case rooms.

Davis believes that the biggest challenges facing SMEs utilising e-business adoption and implementation are:

¹¹⁹ Such benefits of e-business adoption and implementation are explored in detail in Chapter 3 and in Appendices A and C.

- Generating revenue, becoming profitable and growing.
- Building a market.
- Customer fulfilment (actually providing the size and range of products to exceed client expectations).
- Supply “remains a constant challenge,” as distribution channels are “still not reliable.”

Having examined the e-business adoption and implementation experiences of Berkeley Square Gallery and Davis & Co., we turn now to Lobster, the online gourmet food provider, which is the third and final UK SME case study to be recounted in-depth.

7.4 IN-DEPTH CASE STUDY – LOBSTER

Lobster <www.lobster.co.uk> caters to a sophisticated gourmet food niche market. Launched in early December 1999, at the height of the internet boom, Lobster is essentially an online delicatessen for customers possessing a discerning palate. The company focuses on delivering products that one could never find stocked in a typical supermarket or local delicatessen to customers who either do not have the time or are not in the vicinity of a shop selling (for example) Iranian caviar or freshly cooked lobsters, but want them. In so doing, Lobster hopes to transform the way people buy gourmet food and fine wines – indeed, it aims to become “the gastronome’s virtual answer” and “the Harrod’s Food Hall of Cyberspace.”¹²⁰

Lobster is privately owned, and was earning an annual revenue “in the mid-six figures” by 2001. During the fieldwork period, Lobster employed three full-time and four part-time permanent staff, outsourcing additional resources as and when they were needed. Lobster’s founder and Managing Director, Alex Fitzgibbons, insists that the company

¹²⁰ This is in line with the findings of research presented in Chapters 2 and 3 and in Appendices A and C regarding e-business enabling small operators to:

- *Exercise new business models in established markets* - (APEC, 1999; Timmers, 2000; Rayport and Jaworski, 2001).
- *Compete with larger organisations* - (Guthrie and Austin, 1996; Watson *et al.*, 1998; Turban *et al.*, 2000).
- *Operate a niche business whilst obtaining access to a wider customer pool than would otherwise be the case* - (Sterne, 1996; Abell and Lim, 1996; Coccia, 1997; Kalakota and Whinston, 1997; Lawrence, 1997; Bennett, 1997; 1998; Poon and Swatman, 1997a; 1999a; 1999b; Puhakainen and Brännback, 1998; Kalakota and Robinson, 1999; Kaplan and Sawhney, 2000; Reimenschneider and Mykytyn, 2000; Turban *et al.*, 2000; Lee, 2001; Phan, 2001; Wilson, 2001; Daniel and Wilson, 2002; Power and Sohal, 2002; Windrum *et al.*, 2003; Windrum, 2004; Windrum and Berrenger, 2004).

provides its customers with “better personal service than they could ever expect to experience in a shop.” Accordingly, Lobster will search for specifically requested products on behalf of its customers, and offers same-day delivery in London, and next-day delivery throughout the UK.

Because it sells high-quality foodstuffs that customers can neither see, smell nor examine, Lobster is presented with disadvantages that other online retailers are not subject to. However, it has an advantage over offline gourmet delicatessens, as they will invariably have more wastage than Lobster, which is able to order stock daily to fulfil its orders.¹²¹ The key business transaction drivers, according to Fitzgibbons, are “the products, the IT, and the fulfilment procedure.” The products – the food – must be of the highest quality, the IT has to work in order that orders can successfully be taken, and the well-packaged products must be delivered on time.¹²²

¹²¹ E-business models leading to the following benefits relevant to this point are addressed in Chapter 3 and Appendix A:

- *Lower administration costs* - (Abell and Limm, 1996; Poon and Swatman, 1997a; 1997b; 1997c; Radstaak and Ketelaar, 1998; Berg and Karttunen, 1998; Currie, 1998; Hawkins and Prencipe, 2000; Turban *et al.*, 2002; Howarth, 2002; Quayle, 2002a; 2002b).
- *Lower production costs* - (Abell and Limm, 1996; Raymond and Bergeron, 1996; Angehrn, 1997; Kalakota and Whinston, 1997; Poon and Swatman, 1997a; 1997b; 1997c; Berg and Karttunen, 1998; Currie, 1998; Gulledge and Sommer, 1998; Shapiro and Varian, 1998; APEC, 1999; Hawkins and Prencipe, 2000; Turban *et al.*, 2000; Europmedia, 2001; Porter, 2001; Raymond, 2001; Howarth, 2002; Quayle, 2002a; 2002b).
- *Reduced stock* - (Kalakota and Whinston, 1997; Currie, 1998; Gulledge and Sommer, 1998; Radstaak and Ketelaar, 1998; Quayle, 2002a; 2002b).
- *Improved internal efficiency* - (McWilliams, 1995; Abell and Lim, 1996; Kalakota and Whinston, 1996; 1997; Auger and Gallagher, 1997; Coccia, 1997; O'Connor and O'Keefe, 1997; Poon and Swatman, 1997c; 1998a; 1998b; 1999a; 1999b; Berg and Karttunen, 1998; Currie, 1998; Gulledge and Sommer, 1998; MacGregor *et al.*, 1998; Palumbo and Herbig, 1998; Radstaak and Ketelaar, 1998; APEC, 1999; Fraser *et al.*, 2000; Hawkins and Prencipe, 2000; Kaplan and Sawhney, 2000; Tetteh and Burn, 2000; 2001; Porter, 2001; Chaston and Mangles, 2002; Howarth, 2002; Quayle, 2002a; 2002b).
- *Improved quality of information* - (Abell and Limm, 1996; Kalakota and Whinston, 1996; Auger and Gallagher, 1997; Coccia, 1997; Poon and Swatman, 1997c; 1999a; 1999b; Cohen, 1998; Currie, 1998; Gulledge and Sommer, 1998; Palumbo and Herbig, 1998; Radstaak and Ketelaar, 1998; Kaplan and Sawhney, 2000; Quayle, 2002a).

¹²² e-Business models leading to the benefits of reduced lead time and greater efficiency are addressed in Chapter 3 and Appendix A (Abell and Limm, 1996; Raymond and Bergeron 1996; Poon and Swatman, 1997a; 1997b; 1997c; Currie, 1998; Gulledge and Sommer, 1998; Radstaak and Ketelaar, 1996; Hawkins and Prencipe, 2000; Quayle, 2002a; 2002b).

All aspects of the business's website, along with many other aspects of Lobster's operations, are outsourced. While this adds to the cost, it has "many benefits," not the least of which is flexibility. In fact, Fitzgibbons finds outsourcing "much cheaper" than maintaining the infrastructure for staff and facilities on retainer. Fitzgibbons has "no idea" whether or not similar levels of outsourcing is a characteristic of other e-tailers selling high value goods, but the aspects of Lobster's business that he insists will "never" be outsourced are the selection, the storage and the packaging of the products it sells. Interestingly enough, he notes that these are the very aspects other companies tend most to outsource. However, the product is "so key" as to make it "inconceivable" that others could "ever be entrusted" to handle it, according to Fitzgibbons.

Despite the fact that Fitzgibbons and his team had expected that the bulk of the company's customers would be London-based, with access to gourmet foods offline, but lacking the time to buy them, the result has in fact been the opposite: the bulk of Lobster's orders are delivered nationwide, to customers who have the time to buy gourmet foods, but lack access to them.¹²³ This has not, however, posed a logistical problem for Lobster, as the company outsources its distribution and delivery systems, a deal that enables it to offer a flat rate for guaranteed next-day delivery throughout the UK without incurring the costs of setting up and maintaining a delivery fleet.

Lobster has chosen to concentrate its operation exclusively in the UK. Many of the site's customers are the British expatriate community in Hong Kong and the Middle East, who buy gifts from Lobster for their friends and family based in the UK. Fitzgibbons intends for Lobster to "crack the UK market" before considering introducing overseas deliveries onto its agenda. Fitzgibbons feels that there is not the same "rationale for price and ease of purchase" for potential customers in European countries such as France, Germany and Italy as there is in the UK, as many of the products Lobster sells are widely available in

¹²³ Increased flexibility and scalability as benefits of adopting and implementing e-business are addressed in Chapter 3 and Appendix A (Currie, 1998; Feinberg and Eastlick, 1997; Kalakota and Whinston, 1997; Ghosh, 1998; Evans and Wurster, 1999; Fraser *et al.*, 2000; Timmers, 2000; Vescovi, 2000; Porter, 2001; Rayport and Jaworski, 2001).

delicatessens there. Fitzgibbons also feels that Lobster's decision to deliver only within the UK reduces the company's risk of credit card fraud exposure.¹²⁴

Although Lobster is an online company servicing a niche market, the "fundamental, age-old retailing principle(s) and concepts remain the same," according to Fitzgibbons. He believes that many of the companies that did not survive the 2000 technology shares crash had become obsessed with overturning these principles and concepts. Fitzgibbons concedes that Lobster's market has not grown as quickly as he thought it would, but he stresses that the "unpredictabilities" that existed when the business began (such as establishing short-lived alliances with the wrong companies)¹²⁵ were all "rationalised" during the first 18 months of operation.

Fitzgibbons has been adamant since launching Lobster that "the margin must cover the costs." He began Lobster with the intention that it should be a long-term company, and ensured that growth never exceeded demand or cash flow. Fitzgibbons also believes very strongly that "getting the timing right" for building a business is "fundamental," because otherwise "you can put yourself out of business." He credits the fact that Lobster hasn't faced an infrastructure burnout to his having "planned ahead."

Christmas is undoubtedly an intense period for gourmet food sellers, but the build-up, especially in online retailing operations, comes later, and more slowly. Offline, Christmas sales and fulfilment might be spread over a six-week period, but for Lobster they have been concentrated in the last two weeks of December. In fact, Fitzgibbons admits that the same volume of business was transacted by Lobster during each of the months of December 2000 and 2001 as had been in the previous eleven months combined (although many customers had pre-ordered goods to be delivered on specific dates during the

¹²⁴ Fear of security risks being a barrier to operating at full e-business potential features in Chapter 3 and Appendix E (Aldridge *et al.*, 1997; Purao and Campbell, 1998; Oxley and Yeung, 2001; Dixon *et al.*, 2002; Quayle, 2002a; 2002b).

¹²⁵ This disadvantage arising from adopting and implementing e-business is discussed in Chapter 3 and Appendix F (Murphy, 1996; MacGregor *et al.*, 1998; 2004; Giaglis *et al.*, 1998; Ritchie *et al.*, 1999; Kalakota and Robinson, 1999; Tetteh and Burn, 2000; 2001; Stauber, 2000; Bunker and MacGregor, 2000; Evans and Wurster, 2000; Lee, 2001; Lee, 2001; Porter, 2001; Sparkes and Thomas, 2001; Jeffcoate *et al.*, 2002).

season). According to Fitzgibbons, the company's infrastructure and fulfilment was "successfully and sensibly scaled" to cope with the "Christmas onslaught."¹²⁶

Fulfilment is "the hidden side of the business," insists Fitzgibbons. Unfortunately, when the volume of deliveries increased exponentially in the lead-up to the Christmas/New Year period in December 2001, it proved more than the delivery company could cope with, despite accurate projections having been supplied to them by Lobster. This meant that other last-minute measures had to be taken. Despite these efforts, (only) 1.4% of orders missed their delivery. Fitzgibbons is adamant that these problems were not only "rectified," but also that they were "not repeated" in subsequent years.

Lobster became "cash flow positive" in December 2000 – a notable achievement for a company that had only been trading for 13 months at a time when many online businesses were floundering, if still in operation. The company was also able to transact an "encouraging" number of sales in the early months of 2001 following the Christmas/New Year period.

A key factor in Lobster's success seems to be Fitzgibbons himself. He was raised in the United Kingdom, but studied in the United States before returning to work at Nintendo for three years, where he was responsible for retail marketing. He then went on to work for the retail marketing division of the Early Learning Centre, where he set up and ran its heavily retail-focused website.

By the end of its first year of operation, Lobster had spent £50,000 – 25% of its turnover – on advertising and marketing. However, £15,000 of this was spent on online advertising alone, which Fitzgibbons considers to have been "completely wasted." The marketing budget allocated for the Christmas 2000 season was only 4% of the turnover achieved, whereas it is usually "just under" 10% of each month's turnover. With such a small advertising and marketing budget, word of mouth referral is critical. Luckily, the company has generated "a considerable amount" of positive PR. A typical new customer

¹²⁶ Increased flexibility and scalability as benefits of adopting and implementing e-business are addressed in Chapter 3 and Appendix A (Currie, 1998; Feinberg and Eastlick, 1997; Kalakota and Whinston, 1997; Ghosh, 1998; Evans and Wurster, 1999; Fraser *et al.*, 2000; Timmers, 2000; Vescovi, 2000; Porter, 2001; Rayport and Jaworski, 2001).

is a former recipient of a Lobster gift who is converted to purchasing from Lobster him- or herself. As 40% of goods ordered from Lobster are gifts, the company is provided with a large proportion of “double opportunities” for future sales.

Although Fitzgibbons believes that price competition poses “little threat” to the company, quality is “key.” Consequently, Lobster is vigilant about the quality and condition of its products. Fitzgibbons feels that scarcity and declining demand pose “less of a threat” to the company than do local competitors, while international competitors pose “even less” of a threat. The demands and tastes of Lobster’s customers are “highly predictable,” and Fitzgibbons has found that he “does not need” to alter Lobster’s marketing practices in response to competition: Lobster monitors its competitors’ activities in an ongoing, informal manner. Fitzgibbons considers competitors’ actions to be “moderately predictable,” but he feels confident that Lobster offers a “higher and more personalised” level of service than does its competitors.

Although it is a very small company, there is a formal, disciplined structure of accountability and corporate governance at Lobster. Clear monthly, quarterly and annual budgets are developed, as are five-year financial forecasts. However, strategic planning is “informal and organic,” taking place as and when necessary. Fitzgibbons has not needed to undertake formal strategic business planning since he raised the initial capital to start the business. He personally makes the majority of decisions, including those pertinent to the day-to-day operations of the company. However, a board meeting is held every month, and 76% shareholder approval is needed for major decisions.

7.4.1 Key e-Business Adoption Drivers

As an internet pure-player start-up, adopting e-business was “a given” for Lobster. However, most of the development and implementation of the organisation’s website and IT development and operations were outsourced, albeit under strict supervision. The website’s navigation and design are intended to be its strong points. New features are added as the company’s range of products and services grows, and during the fieldwork period new products, recipes, menus and ready-to-go dinners were regularly updated through features sections such as *Recipes*, *Menus* and *Guest Chef*. Recipes sorted into

subdivided categories were added to constantly, could be printed out, and came with serving suggestions. The ingredients Lobster sold were highlighted in these recipes, and could be added to a shopping basket. There was also an unedited chat and a question-and-answer section of the site. These features no longer exist, however: they were rationalised in early 2002 as they were “too time-consuming to continue to maintain,” according to Fitzgibbons.

Development of the Lobster website began in mid-August 1999, with a pre-Christmas launch as its focus. The site proper launched in early December 1999. There was a 100-day “slip” between the intended and actual launch, which was “hair-raising,” says Fitzgibbons, as it was “uncomfortably close” to Christmas. Nevertheless, outside of “the usual hiccups,” there have been “no major problems” with the IT aspects of launching Lobster’s website. Fitzgibbons attributes the fact that there have been no noteworthy operational problems with the equipment, integration problems, or backup equipment and procedures relating to these matters have all been outsourced: hence they were “someone else’s problem to sort out.”¹²⁷ The organisation’s online ordering system is fully integrated with the company’s other IT systems, all of which have been adapted from off-the-shelf packages.

Although he considers that Lobster as a business has been a “success,” Fitzgibbons prefers to calculate what he labels “success milestones,” which have included:

- Meeting targets.
- Becoming cash flow profitable.
- Getting the “marketing mix” right.

Fitzgibbons determines customer satisfaction by:

- The conversion rate of browsers to buyers.
- Customer feedback.

¹²⁷ Flexibility and scalability as benefits of adopting and implementing e-business are addressed in Chapter 3 and Appendix A.

- The percentage of customers who have a “seamless” order-to-completion experience.

Fitzgibbons considers “the main handicap to online trading” to be “the availability of too much data,” which he finds makes it extremely difficult to “step back and see the bigger picture” needed in order to “remain instinctive.” Acutely conscious of the “constant danger” of losing his instinct, Fitzgibbons feels that the more data he examines, the “less fleet of foot” he becomes. He therefore tries to be “constantly on guard” against this.

7.4.2 Development and Operational Issues

Lobster was a “100% business-driven idea,” according to Fitzgibbons, whose primary motive was to start a niche business – the channel for that business became apparent to him later.¹²⁸ As the plans for the business took shape, Fitzgibbons consciously chose to fund the company with a private backer rather than through a venture capital company. Despite the distractions of the media and the hype at the time, Fitzgibbons insists that he “always” saw Lobster as a “slow-growth, long-term” business.¹²⁹

That Lobster was able to transform so rapidly and effectively from concept to realisation Fitzgibbons attributes to the fact that there was, from the outset, a clear business proposition, a single investor, and – initially, at least – a small group of suppliers. After raising the initial £230,000 start-up funding, Fitzgibbons has been able to operate the business without a further influx of cash. Lobster’s financial backer is Rocco Forte (scion of the Trusthouse Forte hotel chain). Forte provides corporate credibility, which Fitzgibbons believes “helped to separate Lobster from other start-up dotcoms.” In return,

¹²⁸ Opportunities for niche businesses operating e-business models are detailed in Chapter 3 and Appendices A and C (Coccia, 1997; Donckels and Lambrecht, 1997; Eden *et al.*, 1997; Evans and Wurster, 1997; Lawrence, 1997; Poon and Swatman, 1997b; 1997c; Cobbenhagen and Nauwelaers, 1999; Nilsson *et al.*, 1999; Kaplan and Sawhney, 2000; Reimenschneider and Mykytyn, 2000; Timmers, 2000; Turban *et al.*, 2000; Engsbo *et al.*, 2001; Levy *et al.*, 2001a; 2001b; Mullins *et al.*, 2001; Raymond, 2001; Rayport and Jaworski, 2001; Porter, 2001; Sathye and Beal, 2001; Tetteh and Burn, 2001; Daniel and Wilson, 2002; Power and Sohal, 2002; Quayle, 2002a; 2002b; Windrum and Berrenger, 2003; Windrum, 2004).

¹²⁹ Scalability and the flexibility to react to and change with market conditions as benefits of SMEs adopting and implementing e-business is addressed in Chapter 3 and Appendices A and B (Iocovou *et al.*, 1995; Currie, 1998; Chappell and Feindt, 1999; Hadjimanolis, 1999; Feinberg and Eastlick, 1997; Kalakota and Whinston, 1997; Ghosh, 1998; Troye-Walker, 1998a; 1998b; Evans and Wurster, 1999; Fraser *et al.*, 2000; Smallbone *et al.*, 2000; Timmers, 2000; Vescovi, 2000; Porter, 2001; Rayport and Jaworski, 2001; Olave and Nato, 2001; Quayle, 2002a; 2002b).

Forte “expects the discipline inherent in a much larger company.” Even so, Fitzgibbons admits that he had to “cut a lot of corners” rather than use “best practice procedures” when launching Lobster.

7.4.3 Networks and Alliances

Prior to and during the research fieldwork period, Fitzgibbons claimed that he had not undertaken any formal or informal networking. However, he admits that the organisation’s financial backer had informally networked on Lobster’s behalf. Subsequent to the end of the research fieldwork period, Fitzgibbons, on behalf of Lobster, began an association with The Guild of Fine Food Retailers.

7.4.4 Perspectives on Government Policies and Initiatives

Fitzgibbons admits that, during the research fieldwork period, he “didn’t hear, see or know anything” about EU or UK policies, initiatives and programmes generated to stimulate SMEs generally, and to promote their adoption and implementation of e-business specifically. They “weren’t apparent” to him at the time he founded Lobster, and he claims to have remained “completely unaware” of such policies and initiatives since, excepting the researcher’s explanations of them during their Dialogical AR-inspired “reflective dialogues.”¹³⁰

When the researcher suggested to Fitzgibbons that perhaps funds from a part of one (apparently invisible) government initiative could be spent on conducting either a workshop or series of workshops, from which more in-depth information could be gathered from a number of SME owner/managers, he agreed that such a workshop/series of workshops would (likely) place SME owner/managers in circumstances where they would be able to discuss the issues that concerned them in a more wholeheartedly participative manner than has previously been possible. As a result of the information that might come to light from such workshops, Fitzgibbons was “sure” that policy makers would likely be better informed – and therefore better equipped – to generate relevant and visible policies to meet the needs of SMEs, and to therefore encourage them to adopt and implement e-business. “If all these resources are so invisible,

¹³⁰ This issue is addressed in some detail in Chapter 4.3.

they need to sort it out. No question,” he adamantly states. Fitzgibbons also felt that the workshop(s) have the potential to “really change things for the better.”

When asked what would encourage him to donate his time and/or resources to collaborate with the policy makers who aim to serve his business, in order that more visible, appropriate and accessible policy initiatives can be generated for the benefit of both his business and his industry, Fitzgibbons responded that only the prospect of financial remuneration would incentivise him – otherwise, he felt, there was “no reason” to spend time on something that, despite being “a more than worthwhile endeavour,” would not directly benefit him on a day-to-day basis – “and certainly not in the short-term.”

7.4.5 Into the Future

Fitzgibbons expects that what he labels the “carnage” of online companies during and since the 2000 technology shares crash resulted in making it “much more difficult” for entrepreneurs to acquire funding for their business ideas. He admits to being surprised that the process of converting a browser to a purchaser was much slower than media reports had suggested, and he labels this “the gap between the hype and the actual.” If Fitzgibbons was launching Lobster over again, he is sure that it would be a “much tighter” business with a more defined range. His advice for those launching online retailing businesses is for them to “stay niche,” to treat online businesses essentially the same as any other retail business, while approaching selling “from an e-tail point of view,” and to keep costs “within an absolutely comfortable margin,” and he considers “time and access” to be the “great calls to purchase.”

Fitzgibbons feels that Lobster’s more traditional, long-established gourmet food competitors (who include such retailing luminaries as Harrod’s and Fortnum & Mason’s) were handling online retailing “so badly” when Lobster launched that he was able to seize the opportunity “much more easily” than he had anticipated. Although these competitors have to a great extent “caught up” during the fieldwork period, Fitzgibbons is sure that Lobster has entrenched itself in its niche market. The UK online gourmet and luxury products market is “by no means closed,” but Fitzgibbons feels that he does not believe

that it would be difficult for any similar new businesses to begin to compete with Lobster, as it remains “firmly positioned” within its market niche, and despite the fact that the established gourmet food sellers do not yet have the management in place to fully exploit their online potential, Fitzgibbons intends for Lobster to be “well established” in that market by the time that they do.

Fitzgibbons anticipates having to “continue to battle against the British apathy” about shopping online. He aims for the business to become an “industry innovator in a very fragmented market.” He believes that he will continue to achieve this by:

- Efficient ordering systems.
- Efficient customer service.
- Providing very high quality products.
- Differentiating the business from mass-production retailers.

Fitzgibbons believes that the biggest challenges facing SMEs utilising e-business adoption and implementation are:

- Formulating a profitable business model.
- Moving quickly enough in order to get sufficient market share.¹³¹
- Finding the right balance between operational costs and revenues.
- Finding a market niche and deciding whether to “go global” or to be constrained geographically.

7.4.6 Postscript

During the fieldwork period, Fitzgibbons discussed a number of future opportunities for the company, including how one future possibility for Lobster was for it to align itself or to merge with another business. He also stressed that he had “definite plans” to increase Lobster’s range of organic foods and to extend its range to include “luxury gift products,” such as hampers and cigars.

¹³¹ Over time, Fitzgibbons expects the “current plethora” of internet firms to consolidate into “a few large and some small specialist” businesses. He feels that online retailers need to avoid being caught in the mid-range of sizes, where “the costs are highest.”

Indeed, although its initial specialisation was in gourmet provisions such as caviar, chocolates, champagne, lobsters and other delicacies, Lobster's emphasis has now moved to focus on flowers, food gifts and hampers for special occasions. It does so in conjunction with 0800-Blossoms Ltd. This partner organisation (which now owns a majority shareholding of Lobster) was started in a house in Fulham by James Blake in 1997 as a telephone ordering service for floral gifts. The business now operates from a warehouse in Wandsworth, London.

The partners are similarly dedicated to quality - even the floral bouquets they distribute "are made by florists, not production line workers." The partner companies take advantage of economies of scale by ordering their flowers directly from The Netherlands, which enables them to offer "much better value and a much fresher product." Orders placed to go outside London are packaged in aqua packs and sent by courier in purpose-designed flower transporters, alongside the accompanying order for caviar, lobsters, chocolates and/or champagne.

7.5 SUMMARY

Having investigated three of the case study organisations (Berkeley Square Gallery, Davis & Co. and Lobster), in some narrative detail here, the next chapter presents overviews of the remaining four UK case studies. These organisations (Design Bridge, Foyles, GF-X and Toast) will be described in less detail than were the three case organisations featured in this chapter. Although the research procedures were equally comprehensive with all seven case studies, events subsequent to the fieldwork period resulted in the latter four no longer qualifying as SMEs, the reasons for which will be made clear in each individual case description. The findings from these cases are no less valid, and they are included in order to draw out the salient points that will be presented in the discussion of the case organisations that follows in Chapter 9. The major points considered therein will be related not only to the findings arising from the case organisations, but also to the research featured in the earlier chapters of the thesis. These major issues include:

- The drivers to e-business adoption.
- Development and operational issues.

- Networks and alliances.
- Perspectives on government policies and initiatives.

All aspects of the research will be drawn together at the end of Chapter 9, in preparation for the final chapter, which summarises and analyses the implications drawn from the research, and presents a “systemically desirable and culturally feasible” way forward.

Supplementary information referred to in this chapter is located in the following appendices:

- Appendix A – The Advantages of e-Business Adoption and Implementation
- Appendix B – SME Characteristics
- Appendix C – Drivers to e-Business Adoption by SMEs
- Appendix D – Interview Questionnaire
- Appendix E – Barriers to e-Business Adoption by SMEs
- Appendix F – The Disadvantages of e-Business Adoption and Implementation
- Appendix G – Collected Datasets – A Classification of the Case Organisation Documents
- Appendix I – Incentivisation/Workshops Questionnaire
- Appendix O - Findings Arising From the Case Studies Relating to the Literature Review

Chapter 8

Four Case Overviews

8.1 INTRODUCTION

Having presented three case studies in detail in the previous chapter, this chapter examines the remaining four UK case organisations (Foyles, G-FX, Design Bridge and Toast). They are presented in somewhat less detail than were the case organisations in the previous chapter. At the beginning of the research period, these four case organisations could be classified as SMEs.¹³² However, by the time the researcher was writing up, they no longer fit the criteria of an SME in UK and/or EU definitions (due to either their growth or to their having been purchased by a larger organisation). Nonetheless, their experiences are typical with high-growth or successful SMEs, and the findings arising from them are valid. The full research procedures were undertaken with these case organisations throughout the research period, and accordingly they are outlined here in order to accentuate and draw out the salient points in the discussion of the knowledge arising from the case studies (which are presented in Chapter 9).

As in the previous chapter, and in line with the Dialogical AR-inspired methodology, the individual “voices” of each case study are somewhat different, in order to accurately reflect the fact that, following the initial interview, the direction and content of the “reflective dialogues” was to a great extent prescribed by the case organisation principals themselves. Accordingly, the “tone” individual to each case organisation arose as a natural result of the employment of Dialogical AR.

Findings that tie in with the literature are noted in the footnotes to the chapter. As in the previous chapter, there are so many references (25 in this chapter, alone) that, had they been incorporated into the main text, they would have interrupted the narrative flow.

¹³² The UK and EU definitions of SMEs are presented in Chapter 2.2.

These four case overviews are presented in alphabetical order. The first case overview presented in this chapter is therefore that of Design Bridge. It is followed by Foyles, GF-X and then Toast.

8.2 CASE STUDY OVERVIEW – DESIGN BRIDGE

Design Bridge <www.designbridge.co.uk>, a privately owned group of four companies, is one of Europe's leading brand design companies, with clients that include adidas, Unilever, Heineken, Coca-Cola, Kraft Jacobs Suchard, LVMH, McDonald's and Nestlé. Interviews and Dialogical AR-inspired "reflective dialogues" took place during the fieldwork period with William Goodenough, the Group's Executive Chairman and one of the co-founders of Design Bridge.

Design Bridge was founded in November 1986. The business was originally focussed on designing two-dimensional (2D) packaging, and operated from a single office in London. In 1992, in order to "capitalise on the success of the organisation's growing three-dimensional (3D) packaging division," Design Bridge Structure was formed. Following this, the Corporate Service Branding division of the business was established in 1999 to work with "corporate clients and to assist existing packaging clients on the development of their brands outside of the traditional packaging arena." This division of the business has since grown to become "one of the most globally successful and respected names within three-dimensional branding and packaging," according to Goodenough. This division also complements the activities of the business's graphics business, and Goodenough believes that many of Design Bridge's clients have benefited from "having a range of skills located under one roof." In 1995, Design Bridge opened an office in Amsterdam, and an office in Singapore was opened in mid-2003 in order to provide its Asian clients with more conveniently located consultancy and client services.¹³³

¹³³ In Chapter 2, it is explained that organisations categorised under the SME umbrella differ enormously, not only with respect to employee numbers and annual turnover, but also in their business activities, degree of international exposure, customer base(s), sector characteristics, and technological sophistication. As a result, a great variety of organisational structures exist, some of which resemble those of large businesses, and some of which resemble those of micro-businesses (Windrum and de Berranger, 2003; Windrum, 2004). Design Bridge has grown to resemble the former.

Windrum and Berranger (2004) also posit that, the organisational structures of larger SMEs are often more like the specialised, divisional hierarchies that are traditionally associated with large organisations, with specialist middle managers in control of an independent departmental budget (Windrum, 2004). These findings are in line with the international nature of Design Bridge's operations.

Given that the design industry is heavily dependent on computer aided design (CAD) software, Design Bridge has, since its inception, necessarily become increasingly technologically astute. In addition, given that the organisation has offices abroad and clients based globally, it was inevitable that Design Bridge would “have to” adopt e-business in order to remain competitive.¹³⁴

The Group’s website was developed in-house in 1999 (with three major redesigns since), and is primarily used to:

- Promote the business.
- Inform clients of press releases, upgrades in service packages, etc.
- Display the testimonials of satisfied clients.
- Offer a virtual sample of Design Bridge’s designs to potential clients.¹³⁵

Since 1999, Design Bridge has used a high-speed broadband line to access the internet in order to obtain design and technical information on clients and their products, and also to keep abreast of its competitors’ developments. The company’s intranet ensures that staff in “the various offices” can communicate “seamlessly,” not only with each other, but also with their clients.

Design Bridge’s website does not accept financial transactions. Goodenough feels that, given the nature of developing bespoke 2D and 3D design services, there is “nearly always an ongoing dialogue” with clients. He and his partners also “personally prefer” traditional payment systems. Consequently, he does not believe that online payment facilities are “particularly suitable” for the organisation.

Upon reflection, Goodenough was “sure” that Design Bridge did not engage in any formal networking. However, he believed that “every business, in order to prosper” had to engage in ongoing informal networking, which he saw as taking the form of

¹³⁴ This is in line with research presented in Chapters 2 and 3 and Appendices A, B and C.

¹³⁵ These benefits are in line with findings of research presented in Chapters 2 and 3, and Appendices A, B and C.

“generating positive PR” through existing and former clients, and of delivering unsolicited pitches to organisations that the business wanted to work with.¹³⁶

Although Design Bridge engages consultants to “deal with red tape,” such as minimising taxes and “taking care of” copyright, contractual and other regulatory requirements, Goodenough admitted that he was “not aware” of any EU or UK policies, initiatives and programmes generated to stimulate SMEs generally, and to promote their adoption and implementation of e-business specifically. Although he concedes that “it would have been useful to have received some help - especially financial help - when the business was starting-up and growing,” such policies and initiatives have “never been apparent” to Goodenough, except when they were outlined for him during the “reflective dialogues” with the researcher. He and his co-founders have “never considered” government support services. Goodenough feels, even now that the company is established and successful, that “seeking out” such government policies and initiatives, even if they ultimately proved to be “highly relevant,” would likely take so much time to locate as to constitute “a full-time job in itself.” Consequently, they are “unaffordable.”¹³⁷

When the researcher suggested to Goodenough that perhaps funds from a part of one (apparently invisible) government initiative could be spent on conducting either a workshop or series of workshops, from which more in-depth information could be generated from a number of SME owner/managers, he wholeheartedly agreed that such a workshop/series of workshops would (likely) place SME owner/managers in circumstances where they would be able to discuss the issues that concerned them in a more participative manner than has thus far been the case. As a result of the information that might come to light from such workshops, Goodenough was “sure” that policy makers would likely be better informed – and therefore better equipped – to generate relevant and visible policies to meet the needs of SMEs, and to therefore encourage them to adopt and implement e-business.

¹³⁶ The nature of (formal and informal) networking is described in Chapter 2 (Lei and Slocum, 1992; Möller, 1992; Golden and Dollinger, 1993; Gibb, 1993; Grönroos, 1994; Ozcan, 1995; Webster, 1995; Mowery *et al.*, 1996; Raymond and Bergeron, 1996; Rosenfeld, 1996; Auger and Gallagher, 1997; Gummesson, 1997; Dean *et al.*, 1997; Gimeno *et al.*, 1997; Tikkanen, 1998; Achrol and Kotler, 1999; Jeal and Wroe, 1999; Keeble *et al.*, 1999; Miles *et al.*, 1999; Dennis, 2000; Overby and Min, 2000; 2001; Engsbo *et al.*, 2001; Premaratne, 2001; O'Donnell *et al.*, 2001; Bar Nir and Smith, 2002).

¹³⁷ This issue is addressed in some detail in Chapter 4.3.

Goodenough was asked what would be likely to encourage him (or a designated representative of Design Bridge) to donate time and/or resources to collaborate with policy makers, in order that more visible, appropriate and accessible policy initiatives can be generated for the benefit of his business and/or industry. He replied that “money” or “direct, easily accessible grants” would incentivise him to do so. He considered the concept of the workshop(s) a “fantastic” idea and felt that, if the workshop(s) were undertaken, they “could really change the way things currently work.”

Design Bridge employs approximately 145 people, which keeps the organisation within the definition of a “medium-sized business” as far as the UK’s DTI employee number reckoning goes. However, since the beginning of the fieldwork period, the Group’s annual turnover has risen to exceed £12 million. This means that, in accordance with Section 248 of the (UK’s) Company’s Act of 1985 (whereby a medium-sized business must not have a turnover of more than £11.2 million), Design Bridge can no longer be classified as an SME. Consequently, the case has been presented here in less narrative detail than were the three case organisations in the previous chapter, despite the fact that Design Bridge underwent an equally comprehensive research process during and subsequent to the research fieldwork period.

Having reviewed Design Bridge, the first of the four case organisation overviews, we now turn to Foyles, which was founded in 1906, and considered for some time to be the worlds’ most famous purveyor of books.

8.3 CASE STUDY OVERVIEW – FOYLES

Two brothers, William and Gilbert Foyle, founded Foyles <www.foyles.co.uk> in 1903. When they failed their Civil Service examinations, the Foyle brothers decided to sell their textbooks. Such was the response to their advertisement that they could have sold them many times over. As a result, they consequently determined to start up a bookshop, and those unwanted textbooks became the modest foundation stone of what was to become, according to Christopher Foyle (the grandson of William Foyle), “the world’s greatest bookshop.” The “warren-like, rambling, shambling landmark,” with its myriad rooms over three floors, and “arcane specialities and dusty ambience” has been in Charing Cross

Road since 1906, but has only recently embraced the most fundamental aspects of technology.

When the fieldwork period began, Foyles was undergoing an extensive ICT implementation process. The bookstore was “hopelessly out of date” when Christopher Foyle took over control (he inherited a percentage share of the store from his aunt when she died in 1999).¹³⁸ Foyle admits that this was because the store was “dreadfully mismanaged” throughout the decades that it was under the watch of his aunt, Christina Foyle, who took over when her father retired, and ran the store for over 50 years. Foyle admits that during that period the business was “eclipsed totally” by “the rush to swamp British high streets with inviting book chains.”¹³⁹

For much of that half-century, despite what Foyle describes as its “hapless organisation”¹⁴⁰ and “non-existent customer service,” the store “proved a lure for bibliophiles and tourists alike, drawn by the vast stock.” The shop had, admits Foyle, become “a byword for bizarre signing and layout, for an aversion to technology and modern sales techniques (the store had a notorious “three queue” method for buying books¹⁴¹), for roughshod treatment of staff,¹⁴² for fraud,”¹⁴³ and for the “haughty

¹³⁸ The business is still privately owned. The demise of Christina Foyle enabled the store to be taken over by her nephews Christopher Foyle, as Chairman, and Bill Samuel, as Co-Director. They brought in professional retail management, led by ex-Our Price boss Mike McGinley as Chief Executive.

¹³⁹ In Chapter 3 and Appendix E the issue of knowledge-based innovation being often market-dependent is addressed (Davenport, 1992; Cobbenhagen and Nauwelaers, 1999). An organisation with a knowledge challenge (such as Foyles during this period) could be blindsided by competitors exploiting opportunities of which it is not even aware: it may simply miss the boat strategically (Haynes *et al.*, 1998).

¹⁴⁰ Chaotic organisational structure as a result of SME owner/manager influence is explored in Chapter 2 and in Appendices B and E (Kirby and Turner, 1993; Benjamin and Levinson, 1993; Iacovou *et al.*, 1995; Poon and Swatman, 1996a; 1996b; Zimmerman and Mathiesen, 1998; Chappell and Feindt, 1999; Nilsson *et al.*, 1999; Chau and Pederson, 2000; Van Doren *et al.*, 2000; Levy and Powell, 2000; 2002; Levy *et al.*, 2001a).

¹⁴¹ These three stages constituted:

- Finding a book, taking it to a counter, then swapping it for a chit.
- Paying for it (in cash) at another desk.
- Returning to the original counter with the receipt to collect the book.

This procedure had to be repeated in each department.

¹⁴² “Christina had a very bad relationship with the staff. She was always hiring and firing like mad. The union tried to get in, but she found out who was behind it and she fired them as well. There was once a strike that went on for three months!” exclaims Foyle.

¹⁴³ Approximately £10 million was lost over nearly 20 years due to an “extraordinary, long-running invoice fraud” perpetrated by the shop’s own managers.

eccentricity” [of Christina Foyle].”¹⁴⁴ Before 1999, there was little investment in technology, as Christina Foyle hated it (to the extent that she even banned the use of calculators in the store).¹⁴⁵

“The trouble was, the service wasn’t very good. Staff were very often foreign students. English wasn’t their first language – a problem in an English bookshop – and there was no career structure. They were paid peanuts and, because she didn’t trust them, she insisted on a crazy chit system: customers had to leave their purchase at one counter, pay at the cashier and take a copy of the receipt back to the counter to collect the book. They couldn’t use credit cards either – she only let plastic in toward the end.”

Christopher Foyle.

“I wanted to make it a more pleasurable and informed experience to shop here,” Foyle says. Accordingly, Foyles has undergone “a top-to-toe transformation,” he claims proudly. Foyle introduced computerisation and a “bottom-up/top-down” management style. However, he had to set this growth “against a background of tales of woe from the rest of the sector - complaints of being squeezed by supermarkets and strangled by the internet,” he admits.

“The entire shop has been refitted and, while our unparalleled range of books will always remain at the heart of Foyles, we’ve introduced extra elements to make our customers’ visits more enjoyable. There are five floors of books with 56 specialist subjects. In response

¹⁴⁴ The strong owner influence and centralised management prevalent in many SMEs is examined in Chapter 2 and Appendix B (Dandridge, 1971; Nelson and Winter, 1977; 1982; Welch and White, 1981; Oakey, 1985; Raymond, 1985; Miller and Droge, 1986; Miller and Toulouse, 1986; Bekker and Staude, 1988; Bili and Raymond, 1993; Kirby and Turner, 1993; Harrison, 1994; Reynolds *et al.*, 1994; Iacovou *et al.*, 1995; Mulhern, 1995; Murphy, 1996; Spender, 1996; Julien *et al.*, 1997; Yap and Thong, 1997; Bolisani and Scarco, 1999; Bunker and MacGregor, 2000; Dennis, 2000; Smallbone *et al.*, 2000; Olave and Nato, 2001).

¹⁴⁵ A lack of investment in technology as a result of an SME owner/manager not understanding the advantage of adopting and implementing it is explored in Chapters 2 and 3 and Appendices A, E and F (Eindor and Segev, 1978; Roberts and Berry, 1985; Cheney *et al.*, 1986; Runge and Earl, 1988; Raymond, 1990b; 1992; 2001; Rothwell, 1991; Davenport, 1992; Kirby and Turner, 1993; Lefebvre and Lefebvre, 1993; Harrison, 1994; Iacovou *et al.*, 1995; Poon and Swatman, 1996b; 1997b; 1997c; Auger and Gallagher, 1997; Tidd *et al.*, 1997; Yap and Thong, 1997; Westhead and Storey, 1996; Giaglis *et al.*, 1998; Pollard and Hayne, 1998; Purao and Campbell, 1998; Berg and Karttunen, 1998; Zimmerman and Mathiesen, 1998; Cobbenhagen and Nauwelares, 1999; Lefebvre *et al.*, 1999; Pitt *et al.*, 1999; Bunker and MacGregor, 2000; Chau and Pederson, 2000; Farhoomand *et al.*, 2000; Hill and Stewart, 2000; Jeffcoate *et al.*, 2000; 2002; Stauber, 2000; Chau and Hui, 2001; Lee, 2001; Lee and Runge, 2001; Levy *et al.*, 2001b; Mirchandani and Motwani, 2001; Porter, 2001; Sathye and Beal, 2001; Tetteh and Burn, 2001; Dixon *et al.*, 2002; Barry and Milner, 2002; Dixon *et al.*, 2002; Roberts and Wood, 2002).

to customer demand, we've introduced a selection of second-hand books. We've installed new lifts and air conditioning. There's an art gallery, a café, Ray's Jazz Shop, and in the children's department we've even installed a piranha tank," says Foyle.

Foyle "spent millions" on the store, installing new systems, new working practices, and conducting a complete refurbishment. "The stock is now catalogued on computer, sales are up, and the shop is in the black for the first time in ages," he says. The corruption has long since ended. Forfend, Foyles has opened a new branch at the Royal Festival Hall. It has "knowledgeable staff, a huge range of titles, and a wide spread of languages, including French, Spanish, German, Urdu, Hindi, Kashmiri, Japanese and Punjabi. We also offer mail order, business and personal accounts, and sell online, too," states Foyle proudly.

The process has, though, been "like dragging an organisation through 20 years of changes in 24 months," admits Foyle. Nonetheless, there were already benefits visible in 2001. Trading performance for the first six months of 2001 was "up 25%" on the previous year. "Cash flow is positive, we have no debt, and we have around £3m in hand in the bank... We aim to break even by the end of 2002 and trade profitably thereafter," says Foyle.

In 1963, Foyle claims that the store was turning over £4 million, the equivalent of £80 million today. In 2001, Foyles turned over £14 million. "See how it declined?" exclaims Foyle. "In the 1960s, we had five times the people coming into the shop that we have now." Under his watch, the slippage has steadied, however. "Our customers aren't moved by price. Sure, I see them come in, take notes and then go and order off the internet, and that annoys me. But there's nothing we can do about that. Amazon has 4-8% of the UK book trade, but its growth is plateauing. The logical conclusion is that Amazon will go to 100%, but that will never happen – people will always like bookshops like Foyles," he believes.

Foyle "does not differentiate" between formal and informal networking and "simply doing business." He considers networking to be "absolutely fundamental to success." Although Foyles is not a member as such of any formal networking group, the business generates a great deal of positive PR and "gravitas" from its literary lunches, book signings and alliances with literary prizes. Although the bookstore does not sponsor any

prizes directly, Foyle attends awards ceremonies and participates “wherever possible, as much as possible.”¹⁴⁶

Although Foyle admits that during and since the research fieldwork period he was not aware of any EU or UK policies, initiatives and programmes generated to stimulate SMEs generally, and to promote their adoption and implementation of e-business specifically, he feels that this may have been because “there was simply so much else that had to be done” that he didn’t focus in that direction. Such policies and initiatives have “never been apparent” to Foyle, except when they were outlined for him during the “reflective dialogues” with the researcher. He has “never considered” seeking out government support services. Foyle admits that perhaps this is because he assumes that seeking out such government policies and initiatives, even if they were to be ultimately beneficial, “would take too much time,” and because such an endeavour was “simply not that high on a very long list of priorities.”¹⁴⁷

When the researcher suggested to Foyle that perhaps funds from a part of one (apparently invisible) government initiative could be spent on conducting either a workshop or series of workshops, from which more in-depth information could be generated from a number of SME owner/managers, he enthusiastically agreed that such a workshop/series of workshops would (likely) place SME owner/managers in circumstances where they would be able to discuss the issues that concerned them in a more participative manner than has thus far been the case. As a result of the information that might come to light from such workshops, Foyle felt sure that policy makers would likely be better informed – and therefore better equipped – to generate relevant and visible policies to meet the needs of SMEs, and to therefore encourage them to adopt and implement e-business. Foyle was emphatic that he would prefer to see government money spent on such a “tangible, practical programme” than “drowned in an ocean of yet more red tape.”

¹⁴⁶ The nature of (formal and informal) networking is described in Chapter 2 (Lei and Slocum, 1992; Möller, 1992; Golden and Dollinger, 1993; Gibb, 1993; Grönroos, 1994; Ozcan, 1995; Webster, 1995; Mowery *et al.*, 1996; Raymond and Bergeron, 1996; Rosenfeld, 1996; Auger and Gallagher, 1997; Gummesson, 1997; Dean *et al.*, 1997; Gimeno *et al.*, 1997; Tikkanen, 1998; Achrol and Kotler, 1999; Jeal and Wroe, 1999; Keeble *et al.*, 1999; Miles *et al.*, 1999; Dennis, 2000; Overby and Min, 2000; 2001; Engsbo *et al.*, 2001; Premaratne, 2001; O'Donnell *et al.*, 2001; Bar Nir and Smith, 2002).

¹⁴⁷ This issue is addressed in some detail in Chapter 4.3.

Foyle was asked what would be likely to encourage him to donate his time and/or resources to collaborate with the policy makers who aim to facilitate his business, in order that more visible, appropriate and accessible policy initiatives can be generated for the benefit of his business and/or industry. He replied that he felt that “money” would be the direct benefit that would make either him or a “switched-on, trusted representative” of Foyles to dedicate the time to participate in such a process. However, Foyle considered the workshop(s) to be a “good idea,” and felt that, if undertaken, they could stimulate “positive, worthwhile” change.

Since the beginning of the fieldwork period, as a result of the changes that Foyle has overseen (including obtaining a warehouse, an integrated stock control system, a second store, and a transactional website), Foyles can no longer be classified as an SME. The number of employees in the business now exceeds the definitions of “medium-sized business” that the UK’s DTI and Companies Act of 1985 and the EU official recommendation use. In addition, Foyles’ turnover now exceeds the £11.2 million figure that the (UK’s) Companies Act defines as a “medium-sized” business. Consequently, Foyles is presented here in an outline rather than as a comprehensive narrative case study, despite the fact that all the research procedures were comprehensively undertaken on the organisation throughout the fieldwork period.

Having examined first Design Bridge and then Foyles, we now turn to the next case organisation overview, that of GF-X, an online airline cargo bookings business.

8.4 CASE STUDY OVERVIEW – GF-X

Global Freight Exchange (GF-X) <www.gf-x.com> developed a b2b-trading platform for airfreight carriers and forwarders in order to “exploit the \$50bn airfreight sector.” According to Demetrios Zoppos, the business’s Managing Director, GF-X is “the global leader in electronic bookings for the air cargo industry.” More than one third of the world’s carriers and forwarders use GF-X’s products in all major airfreight markets worldwide, and GF-X’s client list includes 27 carrier organisations representing 53 airlines, in addition to “many regional and global forwarders.”

GF-X has integrated its system with the carrier systems' controlling operational schedules, capacity control systems and booking engines, enabling it to receive real-time data feeds. Via an online interface, which enables forwarders and carriers to secure capacity "quickly, simply and cost-effectively,"¹⁴⁸ GF-X's clients are able to:

- Manage their entire portfolio online.
- Determine which carriers can meet their booking requirements.
- Book capacity.
- Manage all bookings (including amendments).

The GF-X Platform, which has been in continuous use since its launch in 2000, is the basis for all GF-X products, which consist of:

- *GF-X Exchange* – The "world's most comprehensive" multi-carrier online cargo reservation system.
- *GF-X Host to Host* – An "innovative interface" enabling forwarders to make bookings directly from their own systems. This removes the need for forwarders to key-in information twice, guarantees booking responses and maximises booking confirmations.
- *GF-X Private Label* – A "fully customisable, own-branded electronic booking solution for airlines," it enables carriers to reach their partners whilst leveraging existing investments and utilising the current integration solution with GF-X.

Zoppos explains that the GF-X Platform offers the following technological advantages:

- *Performance, capacity and scalability* – Designed and constructed to be easily scalable, the componentised architecture enables each sub-system to be deployed and

¹⁴⁸ The benefits of the new business models e-business enables include:

- Creating new sources of advantage.
- Enabling businesses with information capacity to treat mass clients as individuals.
- Convergence between products and services.
- Global production networks and simultaneous co-operation.

These benefits are explored in Chapters 2 and 3 and in Appendices A and C (Bekker and Staude, 1988; Goldman *et al.*, 1995; Currie, 1998; Ghosh, 1998; Drucker, 1998; Evans and Wurster, 1999; APEC, 1999; Porter, 2001).

tuned to meet the requirements of increasing system load. Capacity and scalability are not constrained by individual carrier systems - this delivers superior performance when compared to a pure remote transactions paradigm, as data is held centrally rather than on individual carrier systems.

- *Security* – Uses SSL encryption for all online traffic to and from its servers and Public/Private key encryption for the transfer of data files to and from carrier systems, coupled with a comprehensive access control model.
- *Resilience and availability* – Runs on dedicated hardware, with a dedicated support team, and is not dependent on the resilience of carrier systems.
- *Flexible integration with remote systems* – A flexible methodology that enables integration with any remote system using a “layered” integration framework.

The GF-X Platform delivers “the required automation benefits” to the air cargo industry. It offers a scalable and resilient foundation, built upon a “componentised system architecture with a number of sub-systems” that allow for the system to be “easily extended with additional functionality.”¹⁴⁹ GF-X also provides a number of additional services to complement its products in order to “facilitate the smooth implementation of automated processes” for both carriers and forwarders. These consist of:

- *Implementation support* – Assists carriers and forwarders to integrate their systems with GF-X, and provides assistance in implementing process changes.
- *User support* – Provides training, helpdesk support, and expert support to carrier helpdesks for monitoring transactions to all users.

GF-X has “an army” of technicians responsible for the daily monitoring and maintenance of the system.

Zoppos admits that the success of GF-X can largely be attributed to its “partnerships” and alliances.¹⁵⁰ In fact, the organisation is so dedicated to its alliances that it has

¹⁴⁹ The benefits of the new business models e-business facilitates are examined in Chapters 2 and 3 and in Appendices A and C.

¹⁵⁰ The nature of (formal and informal) networking is described in Chapter 2 (Lei and Slocum, 1992; Möller, 1992; Golden and Dollinger, 1993; Gibb, 1993; Grönroos, 1994; Ozcan, 1995; Webster, 1995; Mowery *et al.*, 1996; Raymond and Bergeron, 1996; Rosenfeld, 1996; Auger and Gallagher, 1997; Gummesson, 1997;

established an Advisory Council to represent the views of the airfreight industry. The Council includes senior executives of GF-X and its member clients. It aims to promote electronic transactions and electronic commerce in general, and to act as a forum for the business to receive feedback from its clients and to listen to their suggestions for operational improvements and innovations. A number of the other “partnerships” fundamental to GF-X’s operations are:

- *Air Forwarders Association* – A non-profit organisation formed in 1990 to “safeguard and further the interests” of air forwarders, the Association believes that partnership and co-operation are “imperative.” Accordingly, it aims to:
 - Help members maintain and increase market share.
 - Improve systems and operating conditions.
 - Increase profits.
 - Create marketing opportunities.
 - Impact legislation affecting the air industry.
- *Azertia* – GF-X has an exclusive agreement with Azertia (a Spanish multi-national company which provides IT services and solutions) for the distribution of its products and services in the Spanish market.
- *International Freight Logistics Network (IFLN)* – A global alliance of independent transportation and logistics providers offering shippers and consignees a cohesive, personal and cost-effective one-stop service for all their shipments worldwide. IFLN, which launched in mid-2000, is a global network composed of 127 companies with consolidated sales of US\$1.7 billion. Its members operate over 260 offices in 90 countries, with a total staff of 6,500 employees. GF-X has a global agreement with the IFLN network to offer its members access to GF-X products and services.
- *TIACA* – A worldwide air logistics organisation, TIACA’s mission is “to advance the interests” of the air cargo industry. Pledged “to support and assist progressive

Dean *et al.*, 1997; Gimeno *et al.*, 1997; Tikkanen, 1998; Achrol and Kotler, 1999; Jeal and Wroe, 1999; Keeble *et al.*, 1999; Miles *et al.*, 1999; Dennis, 2000; Overby and Min, 2000; 2001; Engsbo *et al.*, 2001; Premaratne, 2001; O'Donnell *et al.*, 2001; Bar Nir and Smith, 2002).

liberalisation of the global market and easier, enhanced trade between developing and developed economies,” TIACA works to develop world trade by reducing costs through enhanced competition and the “elimination of regulatory constraints.”

- *Mercator* – The IT subsidiary of the Emirates Group, based in Dubai, Mercator has developed a comprehensive portfolio of airline financial systems, air cargo systems and passenger services systems, including a customer relationship management system.

Although GF-X employs “an army” of consultants to deal with regulatory requirements, Zoppos admits to being “unaware” of any EU or UK policies, initiatives or programmes generated to stimulate SMEs generally, or to promote their adoption and implementation of e-business specifically, except when they were outlined to him by the researcher during the Dialogical AR-inspired “reflective dialogues.” As far as Zoppos is aware, neither he nor any of his board has ever considered government support services to that effect.¹⁵¹

Zoppos was enthusiastic when the researcher suggested to him that perhaps funds from a part of one (apparently invisible) government initiative could be spent on conducting either a workshop or series of workshops, from which more in-depth information could be generated from a number of SME owner/managers. He agreed that such a workshop/series of workshops would (likely) place SME owner/managers in circumstances where they would be able to discuss the issues that concerned them in a more participative manner than has thus far been the case. As a result of the information that might come to light from such workshops, Zoppos felt sure that policy makers would likely be better informed - and therefore better equipped - to generate relevant and visible policies to meet the needs of SMEs, and to therefore encourage them to adopt and implement e-business.

Zoppos, when asked what would be likely to encourage him to donate his time and/or resources to collaborate with the policy makers, in order that more visible, appropriate and accessible policy initiatives can be generated for the benefit of his business and/or

¹⁵¹ This issue is addressed in some detail in Chapter 4.3.

industry, replied that only financial incentives would motivate him “or people like [him]” to donate their time and/or resources. However, he viewed the concept of the workshop(s) extremely positively.

Although the full research process was carried out on GF-X, for the reasons recounted here, it is presented as an overview, and not as an in-depth case. When the fieldwork began, GF-X had 80 employees and 75 contract technologists, with bases in London, New York, Dubai and Tokyo. During the fieldwork period, GF-X’s annual turnover grew to “well in excess” of the £11.2 million figure that the (UK’s) Companies Act defines as a “medium-sized” business. The business now also exceeds the EU Communication recommendation of a maximum annual balance sheet total of 40 million euros. In addition, GF-X no longer fulfils the EU Communication maximum percentage recommendation of a business’s ownership not exceeding 25% being owned by one, or jointly by several, enterprise(s). Finally, GF-X’s staff numbers now exceed 250, once long-term IT contractors are factored in.

Founded in 1998, GF-X initially raised US\$85m in venture capital. Consolidated Press Holdings and Morgan Stanley Dean Witter held the majority of equity at that time. Equity stakes have subsequently been taken by American Airlines, British Airways, Deutsche Post World Net, Lufthansa Commercial Holding, Panalpina World Transport (Holdings) and SAirLogistics.

Having studied Design Bridge, Foyles and GF-X, the fourth and final case overview is presented next. Toast is a mail order clothing and accessories business.

8.5 CASE STUDY OVERVIEW – TOAST

Toast <www.toastbypost.co.uk> is a successful mail order catalogue business retailing “chic and stylish, yet offbeat and quirky” clothes and accessories. The business was founded in September 1997 by the husband and wife team Jamie and Jessica Seaton in their (Llandeilo, Carmarthenshire, Wales) kitchen to sell pyjamas manufactured in India by mail order in the UK. The successful company was, over the course of the fieldwork

period, transformed from a family-run affair into a nationwide business with an annual turnover of around £8 million.

Soon after its launch, Toast started selling “other things” that the Seatons believed their customers would like. Capitalising on the “cocooning” tendencies of those who work from home, Toast exploits the concept of coveting a certain lifestyle. The company’s message is clear, according to Jessica Seaton, co-founder and General Manager of Toast: “buy the product, and you buy into the lifestyle.”

“The idea was always to keep things simple but good quality, using the best fabrics we could afford,” Seaton says. “When I design, I imagine our friends wearing the clothes, people like us. We sell to people aged from 20 to 75.” The vast majority of Toast devotees are likely to be in the 30-50 age group, however. “And people wear Toast in the arts, the media, advertising.” The clothes are “understated, vaguely ethnically inspired separates in warm colours,” Seaton explains.

Seaton believes that the secret of Toast’s success is down to “combining reasonable prices – by no means cheap, but less expensive than the big designer names – with desirable raw materials and a thoughtful but never overwrought approach to design that appeals to many and can be easily adapted to suit the wearer’s personal style.”

“We like clothes that are anti-fashion, clothes that are unpretentious but still lovely,” Seaton claims, going on to explain that Toast makes “high-end, coolly simple clothes and home accessories” and sells them from a “beautiful mail order catalogue” that is shot “in far-out and exotic locations the world over and brought to life by Jamie’s poetic travel observations.” Further, Toast has an “excellent media profile” in magazines and broadsheet newspapers. Seaton proudly claims that Toast “gets more money from each catalogue mailed than almost any other similar UK company” because “the products are so desirable, and because they are exclusive to Toast.”¹⁵²

¹⁵² This is in line with the findings of research presented in Chapters 2 and 3 and in Appendices A and C regarding e-business enabling small operators to operate a niche business whilst obtaining access to a wider customer pool than would otherwise be the case (Sterne, 1996; Abell and Lim, 1996; Coccia, 1997; Kalakota and Whinston, 1997; Lawrence, 1997; Bennett, 1997; 1998; Poon and Swatman, 1997a; 1999a; 1999b; Puhakainen and Brännback, 1998; Kalakota and Robinson, 1999; Kaplan and Sawhney, 2000; Reimenschneider and Mykytyn, 2000; Turban et al., 2000; Lee, 2001; Phan, 2001; Wilson, 2001; Daniel and

The Seatons still live in the “rustic idyll” of Llandeilo, Carmarthenshire. There’s a Toast sale shop there and, Seaton claims, people travel “from far and wide” to pick up the company’s “carefully considered” clothing and accessories line. Toast also has concessions in Selfridges and Harvey Nichols and (sales shop aside) the first Toast store recently opened in Harrogate. Located in Yorkshire, Harrogate holds the UK’s largest fashion wholesale and distribution trade fairs. As a result of the sheer numbers of wholesalers and retail buyers who regularly pass through, Harrogate was considered both a cost-effective and strategically astute choice for the first Toast store, as well as being “an incredibly lovely town,” according to Seaton. More stores are planned to open in the near future, but Seaton does not want them to appear in the country’s more obviously glamorous locations. “Our approach to opening shops is a guerrilla one,” she argues. “We’ll try to avoid the expected, show up here and there where we like the town and there is a good space, surprise people and then, hopefully, please them.”

The Seatons met while studying archaeology at Birmingham University. With money that they received as a wedding present, they bought a knitting machine and a book of patterns, and created their first company, the J&J Seaton knitwear business, which produced “incredibly elaborate” sweaters. Although soon defunct, it “whet [their] appetite.” They went on to work in (separate) advertising agencies, but the idea of running their own successful mail-order clothing business “someday” remained with the couple.

The Seaton’s astute utilisation of the internet as a marketing tool helped turn their “mom and pop shop” into a multi-million pound enterprise. In 2001, they sold a 75% holding in Toast to the French Connection Group, which operates a number of additional brands, including: French Connection/FCUK, Nicole Farhi and Great Plains. The French Connection/FCUK brand accounts for about 90% of the business. Toast is still operated by the Seatons, however, and remains based in Wales.

The French Connection Group merged the fulfillment of its own mail order business, Buy Mail, into Toast’s operation, in order to provide “an economic and customer focused

back-office fulfillment service.” Toast already had its own warehouse and call centre. “They amalgamated their mail order business with us, so we can grow together much more cost-effectively,” says Seaton.¹⁵³ Together with the potential for growth of the Toast business itself, this represented a significant benefit of the acquisition for the Group.

The capital raised from the sale to the Group has provided equity to develop the potential and the strength of the Toast brand. Seaton wants to grow the brand “as big as it can get,” through a combination of mail order, retail and e-commerce.¹⁵⁴

Seaton does not consider the networking that Toast undertook, “which was all about garnering positive PR to save us having to pay to advertise!” to be “really about either forging networks or striking alliances.” However, she concedes that the “operational and infrastructure partnerships” that Toast has gained since its majority sharehold purchase by the French Connection Group have been “wonderful.”¹⁵⁵

Seaton admits that she has been “completely unaware” of any EU or UK policies, initiatives and programmes generated to stimulate SMEs generally, and to promote their adoption and implementation of e-business specifically. She considers that such policies and initiatives were “never apparent,” except when they were described to her during the “reflective dialogues” with the researcher. Although she did look for technical assistance and investment in order to grow the brand, it “never occurred” to her to research or

¹⁵³ Scalability and the flexibility to streamline operations and customer fulfilment as benefits of SMEs adopting and implementing e-business is addressed in Chapter 3 and Appendices A and B (Iocovou *et al.*, 1995; Currie, 1998; Chappell and Feindt, 1999; Hadjimonolis, 1999; Feinberg and Eastlick, 1997; Kalakota and Whinston, 1997; Ghosh, 1998; Troye-Walker, 1998a; 1998b; Evans and Wurster, 1999; Fraser *et al.*, 2000; Smallbone *et al.*, 2000; Timmers, 2000; Vescovi, 2000; Porter, 2001; Rayport and Jaworski, 2001; Olave and Nato, 2001; Quayle, 2002a; 2002b).

¹⁵⁴ SME growth hindered by a lack of financial (and other) resources is addressed in Chapters 2 and 3, and in Appendices B, E and F (Dandridge, 1979; Welch and White, 1981; DeLone, 1988; Blili and Raymond, 1993; Cragg and King, 1993; Gaskill *et al.*, 1993; Thong *et al.*, 1993; Gaskill and Gibbs, 1994; Reynolds *et al.*, 1994; Tidd *et al.*, 1997; Thong, 1999; 2001; Raymond, 2001).

¹⁵⁵ The nature of (formal and informal) networking is described in Chapter 2 (Lei and Slocum, 1992; Möller, 1992; Golden and Dollinger, 1993; Gibb, 1993; Grönroos, 1994; Ozcan, 1995; Webster, 1995; Mowery *et al.*, 1996; Raymond and Bergeron, 1996; Rosenfeld, 1996; Auger and Gallagher, 1997; Gummesson, 1997; Dean *et al.*, 1997; Gimeno *et al.*, 1997; Tikkanen, 1998; Achrol and Kotler, 1999; Jeal and Wroe, 1999; Keeble *et al.*, 1999; Miles *et al.*, 1999; Dennis, 2000; Overby and Min, 2000; 2001; Engsbo *et al.*, 2001; Premaratne, 2001; O'Donnell *et al.*, 2001; Bar Nir and Smith, 2002).

approach government services and initiatives at any stage of Toast's inception and development.¹⁵⁶

When the researcher suggested to Seaton that perhaps funds from a part of one (apparently invisible) government initiative could be spent on conducting either a workshop or series of workshops, from which more in-depth information could be generated from a number of SME owner/managers, she wholeheartedly agreed that such a workshop/series of workshops would (likely) place SME owner/managers in circumstances where they would be able to discuss the issues that concerned them in a more participative manner than has thus far been the case. As a result of the information that might come to light from such workshops, Seaton was "sure" that policy makers would likely be better informed, and thereby better equipped, to generate relevant and visible policies to meet the needs of SMEs, and thereby to encourage them to adopt and implement e-business.

When asked what would be likely to encourage her to donate time and/or resources to collaborate with the policy makers who aim to facilitate businesses such as hers, in order that more visible, appropriate and accessible policy initiatives can be generated for the benefit of her business and/or industry, Seaton replied, "money, loans or grants." She indicated that she would also be prepared to participate in the workshop(s) because it "might be another way to raise the profile of the brand." She considers, however, that for many other smaller businesses without the benefits of Toast's equity (provided by the French Connection Group) that "money, or the prospect of it, would be the most likely incentive." She felt that the concept of such workshops was "a fantastic idea" and felt that, if undertaken, the workshop(s) "could really change things for the better, as it seems that so much money is wasted."

Toast operates with "only 14 employees." All clothing manufacture is outsourced to factories overseas. The staff working in the Toast concessions (such as the one in Selfridges, Oxford Street, London and in Harvey Nichols in both London and Leeds), are employed and paid by the host retailer. Although (still) not yet profitable, the turnover of Toast was over £8 million at the end of 2002. However, as the French Connection

¹⁵⁶ This issue is addressed in some detail in Chapter 4.3.

Group now owns 75% of Toast, the business no longer qualifies as either a “small-” or “medium-sized” enterprise under the EU Communication recommendation. Although the complete research protocol was undertaken on Toast throughout the fieldwork period and subsequently, it is accordingly presented here as an overview.

8.6 SUMMARY

We have seen that a significant number of government projects and policy initiatives directed at SMEs have been introduced in recent years, yet the evidence arising from this and other research strongly indicates that such policies and initiatives are failing to reach their target audience. Designed as a preliminary study, this research has ascertained the recognition levels and practical impact of such policy initiatives on SMEs, based on the experiences of the seven UK case organisations presented in this and the previous chapter, with a view to instruct constructive and feasible changes to policy making. This has been achieved thus far through a narrative research approach informed by ACR and Dialogical AR. SSM conceptual modelling will be employed in the forthcoming chapters (9 and 10), in order to draw together and reconcile the seemingly disparate worlds of the research.

As has been explained throughout, the thesis explores a complex and ill-structured problem situation with multiple owners and that can be viewed from a variety of stances. The opportunistic selection of the research sites was recounted in Chapter 6, as were the research procedures, and the reflections on the researcher’s skills and background (provided as evidence of her understanding of the organisational setting). Building on this, the previous chapter (Chapter 7) described three of the seven UK SME case organisations (Berkeley Square Gallery, Davis & Co. and Lobster) in detail. Developing the research further, this chapter overviewed the remaining four case studies (Design Bridge, Foyles, GF-X and Toast).

Chapter 9, which follows, discusses the research issues that arose from the case organisations, paying particular attention to the following:

- Drivers to e-business adoption.

- Development and implementation.
- Networks and alliances.
- Perspectives on government policies and initiatives.

The theoretical developments outlined in the earlier chapters combined to form the framework for SSM modelling that will be utilised in the next chapter to resolve the policy generation issue. SSM conceptual modelling will not only be used for sense-making and information analysis purposes, but also for the provision of strategies for resolving the identified problems in the context of this research work. Chapter 5 explained that SSM is well established as a management problem-solving tool, following an interpretive ontology and an epistemology that employs systems theory in the construction of intellectual devices to learn about the world. The use of SSM conceptual modelling in the research has been shown to be conventional and well understood.¹⁵⁷

The theoretical framework was selected to support data collection. It was intentional that the data and case study materials were separated from the analysis (as far as possible) in the writing, in order that the researcher could present her analysis and show that her conclusions are valid. It has been shown that the research was overt and conducted in collaboration with the case organisation principals. The end product of this research process has been described by the researcher as proffering specific implications in a particular domain. Whilst the theoretical foundations of the research have been explained in detail, the outcome, or resolution of these concepts could not be fully developed until after the fieldwork data on the case organisations was presented. Therefore, elaboration was necessarily deferred until the analysis of fieldwork data in the two concluding chapters of the thesis.

In the chapter that follows (Chapter 9), the analysis will provide insight into the complex political and cultural situation of the case study organisations, and the endemic multiple interlinking problems. The relationships between concepts central to the thesis will be aligned, and a model of the situation proposed which is consistent with the interpretive philosophy of the research, and able to be supported by SSM tools.

¹⁵⁷ Chapter 5 explains the SSM methodology and modelling process.

Keeping in mind that this research was intended from the outset to be a preliminary study, the next, penultimate, chapter draws together the different strands of the research, in preparation for the conclusion and suggestions for future research that are presented in Chapter 10. In Chapter 9, these key areas of the research are presented in the following order, mirroring the presentation of the case study findings in this chapter and the one that preceded it:

- Drivers to e-Business Adoption
- Development and Operational Issues
- Networks and Alliances
- Perspectives on Government Policies and Initiatives
- Case Organisations Overview

Supplementary information referred to in this chapter is located in the following appendices:

- Appendix A – The Advantages of e-Business Adoption and Implementation
- Appendix B – SME Characteristics
- Appendix C – Drivers to e-Business Adoption by SMEs
- Appendix E – Barriers to e-Business Adoption by SMEs
- Appendix F – The Disadvantages of e-Business Adoption and Implementation
- Appendix O - Findings Arising From the Case Studies Relating to the Literature Review
- Appendix P - Findings Arising From the Case Studies Not Relating to the Literature Review

Chapter 9

Discussion of the Seven Case Organisations

9.1 INTRODUCTION

By means of a thorough examination of the literature and the case studies, it has been shown that change and dynamism characterise the SME sector. The researcher was fortunate that none of the participating SME case organisations went out of business during the fieldwork and subsequent writing up periods – absorption by a larger organisation or conglomerate (which occurred in the cases of Lobster and Toast), does not equal dissolution. This level of prosperity and growth experienced by these seven case organisations would seem to be, however, statistically uncharacteristic of the SME sector as a whole.¹⁵⁸

In this chapter, the drivers of and the inhibitors to the adoption of e-business by these seven UK case organisations are examined against – and compared with – the findings of the research emerging from the literature review presented in Chapters 2, 3 and 4. This examination is followed by a consideration of the implementation issues and the benefits (or otherwise) of networks and alliances for SMEs as experienced by the case organisation principals. These considerations are also presented in comparison with the earlier research presented in Chapters 2, 3 and 4. The discussion scrutinises the case organisation principals' perspectives on government policies and initiatives, before the concluding section of the chapter draws together and synthesises the research, therein presenting the rich understandings that have arisen.

¹⁵⁸ This is in line with the explanation tendered in Chapter 2 that SMEs are less likely to expand than large businesses (Churchill and Lewis, 1983; Disney *et al.*, 2000; Dale and Morgan, 2001; SBS, 2004b). It was also presented in that chapter that most job creation in the UK SME sector comes from start-ups rather than from the expansion of existing businesses (DeLone, 1981; 1988; Cooley *et al.*, 1987; Martin, 1989; DTI, 1993a; 1993b). However, it was noted that some researchers (among them: Kim and Lee, 1998; Kennedy and Healy, 1985) found that the “greater volatility” of SMEs translates to higher gains, losses and closures than for larger organisations – this volatility is evidenced by small businesses being responsible for around 66% of UK job losses (SBS, 2004b).

Hawkins *et al.* (1995) and Hyland and Matlay (1997) found that SMEs with fewer than 10 employees were less likely to adopt e-business than were larger small businesses. However, the findings from the seven UK case organisations, who show that e-business can be successfully devised, adopted and implemented by smaller SMEs to develop new markets, contradict the findings of these researchers. That several of the case organisations were pure-player internet start-ups (Davis & Co., GF-X and Lobster) inevitably and fundamentally affected their propensity to adopt e-business, in line with the findings of Donckels and Lambrecht (1997, as presented in Chapter 3), who offered “market focus” as a primary motivator to e-business adoption and implementation. Poon and Swatman (1997a; 1997b; 1997c), APEC (1999) and Porter (2001), among others (in findings also presented in Chapter 3), suggest that SMEs tend to adopt e-business to reach new markets. The data arising from each of these case organisations supports their view. Confirmation, however, requires further investigation with a broader variety of case organisations. Certainly, the cases presented here, individually and collectively, seem to provide excellent examples of how online business models can be used successfully in tandem with offline business activities, and of how a combination of tactical objectives (such as efficiency and cost reduction, with emergent business/IT strategy models) can successfully be executed. These case organisations illustrate the successful implementation of seven UK SMEs trading online, albeit with strikingly different business ventures, goals and achievements. These findings are in line with a number of researchers who have observed that interest in e-business and the internet grows as participants start gaining hands-on experience and realise its potential.¹⁵⁹

We have seen that a significant number of government projects and policy initiatives directed at SMEs have been introduced in recent years, yet the evidence arising from this and other research strongly indicates that such policies and initiatives are failing to reach their target audience. Designed as a preliminary study, this research has ascertained the

¹⁵⁹ Comprehensive references for these findings are presented in Chapter 3 and in Appendices B, C and E. (The comprehensive reference list includes: Cragg and King, 1993; Venkatraman, 1994; Lefebvre and Lefebvre, 1993; Geroski, 1995; Iacovou *et al.*, 1995; Rogers, 1995; Abell and Lim, 1996; Coccia, 1997; Donckels and Lambrecht, 1997; Eden *et al.*, 1997; Evans and Wurster, 1997; Lawrence, 1997; Poon and Swatman, 1997b; 1997c; Cobbenhagen and Nauwelaers, 1999; Nilsson *et al.*, 1999; Kaplan and Sawhney, 2000; Reimenschneider and Mykytyn, 2000; Timmers, 2000; Turban *et al.*, 2000; Engsbo *et al.*, 2001; Levy *et al.*, 2001a; 2001b; Mullins *et al.*, 2001; Porter, 2001; Raymond, 2001; Rayport and Jaworski, 2001; Sathye and Beal, 2001; Tetteh and Burn, 2001; Daniel and Wilson, 2002; Power and Sohal, 2002; Quayle, 2002a; 2002b; Windrum and Berrenger, 2003; Windrum, 2004).

recognition levels and practical impact of such policy initiatives on SMEs, based on the experiences of the seven UK case organisations, with a view to instruct constructive and feasible changes to policy making. This has been achieved thus far through a narrative research approach informed by ACR and Dialogical AR.

The thesis explores a complex and ill-structured problem situation with multiple owners and that can be viewed from a variety of stances. The opportunistic selection of the research sites was recounted in Chapter 6, as were the research procedures, and the reflections on the researcher's skills and background (provided as evidence of her understanding of the organisational setting). Building on this, Chapter 7 described three of the seven UK SME case organisations (Berkeley Square Gallery, Davis & Co. and Lobster) in detail. Developing the research further, Chapter 8 overviewed the remaining four case studies (Design Bridge, Foyles, GF-X and Toast).

The theoretical framework was selected to support data collection. The researcher made an intentional decision to separate the data and case study materials from the analysis as far as possible in the writing, in order that the researcher could (attempt to) judge the validity of the analysis and conclusions. The end product of the research process can be characterised as proffering specific implications in a particular domain. Whilst the theoretical foundations of the research have been explained in earlier chapters in some detail, the outcome, or resolution of these concepts could not be fully developed until after the fieldwork data on the case organisations was presented. Therefore, elaboration was necessarily deferred until the analysis of fieldwork data in these two concluding chapters of the thesis.

The theoretical developments outlined in the earlier chapters combined to form the framework for SSM modelling that will be utilised in this chapter and the next to resolve the policy generation issue. SSM conceptual modelling is not only used for sense-making and information analysis purposes, but also for the provision of strategies for resolving the identified problems in the context of this research work. Chapter 5 explained that SSM is well established as a management problem-solving tool, following an interpretive ontology and an epistemology that employs systems theory in the construction of intellectual

devices to learn about the world. A comprehensive summary of the findings arising from the case studies, in light of the Literature Review, is presented in Appendices O and P.

In this, the thesis' penultimate chapter, the analysis will provide insight into the complex political and cultural situation of the case study organisations, and the endemic multiple interlinking problems. The relationships between concepts central to the thesis will be aligned, and a model of the situation proposed which is consistent with the interpretive philosophy of the research, and able to be supported by SSM tools. The use of SSM conceptual modelling in the research has been shown to be conventional and well understood.¹⁶⁰ SSM conceptual modelling will be employed here and in the concluding chapter in order to draw together and reconcile the seemingly disparate worlds of the research.

The issues arising throughout the literature review have been summarised in tables: Table 2.3 – The Key Issues Arising from the SMEs Literature Review, Table 3.1 – The Key Issues Arising from the e-Business Literature Review, and Table 4.4 – The Key Issues Arising from the Policy Initiatives Literature Review. Table 5.1 drew these issues together, and Figure 6.1 built on this synthesis with a summary of how these issues will be investigated. Figure 9.1 shows the development of the thesis to date:

¹⁶⁰ Chapter 5 explains the SSM methodology and modelling process.

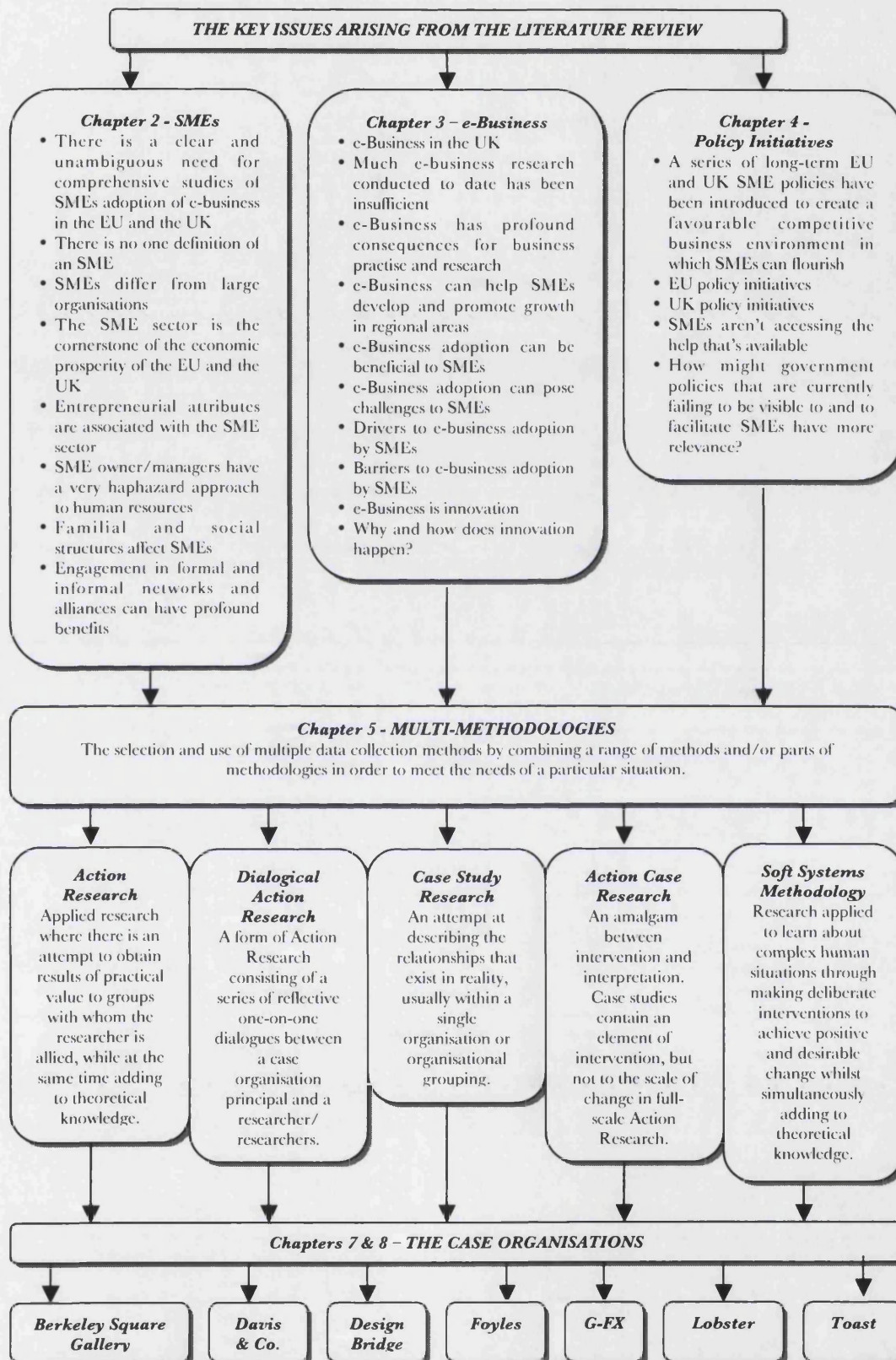


Figure 9.1 – The development of the research thus far

The following two tables serve to illustrate aspects of the case organisations' business activities. Table 9.1 provides an overview of the nature of the case organisations' operations, while Table 9.2 shows to what extent the products and services the case organisations purvey are available online.

Case	Business	Add-on (A) or new (N) business	Niche (N) or mass-market commodity (C)	User (U) or provider (P) of technology
Berkeley Square Gallery	Art gallery	A	N	U
Davis & Co.	Law firm	N	C	U+P
Design Bridge	Design agency	A	C	U
Foyles	Book store	A	N	U
G-FX	Air cargo bookings system	N	N	U+P
Lobster	Fine foods	N	N	U
Toast	Mail-order clothing	A	N	U

Table 9.1 – Overview of cases (adapted from Timmers, 2000: 48)

Case	Business	Sells (S) or creates (C) goods or services	Orders completed on website	Transactional Website
Berkeley Square Gallery	Art gallery	S	N	N
Davis & Co.	Law firm	C+S	N	N
Design Bridge	Design agency	C+S	N	N
Foyles	Book store	S	Y	Y
G-FX	Air cargo bookings system	C+S	Y	Y
Lobster	Fine foods	S	Y	Y
Toast	Mail-order clothing	S	Y	Y

Table 9.2 – Case organisation website transaction levels

Informed by the literature review, and with the above issues in mind, the next section of this chapter analyses the drivers to e-business adoption that were pertinent to the case study organisations. This discussion is followed by a recount of the development and operational issues that arose as a result of their adopting and implementing e-business. The case organisation principals' attitudes and experiences of formal and informal

networks and alliances are recounted. Subsequent to this presentation, the perspectives of the case organisation principals on government policies and initiatives are tendered. Building on these, the different aspects of the research are drawn together.

Keeping in mind that this research was intended from the outset to be a preliminary study, this chapter draws together the different strands of the research, in preparation for the conclusion and suggestions for future research that are presented in Chapter 10. These key areas of the research are presented in the following order, mirroring the presentation of the case study findings in the previous two chapters:

- Drivers to e-Business Adoption
- Development and Operational Issues
- Networks and Alliances
- Perspectives on Government Policies and Initiatives
- Case Organisations Overview

Findings that tie in with the literature are noted in the footnotes to the chapter. As in the previous two chapters, there are so many extensive references (50 in this chapter, alone) that, had they been incorporated into the main text, they would have interrupted the narrative flow.

9.2 DRIVERS TO E-BUSINESS ADOPTION

The participating case organisations all recognised the potential strategic opportunities offered by embracing e-business, and they each sought to realise them. These opportunities included:

- Growing their market share (eg. Berkeley Square Gallery, Design Bridge, Foyles, Toast).¹⁶¹

¹⁶¹ In line with the explanation provided in Chapter 3, and references listed in Appendices A and C (including: Bekker and Staude, 1988; Devins, 1994; Abell and Limm, 1996; Guthrie and Austin, 1996; Quelch and Klein, 1996; Sterne, 1996; Raymond and Bergeron, 1996; Angehrn, 1997; Bennett, 1997; 1998; Cairncross, 1997; Hamill and Gregory, 1997; Julien *et al.*, 1997; Kalakota and Whinston, 1997; Lawrence, 1997; Poon and Swatman, 1997a; 1997b; 1997c; Poon and Strom, 1997; Currie, 1998; O'Keefe and McEachern, 1998; Puhakainen and Brännback, 1998; Watson *et al.*, 1998; Peypoch, 1998; APEC, 1999; Kalakota and Robinson, 1999; Leidner, 1999a; 1999b; Shapiro and Varian, 1999; Hawkins and Prencipe,

- Surpassing competitors (eg. Berkeley Square Gallery, Davis & Co., GF-X, Lobster, Toast).¹⁶²
- Transforming their organisations (eg. Davis & Co. and G-FX have automated their procedures to the extent that the bulk of them are conducted online – in effect, enabling the companies to outsource much of their administrative work to their customers).¹⁶³
- Personalising customer relationships.¹⁶⁴

These organisations recognised:

- How to identify and retain their most profitable customers.
- How to find their most valuable customer segments.
- How to understand their customers' specific needs by co-ordinating off- and online channels to their greatest strategic advantage.

The seven case organisation principals all reported the following “significantly greater benefits” as a result of e-business adoption and implementation:

- Costs.
- Relationships with business partners.
- Internal efficiency.

2000; Turban *et al.*, 2000; Vescovi, 2000; Martin and Matlay, 2001; Raymond, 2001; Ritchie and Brindley, 2001; Sparkes and Thomas, 2001; Trappey and Trappey, 2001; Quayle, 2002a; Vrazalic *et al.*, 2002).

¹⁶² In line with Chapter 3, and references listed in Appendices A and C on improved competitiveness and customer services (including: Porter and Millar, 1985; Abell and Lim, 1996; Guthrie and Austin, 1996; Sterne, 1996; Auger and Gallagher, 1997; Coccia, 1997; Feinberg and Eastlick, 1997; Poon and Swatman, 1997a; 1997b; 1997c; 1997d; 1999a; 1999b; Kalakota and Whinston, 1997; McKenna, 1997; Currie, 1998; Ghosh, 1998; Radstaak and Ketelaar, 1998; Watson *et al.*, 1998; Evans and Wurster, 1999; Fraser *et al.*, 2000; Kaplan and Sawhney, 2000; Timmers, 2000; Vescovi, 2000; Porter, 2001; Rayport and Jaworski, 2001; DTI, 2002a; 2002c; Daniel and Grimshaw, 2002; Power and Sohal, 2002).

¹⁶³ In line with research presented in Chapter 3, and references listed in Appendices A and C.

¹⁶⁴ In line with research presented in Chapter 3 and references in Appendices A and C on improved relations with business partners and customers (including: Blattberg and Deighton, 1991; McWilliams, 1995; Abell and Lim, 1996; Quelch and Klein, 1996; Stern, 1996; Kalakota and Whinston, 1996; 1997; Auger and Gallagher, 1997; Cairncross, 1997; Feinberg and Eastlick, 1997; McKenna, 1997; Peppers and Rogers, 1997; Poon and Strom, 1997; Poon and Swatman, 1997a; 1997b; 1997c; Brannback and Puhakainen, 1998a; 1998b; Currie, 1998; Gullede and Sommer, 1998; O'Keefe and McEachern, 1998; Palumbo and Herbig, 1998; Puhakainen and Brännback, 1998; APEC, 1999; Kalakota and Robinson, 1999; Shapiro and Varian, 1999; Hawkins and Principe, 2000; Vescovi, 2000; Porter, 2001; Sparkes and Thomas, 2001; Quayle, 2002a; 2002b).

- Increased quality of information.

This would tend to support the findings of advocates for e-business adoption by SMEs.¹⁶⁵ On the basis of the experiences communicated by the principals of these case organisations, it would seem that the following attributes are crucial to successful e-business SME adoption and implementation:

- Recognition of – and support from – senior management for the strategic implications of e-business (otherwise the necessary funds and other resources would not be made available).
- Recognition and employment of effective strategies to launch, adapt and maintain online operations.
- Relevant analysis of the strategic opportunities e-business facilitates.
- Comprehensive integration of e-business into the organisations' core activities (which in turn provide opportunities for further transformation).¹⁶⁶

Only one of the seven case organisation principals involved in this research was (seemingly) primarily motivated by a purely pioneering spirit of enthusiasm rather than conscious strategising (Berkeley Square Gallery). The principals of the other six case organisations had at least some element of strategising before they adopted e-business. These latter case organisation principals all felt that the process of incorporating an element of strategy had resulted in a positive impact on their subsequent success, had enabled them to better serve their customers with a more focused approach, and had lent a sense of purpose to their online operations.¹⁶⁷ The principals of these organisations all felt that they had learnt from the experience of planning. However, the process of “planning” took very different forms for the case organisations. The more formal planning process that took place (in Foyles, GF-X and Toast) resulted in a more focused approach being adopted in a number of areas:

¹⁶⁵ As detailed comprehensively in Chapters 2 and 3 and in Appendices A, B and C (Fuller, 1992; 2000; Goldman *et al.*, 1995; Mougayer, 1998; Currie, 1998; Drucker, 1998; Ghosh, 1998; Evens and Wurster, 1999; Violino, 2000; Porter, 2001).

¹⁶⁶ These attributes are mentioned in greater detail in Chapters 2 and 3 and in Appendix C.

¹⁶⁷ As detailed in Chapter 3 and Appendices A and C.

- These organisations gained competitive intelligence and ideas by investigating formally their competitors' websites.
- The planning process provided a "roadmap."
- It enabled them to better exploit their e-business potential, as planning had enabled them to feel that they "knew what to do."¹⁶⁸

The principals in these organisations felt that e-business was an ideal sales and distribution network, and that it would also be an efficient way of utilising their existing technology (except for Lobster, G-FX and Davis & Co., which were start-ups – as such, their business models were enabled by e-business). These case study principals also felt that many of the systems and practices they needed to operate effectively online were already in place before making the decision to launch online operations. They believed that, as a result, they would be subject to fewer operating costs than their competitors (this, however, has not proved to be the case in any of the case organisations).¹⁶⁹ In addition, each of the case organisations viewed the adoption of e-business as an opportunity to extend their market reach, at the same time fulfilling their customers' expectations and keeping their brands relevant.¹⁷⁰

Tactically, when the case organisations examined in this research looked to begin trading online, they aimed to achieve at least one of the following benefits:

¹⁶⁸ This is in line with findings regarding strategic organisational and management attributes presented in Chapters 2 and 3 and in Appendices A, C, E and F.

¹⁶⁹ This outcome of adopting and implementing e-business is featured in Appendix F (Murphy, 1996; MacGregor *et al.*, 1998; Ritchie *et al.*, 1999; Stauber, 2000; Lee, 2001; Porter, 2001; Sparkes and Thomas, 2001).

¹⁷⁰ In line with the findings of a large number of researchers, as presented in Chapter 2 and in Appendices A and C (among them: Blattberg and Deighton, 1991; Devins, 1994; McWilliams, 1995; Abell and Limm, 1996; Guthrie and Austin, 1996; Raymond and Bergeron, 1996; Stern, 1996; Kalakota and Whinston, 1996; 1997; Bennett, 1997; 1998; Quelch and Klein, 1996; Angehrn, 1997; Auger and Gallagher, 1997; Cairncross, 1997; Feinberg and Eastlick, 1997; Hamill and Gregory, 1997; Julien *et al.*, 1997; McKenna, 1997; Peppers and Rogers, 1997; Poon and Strom, 1997; Poon and Swatman, 1997a; 1997b; 1997c; Bennett, 1998; Brannback and Puhakainen, 1998a; 1998b; Currie, 1998; Gullett and Sommer, 1998; O'Keefe and McEachern, 1998; Peypoch, 1998; Palumbo and Herbig, 1998; Puhakainen and Brannback, 1998; APEC, 1999; Kalakota and Robinson, 1999; Leidner, 1999a; 1999b; Shapiro and Varian, 1999; Hawkins and Principe, 2000; Ritchie and Brindley, 2000; Turban *et al.*, 2000; Vescovi, 2000; Martin and Matlay, 2001; Porter, 2001; Raymond, 2001; Sparkes and Thomas, 2001; Trappey and Trappey, 2001; Quayle, 2002a; 2002b; Vrazalic *et al.*, 2002).

- Provide additional channels to market.¹⁷¹
- Increase agility, responsiveness, and/or the ability to react to changing market conditions (which would in turn increase market share).¹⁷²
- Achieve competitive advantage.¹⁷³
- Transform relationships with customers, suppliers and business partners.¹⁷⁴
- Redesign their business operations through innovating their organisations.¹⁷⁵
- Reduce overheads and costs per transaction.¹⁷⁶

The data arising from these case organisations indicates that financial resources are not the leading factor in motivating or inhibiting an SME's adoption of e-business.¹⁷⁷ When the principals of these case organisations felt that some new technology would be beneficial to their organisation, they had enough financial freedom to be able to acquire

¹⁷¹ In line with findings presented in Chapter 2 and in Appendices A and C (Devins, 1994; Guthrie and Austin, 1996; Quelch and Klein, 1996; Sterne, 1996; Hamill and Gregory, 1997; Julien *et al.*, 1997; Bennett, 1997; 1998; Cairncross, 1997; Kalakota and Whinston, 1997; Lawrence, 1997; Poon and Swatman, 1997a; 1997b; Currie, 1998; O'Keefe and McEachern, 1998; Puhakainen and Brännback, 1998; Watson *et al.*, 1998; Kalakota and Robinson, 1999; Turban *et al.*, 2000; Vescovi, 2000; Raymond, 2001; Ritchie and Brindley, 2001; Sparkes and Thomas, 2001; Quayle, 2002a).

¹⁷² In line with findings presented in Chapter 3 and in Appendices A and C (Porter and Millar, 1985; Guthrie and Austin, 1996; Sterne, 1996; Feinberg and Eastlick, 1997; Kalakota and Whinston, 1997; McKenna, 1997; Currie, 1998; Ghosh, 1998; Radstaak and Ketelaar, 1998; Watson, *et al.*, 1998; Evans and Wurster, 1999; Fraser *et al.*, 2000; Timmers, 2000; Vescovi, 2000; Porter, 2001; Rayport and Jaworski, 2001).

¹⁷³ In line with findings presented in Chapter 3 and in Appendices A and C.

¹⁷⁴ In line with findings presented in Chapter 3 and in Appendices A and C (Blattberg and Deighton, 1991; McWilliams, 1995; Abell and Lim, 1996; Kalakota and Whinston, 1996; 1997; Quelch and Klein, 1996; Stern, 1996; Auger and Gallagher, 1997; Cairncross, 1997; Feinberg and Eastlick, 1997; McKenna, 1997; Peppers and Rogers, 1997; Poon and Strom, 1997; Poon and Swatman, 1997a; 1997b; 1997c; O'Keefe and McEachern, 1998; Palumbo and Herbig, 1998; Brännback and Puhakainen, 1998a; 1998b; Puhakainen and Brännback, 1998; Currie, 1998; Gullledge and Sommer, 1998; APEC, 1999; Kalakota and Robinson, 1999; Shapiro and Varian, 1999; Hawkins and Prencipe, 2000; Vescovi, 2000; Porter, 2001; Sparkes and Thomas, 2001; Quayle, 2002a; 2002b).

¹⁷⁵ In line with findings presented in Chapter 3 and in Appendices A and C (among them: Timmers, 2000; Rayport and Jaworski, 2001).

¹⁷⁶ In line with findings presented in Chapter 3 and in Appendices A and C (McWilliams, 1995; Abell and Limm, 1996; Raymond and Bergeron, 1996; Angehrn, 1997; Kalakota and Whinston, 1997; Auger and Gallagher, 1997; Coccia, 1997; O'Connor and O'Keefe, 1997; Berg and Karttunen, 1998; Currie, 1998; Radstaak and Ketelaar, 1998; Gullledge and Sommer, 1998; Shapiro and Varian, 1998; MacGregor *et al.*, 1998; APEC, 1999; Hawkins and Prencipe, 2000; Poon and Swatman, 1997a; 1997b; 1997c; Palumbo and Herbig, 1998; APEC, 1999; Fraser *et al.*, 2000; Turban *et al.*, 2000; Hawkins and Prencipe, 2000; Kaplan and Sawhney, 2000; Porter, 2001; Europmedia, 2001; Porter, 2001; Tetteh and Burn, 2000; 2001; Quayle, 2002a; 2002b; Raymond, 2001; Howarth, 2002; Chaston and Mangles, 2002).

¹⁷⁷ In line with findings presented in Appendix C (Howard, 1977; Geroski, 1995; Iacovou *et al.*, 1995; Eden *et al.*, 1997; Coccia, 1997; O'Connor and O'Keefe, 1997; Tidd *et al.*, 1997; Drucker, 1998; Poon and Swatman, 1998a; 1998b; Nilsson, 1999; Premkumar and Roberts, 1999; Kaplan and Sawhney, 2000; Turban *et al.*, 2000; Porter, 2001; Quayle, 2002a; 2002b; Chaston and Mangles, 2002; Raisinghani and Frank, 2003).

it, but all required that either a formal (Design Bridge, Foyles, G-FX, Lobster and Toast) or informal (Berkeley Square Gallery and Davis & Co.) valid business case be presented to ensure returned value from investment. The requisite technology was not considered expensive to acquire except by G-FX (the nature of their product dictated that they had to build its specialised technology from the ground up). At the end of the research fieldwork period, the principals of the case studies (excepting Davis & Co., Foyles and Toast), suspected that their organisations were not fully utilising the technology they had available.

For Berkeley Square Gallery, Foyles, Lobster and G-FX, e-business adoption and implementation reduced their time-to-market and streamlined their internal operations,¹⁷⁸ benefits that substantially contributed to the ability of these organisations to increase their sales and to grow their market share. However, for all seven case organisations, technology acquisition was customer oriented, in that they each sought a customer relationship management solution that consolidated information for better customer support and future sales growth.¹⁷⁹

The case organisations received information about the internet and its perceived benefits from peers and/or the press.¹⁸⁰ Foyles and Toast adopted the internet because other businesses in its sector had already wholeheartedly embraced – and profited from – technology, while the other case organisations (Berkeley Square Gallery, Davis & Co., Design Bridge, G-FX and Lobster) decided to successfully adopt and integrate e-business into their businesses in order to utilise the internet mainly as a cost reduction and communication tool to a set target audience. For GF-X, Foyles and Toast, online transactions were a logical extension of their existing selling techniques.

The case organisations all measured business benefits from their e-business initiatives in terms of:

¹⁷⁸ In line with findings presented in Chapter 3 and Appendices A and C (Porter and Millar, 1985; Guthrie and Austin, 1996; Sterne, 1996; Feinberg and Eastlick, 1997; Kalakota and Whinston, 1997; McKenna, 1997; Currie, 1998; Ghosh, 1998; Radstaak and Ketelaar, 1998; Watson, *et al.*, 1998; Evans and Wurster, 1999; Fraser *et al.*, 2000; Timmers, 2000; Vescovi, 2000; Porter, 2001; Rayport and Jaworski, 2001).

¹⁷⁹ In line with findings presented in Chapter 3 and Appendices A, B and C.

¹⁸⁰ Chapters 1-4 present evidence regarding SMEs seeking out and taking advice from informal, often unprofessional, sources.

- Customer satisfaction.
- Revenue preservation.
- Revenue generation.
- Cost savings.

The seven case organisation principals each recognised that current competitive advantages were likely to be short-lived, and they all therefore intended to keep innovating, in the belief that e-business would play an increasingly important role in their businesses in the future, and in their industries as a whole.

The findings arising from the Dialogical AR-inspired “reflective dialogues” with the case organisation principals show that while the case organisations encountered challenges such as:

- e-Business did not fit (seamlessly) with their products/services.
- A lack of appropriate business models.
- Problems/issues with obtaining approval for the investment and adoption costs.
- Recognising, sourcing and allocating the relevant resources and skills.
- Clashes with the culture of the company.
- Channel conflict issues.
- Lack of technical, operational and/or business management skills.
- Uncertainty about adequate levels of acceptance by suppliers and/or consumers.
- e-Business didn’t fit with the way their customers perceived their business.
- They couldn’t see the advantage(s) of using e-business.
- Customer education.

these barriers did not “define” their situations.¹⁸¹

Pre- or post-implementation security risks were not cited as inhibitors by any of the case organisations, save for Lobster, whose principal, Alex Fitzgibbons, was concerned about the risk of exposure to credit card fraud.¹⁸²

¹⁸¹ A comprehensive list of references of barriers to e-business adoption by SMEs is presented in Appendix E. A similarly comprehensive list of references of the disadvantages of adopting and implementing e-business is presented in Appendix F.

9.3 DEVELOPMENT AND OPERATIONAL ISSUES

Problems arising after e-business adoption and implementation operations commenced in the case organisations were:

- Disintermediation.¹⁸³
- Resistance at various levels (such as suppliers declining to provide products to purely online operations, supplier scepticism and reluctance to deliver directly to customers, a general lack of acceptance by suppliers and/or existing or potential customers, and channel conflicts).¹⁸⁴
- Difficulties with the implementation of business strategies (a lack of clear linkage between the organisation's business skills with the organisation's business strategies and the technology adopted).¹⁸⁵
- Lack of breadth in business skills and a lack of awareness of the range of other skills necessary to run an e-business.¹⁸⁶
- Operational issues, which varied according to each case organisation's circumstances (eg. Lobster outsourced core functions to obtain best practice levels of performance, while G-FX considered it essential to keep core functions in-house). Technical difficulties arose in developing, implementing and operating the websites and systems. As a result, some of the case organisations (eg. Berkeley

¹⁸² In line with research findings presented in Appendices E and F (Aldridge *et al.*, 1997; Purao and Campbell, 1998; Ritchie and Brindley, 2000; Oxley and Yeung, 2001; Dixon *et al.*, 2002; Quayle 2002a; 2002b; MacGregor *et al.*, 2004).

¹⁸³ In line with the findings of research presented in Appendices E and F (Blattberg and Deighton, 1991; Webster, 1995; Lawrence, 1997; Peppers and Rogers, 1997; Poon and Swatman, 1997b; 1997c; Puhakainen and Brännback, 1998; Kalakota and Robinson, 1999; Stauber, 2000; Lee, 2001; Levy *et al.*, 2001a; 2001b; Porter, 2001; Raymond, 2001; Tetteh and Burn, 2001).

¹⁸⁴ In line with references presented in Appendix E (Clarke, 2000; Engsbo *et al.*, 2001; Kotha *et al.*, 2001; Porter, 2001; Drew, 2002)

¹⁸⁵ In line with the findings of research presented in Chapter 2 and in Appendices E and F (Iacovou *et al.*, 1995; Poon and Swatman, 1996b; Tidd *et al.*, 1997; Eden *et al.*, 1997; Auger and Gallagher, 1997; Chappell and Feindt, 1999; DFAT, 1999; Drucker, 1998; 1999a; 1999b; Purao and Campbell, 1998; Thong, 1999; Golden and Griffin, 1999; 2000; Chau and Pederson, 2000; Ratnasingam, 2000; Owens and Beynon-Davies, 2001; Porter, 2001; Barry and Milner, 2002; Dixon *et al.*, 2002; Roberts and Wood, 2002; SETEL, 2002; Quayle, 2002a; 2002b; 2003).

¹⁸⁶ In line with the list of research references presented in Appendices E and F (Iacovou *et al.*, 1995; Poon and Swatman, 1996b; 1997a; 1997b; Auger and Gallagher, 1997; Tidd *et al.*, 1997; Yap and Thong, 1997; Berg and Karttunen, 1998; Purao and Campbell, 1998; Zimmerman and Mathiesen, 1998; Chau and Pederson, 2000; Farhoomand *et al.*, 2000; Mirchandani and Motwani, 2001; Barry and Milner, 2002; Dixon *et al.*, 2002; Roberts and Wood, 2002).

Square Gallery and Lobster) failed to maintain a continual program of website and system integration/innovation.¹⁸⁷

- The costs required to exceed customers' expectations.¹⁸⁸
- The requirement for ongoing funding for maintenance, expansion, and to cover operational losses.¹⁸⁹
- The necessity to revise and expand the initial business models and strategies employed.¹⁹⁰
- Unreliable strategic partners.¹⁹¹
- Operating costs (although many of these costs were not technology investment costs *per se*, but rather human resource issues, such as staff training/re-training, and the costs of acquiring employees with new skills).¹⁹²
- The lack of assessment methodologies to gauge the costs of e-business relative to its performance.¹⁹³
- Determining ways to add value as margins grow slimmer.¹⁹⁴
- The emergence of new forms of delivery.¹⁹⁵

¹⁸⁷ In line with research findings presented in Chapter 3 and the list of references presented in Appendices E and F (Murphy, 1996; Lawrence, 1997; MacGregor *et al.*, 1998; 2004; Zimmerman and Mathiesen, 1998; Berg and Karttunen, 1998; Ritchie *et al.*, 1999; Stauber, 2000; Tetteh and Burn, 2000; 2001; Lee, 2001; Porter, 2001; Sparkes and Thomas, 2001).

¹⁸⁸ In line with research findings presented in Chapter 3 and the list of references presented in Appendices E and F (Murphy, 1996; MacGregor *et al.*, 1998; Ritchie *et al.*, 1999; Stauber, 2000; Lee, 2001; Porter, 2001; Sparkes and Thomas, 2001).

¹⁸⁹ In line with research findings presented in Chapter 3 and the list of references presented in Appendices E and F (Berg and Karttunen, 1998; MacGregor *et al.*, 1998; 2004; Sparkes and Thomas, 2001).

¹⁹⁰ In line with findings presented in Chapter 3 and in Appendices E and F (Giaglis *et al.*, 1998; Pollard and Hayne, 1998; Jeffcoate and Robinson, 1999; Bunker and MacGregor, 2000; Evens and Wurster, 2000).

¹⁹¹ In line with findings presented in Chapter 3 and in Appendices E and F (Blattberg and Deighton, 1991; Peppers and Rogers, 1997; Brannback and Puhakainen, 1998a; 1998b; Kalakota and Robinson, 1999; Shapiro and Vaian, 1999; Stauber, 2000; Raymond, 2001).

¹⁹² In line with findings presented in Chapter 3 and in Appendices E and F (Murphy, 1996; MacGregor *et al.*, 1998; Ritchie *et al.*, 1999; Stauber, 2000; Lee, 2001; Porter, 2001; Sparkes and Thomas, 2001).

¹⁹³ In line with findings presented in Chapter 3 and in Appendices E and F (Poon and Swatman, 1996b; 1997b; 1997c; Giaglis *et al.*, 1998; Pollard and Hayne, 1998; Purao and Campbell, 1998; Cobbenhagen and Nauwelaers, 1999; Lefebvre *et al.*, 1999; Pitt *et al.*, 1999; Stauber, 2000; Bunker and MacGregor, 2000; Chau and Pederson, 2000; Hill and Stewart, 2000; Jeffcoate *et al.*, 2000; 2002; Chau and Hui, 2001; Lee, 2001; Lee and Runge, 2001; Levy *et al.*, 2001b; Porter, 2001; Sathye and Beal, 2001; Tetteh and Burn, 2001; Raymond, 2001; Dixon *et al.*, 2002).

¹⁹⁴ In line with findings presented in Chapter 3 and in Appendices E and F (Murphy, 1996; MacGregor *et al.*, 1998; Ritchie *et al.*, 1999; Stauber, 2000; Lee, 2001; Sparkes and Thomas, 2001; Porter, 2001).

¹⁹⁵ In line with findings presented in Chapter 3 and in Appendices E and F (Coombs *et al.*, 1987; Yap *et al.*, 1992; Cragg and King, 1993; Kirby and Turner, 1993; Rogers, 1995; Abell and Limm, 1996; Yap and

- Complacency.¹⁹⁶
- Staff resistance to change.¹⁹⁷

With the exception of Design Bridge, the speed of access to website pages was courted by the case organisations by means of avoiding the gratuitous use of Flash and large graphics. Information content was considered to be a critical component in the implementation of site design – indeed, a number of the case organisations (Berkeley Square Gallery, Foyles, G-FX and Lobster) believed that the information contained therein was essentially more important than the design of the site. All of the case organisation principals, however, wanted their sites to project a certain image of the company and, in particular, to emphasise that there was a “real business” behind the site, with “real people” operating it.

The case organisation principals all agreed that the key components of “good” site-design include:

- Ease of use.
- Speed of access.
- Information content.
- Intuitive navigation.
- Appealing design.
- Site interactivity.

A number of the case organisation principals initially experienced difficulty locating IT providers they felt they could trust to help them translate their businesses online. Several case organisations that outsourced have since elected to take back in-house the site design and maintenance to some extent, because their site and online operations had become

Thong, 1997; Bakos and Brynjolfsson, 2000; Caldiera and Ward, 2001; 2002; Dixon *et al.*, 2002; Kulmala *et al.*, 2002).

¹⁹⁶ In line with research findings presented in Chapter 3 and the list of references presented in Appendices E and F (Poon and Swatman, 1996b; 1997b; 1997c; Westhead and Storey, 1996; Yap and Thong, 1997; Pollard and Hayne, 1998; Giaglis *et al.*, 1998; Purao and Campbell, 1998; Purao and Campbell, 1998; Cobbenhagen and Nauwelaers, 1999; Lefebvre *et al.*, 1999; Pitt *et al.*, 1999; Bunker and MacGregor, 2000; Chau and Pederson, 2000; Hill and Stewart, 2000; Stauber, 2000; Jeffcoate *et al.*, 2000; 2002; Lee, 2001; Lee and Runge, 2001; Levy *et al.*, 2001b; Chau and Hui, 2001; Porter, 2001; Raymond, 2001; Sathye and Beal, 2001; Tetteh and Burn, 2001; Dixon *et al.*, 2002).

¹⁹⁷ In line with research findings presented in Chapter 3 and the list of references presented in Appendices E and F (Lee, 2001; MacGregor *et al.*, 2004).

such an integral part of their business that they felt they needed to take on dedicated full-time staff (as was the case with Berkeley Square Gallery, G-FX and Davis & Co. during the fieldwork period). This finding is consistent with those of Ballintine *et al.* (1998) and Bili and Raymond (1993), as presented in Chapter 2.

Nonetheless, outsourcing not only provides access to expertise, but is also cost-effective, and has enabled these organisations to benefit from the support and reliability of the outsourcing company. The initial decision to outsource design and maintenance taken by these case organisations (mostly) occurred either because they had no in-house expertise in that area, or because of the cost benefit(s) of doing so (as was the case with all of the case organisations, save Toast). These case organisations developed a good working relationship with their outsourcing partner. For the majority, however, this was achieved after changing the original outsourcing partner, due to dissatisfaction concerning some or other aspect(s) of the relationship. Outsourcing was perceived by all the case organisation principals (except GF-X's) as being less expensive than either the cost of hiring or training staff, or of making potentially costly mistakes by trying to (re)build the site in-house.

9.4 NETWORKS AND ALLIANCES

Fallon and Moran (2000) and Smith *et al.* (2002) have suggested that smaller SMEs were more likely to engage in some type of formal network than were larger SMEs. It is interesting to note that of the seven case organisations participating in this study, four (Design Bridge, Foyles, Lobster and Toast) indicated that they did not consider their business to be part of a formal network during the fieldwork period. This may be because their dealings were informal and did not fall under any form of enforced governance, and thus were not considered to be either networks or alliances.¹⁹⁸ Of the three case organisations that did network through formal alliances (Berkeley Square Gallery, Davis & Co., and GF-X), only two could be considered to be “small” businesses (Berkeley Square and Davis & Co.), and of these two, Berkeley Square Gallery could be defined as a “micro-business.”

¹⁹⁸ In Chapter 2 research was presented that showed that informal alliances and networks provide SMEs with a higher and more stable flow of information and resources (Rosenfeld, 1996; Miles *et al.*, 1999; Overby and Min, 2001; Premaratne, 2001), and that informal but long-lasting, stable collaborations between organisations can significantly increase their competitiveness (Buratti and Penco, 2001).

As was explained in Chapter 2, some researchers (Miles *et al.*, 1999; Marchewka and Towell, 2000; Dennis, 2000) have suggested that formal networks provide a number of advantages over self-directed SMEs. These advantages (which particularly relate to the case organisation GF-X), include:

- Technical knowledge.
- Assistance in product/service adjustment to suit a larger market.
- Assistance in business methods to suit e-business techniques.¹⁹⁹

In addition to participating in off-line alliances, Berkeley Square Gallery also used links (to ArtNet, the Henry Moore Foundation and SLAD) on their website to consolidate and extend their services. The owner/manager of the gallery felt that links to these organisations had benefitted the gallery on several fronts, as they not only gave existing and potential customers alike greater access to relevant content, but also imbued the gallery with greater credibility, making it seem more “authentic” and “trustworthy” than it might otherwise appear to be to potential customers who chanced upon the site.

In Chapter 2, it was explained that geographic proximity is “essential” for the development and maintenance of networks amongst SMEs (Dahlstrand, 1999). Additional research has shown that the adoption of e-business is facilitated when it occurs in a formal networking environment (Tetteh and Burn, 2001; Papazafeiropoulou *et al.*, 2002; Riquelme, 2002). However, the results arising from this study do not appear to support that view.

There were no significant differences in terms of benefits arising from e-business adoption (in line with their original goals) between the formally networked and non-networked case

¹⁹⁹ In Chapter 2, research was presented on how formal networks can provide a number of advantages over stand-alone organisations, such as:

- The sharing of financial risk (Jorde and Teece, 1989).
- Technical knowledge (Marchewka and Towell, 2000).
- Market penetration (Achrol and Kotler, 1999).
- Internal efficiency (Datta, 1988).

Other researchers have claimed that the SMEs that collaborate with business partners gain more benefit from technology adoption and implementation (Möller, 1992; Grönroos, 1994; Raymond and Bergeron, 1996; Gummesson, 1997), as networks, alliances and mentoring can provide SMEs with the assistance many need in order to adopt innovative ideas and practices, as well as to increase the availability of, and enable access to, specific skills and tools (Jeal and Wroe, 1999; Leo and Booth, 2001).

organisations. One possible explanation is that in both the formally networked and non-networked case organisations, the principals expected even greater benefits from e-business adoption than was apparent. When taking into account the disadvantages of e-business adoption and implementation that the case organisation principals did not expect (such as higher costs, computer maintenance, doubling of work, reduced flexibility of work, and security fears), there would seem to be no significant difference between the formally networked and non-networked case organisations. This is in opposition to the findings of Achrol and Kotler (1999), Overby and Min (2001) and Marchewka and Towell (2000), as presented in Chapter 2, that difficulties dissipate through a network more readily than they might in a single organisation. The lack of any significant difference between the formal networking and non-networking case organisations in this research may also be explained by the fact that the decision to enter into a formal networking arrangement may not be prompted by the desire to adopt e-business. Indeed, except for GF-X, this was the situation with each of the case organisations that undertook formal networking. This finding would tend to bring into question the view of Dennis (2000, presented in Chapter 2), who suggests that a prime motivation for SMEs to network is the desire to extend their market coverage through e-business adoption.

Marchewka and Towell (2000), Achrol and Kotler (1999) and Dennis (2000) also suggest that formal networks “soften” barriers to new market penetration and technology acquisition by providing expertise and know-how to member businesses. However, as the case organisations participating in this research were all enthusiastic e-business adopters, it was not possible to test this hypothesis.

A number of researchers (among them Poon and Swatman, 1997a; 1997b; Lawrence, 1997; Reimenschneider and Mykytyn, 2000; Power and Sohal, 2002) have suggested that one of the many mechanisms SMEs use to reach new markets is the development of formal networks. While the data arising from this research do not directly support this view (save for the case organisation GF-X), it is interesting to note that membership of a formal network does not seem to significantly alter perceptions of barriers for those SMEs seeking a larger market share through e-business adoption and implementation.

Four factors were considered by all of the case organisation principals to be both possible benefits and/or possible disadvantages of the adoption and implementation of e-business. These factors were:

- Cost.
- Relationships with business partners.
- Internal efficiency.
- Quality of information.

In both the formally networked and non-networked case organisations involved in this research, the benefits in each of these four categories were considered to be significantly higher than the possible disadvantages. Correspondingly, the case organisation principals reported significantly greater benefits than disadvantages in terms of these factors. This finding implies that none of the barriers to adoption and implementation of e-business was significant enough to be reasons to avoid adopting e-business for these case organisations. This would tend to support the many advocates for e-business adoption in SMEs.²⁰⁰

Having discussed the seven case organisation principals' experience of network alliances, we turn now to examine their perspectives on government policies and initiatives, an issue that lies at the heart of this research.

9.5 PERSPECTIVES ON GOVERNMENT POLICIES AND INITIATIVES

A common experience for all seven of the case organisation principals participating in this research was a feeling of apprehension about losing control of their businesses as a result of increasing government regulation. Powerful trading partners seemed to be accepted as technology leaders more readily than were governments. This is perhaps because SMEs grow accustomed to the requirements of larger, more powerful trading partners on many other trading issues.²⁰¹ This issue is especially noticeable in the case of GF-X, where

²⁰⁰ Presented in Chapters 2 and 3 and in Appendices A and C.

²⁰¹ In Chapter 3, examples of EDI and VAN platforms were offered as examples of this scenario. EDI was widely implemented by SMEs, but was usually facilitated, accessed and utilised by larger organisations due to its high implementation costs. Many e-business solutions that connect to the system(s) of larger organisations

considerably less antagonism was voiced towards the large corporate and customer organisations (that wielded substantial power over their specific trading terms) than to the government regulations (such as taxation and VAT) they were obliged to adhere to. These requirements were (for the most part) accepted with varying degrees of resignation by all of the case organisation principals.

One primary concern identified by all of the principals of the case organisations was uncertainty as to how the taxation and legal environment for e-business would eventually evolve. These concerns were connected to more general worries about policy regarding individual sectors. Some industries (ie. airlines, which affects G-FX) are subject to specific regulatory regimes, and the linkages between these and e-business policy are not clear. Concerns were also expressed by all of the case organisation principals whether and how competition policy would affect the vertical integration that was already evident in their emerging e-business relationships.

Several of the case organisation principals voiced opinions about how government leadership, program initiatives and substantial investment in e-business support activities could be better undertaken (although on a number of occasions the case organisation principal was unaware that both the UK and/or EU governments had already innovated or was undertaking a programme in exactly the area they mentioned). Dual views (both for and against government intervention) were often held simultaneously. Fewer government interventions were recommended by the case organisation principals in the e-business area than in other areas where government provided different forms of UK business support.²⁰² However, research has identified the tendency of SMEs to prefer existing and often informal sources of advice rather than government-sponsored advisors.

occur as a result of pressure from the larger (and often more powerful) corporate partner to do so (Webster, 1995; Parker and Swatman, 1997). In some cases, SMEs are forced to become interdependent (eg. an SME supplier to a major corporation is pressured to install EDI in order to maintain its business with that organisation) (Webster, 1995). SMEs are typically in a poor power position in relation to their larger counterparts (Webster, 1995).

²⁰² This is consistent with the findings presented in Chapters 2, 3 and 4 and in Appendices A, C, E and F, possibly because they were unfamiliar with government e-business initiatives and contributions (Ein-Dor and Segev, 1978; Welch and White, 1981; Pahl, 1984; Weber, 1985; Oakey, 1985; Raymond, 1985; 1989; 1990b; Cheney *et al.*, 1986; Clegg, 1990; Cornford *et al.*, 1991; Granovetter, 1992; Reynolds *et al.*, 1994; Mulhern, 1995; Thompson and McHugh, 1995; Murphy, 1996; Westhead and Storey, 1996; Chen and Williams, 1998; Bunker and MacGregor, 2000; Gibb, 2000; Smallbone *et al.*, 2000; Castleman *et al.*, 2000; Castleman and Coulthard, 2001; Curran and Blackburn, 2001; Thong, 2001; Tatnall and Burgess, 2002).

This suggests that even considerable specific SME e-business adoption and implementation support efforts will not (necessarily) gain great adherence from time-strapped SMEs who are in the process of adoption and implementation of e-business and – at the very least – are somewhat mistrustful of government.²⁰³

All the principals of the case organisations had ambivalent views towards government initiatives, and articulated unambiguous independence from and resistance to government intervention in their business affairs. Paradoxically perhaps, they also saw the government as an effective agency to offer protection from the unscrupulous or incompetent practices of some IT vendors. That all of the case organisation principals were oblivious to the measures introduced by the EU and UK governments to specifically target and benefit them in their adoption and implementation of e-business would therefore indicate that the significant number of projects and policies initiated to motivate SMEs to adopt and implement e-business/technological innovation were and are neither accessible, coherent nor, therefore, relevant to their intended target audience. No direct, meaningful dialogue between policy makers and SMEs seems to currently exist. This observation is, in itself, a major contribution of this research. A means of rectifying this situation is suggested in the directions for future research section of the next chapter.

It is possible, from a close examination of these case organisations, to come to the conclusion that they are operating, much as Porter (2001) suggests that they should – making their e-business strategy their business strategy, ensuring that their online activities are central to their off-line operations, and moving closer to full integration of off- and online business operations. This is a key lesson to be gleaned from the study.

9.6 DRAWING TOGETHER ALL THE STRANDS OF THE RESEARCH

Building on the debates emerging from the literature presented in Chapters 2, 3 and 4, Chapter 5 explored the research methodology choice. The research approach is a central concern of IS researchers, and key characteristics of the research areas of debate were considered in relation to the topic area and in relation to the methodological implications

²⁰³ Section 4.3 of Chapter 4, entitled *Why Aren't SMEs Accessing the Help that's Available?* explains this issue in some detail.

of studying the general integration of new technologies into SMEs. The theoretical position adopted in this research was set out, along with the theoretical foundations of the analytical concepts. However, as these concepts emerged from the research as it progressed, they therefore could not be developed in full until the case studies had been presented.

The thesis has established that SMEs, e-business and policy initiatives are – quite literally – worlds apart. The Galliers *et al.* (1981) study, introduced in Chapter 1, is a multi-agency situation which presents a way forward, showing a means by which these worlds apart can be drawn together. The evidence arising from the literature review, and the experience and views of the case organisation principals has been presented in the previous two chapters, Chapter 7 and Chapter 8. It was suggested to each of the case organisation principals that (perhaps) funds from a part of one (currently apparently invisible) government initiative could be redirected for the purpose of conducting either a workshop or series of workshops, from which more in-depth information could be generated from SMEs themselves.²⁰⁴

²⁰⁴ These discussions are presented in Chapters 7 and 8 and in Appendix I.

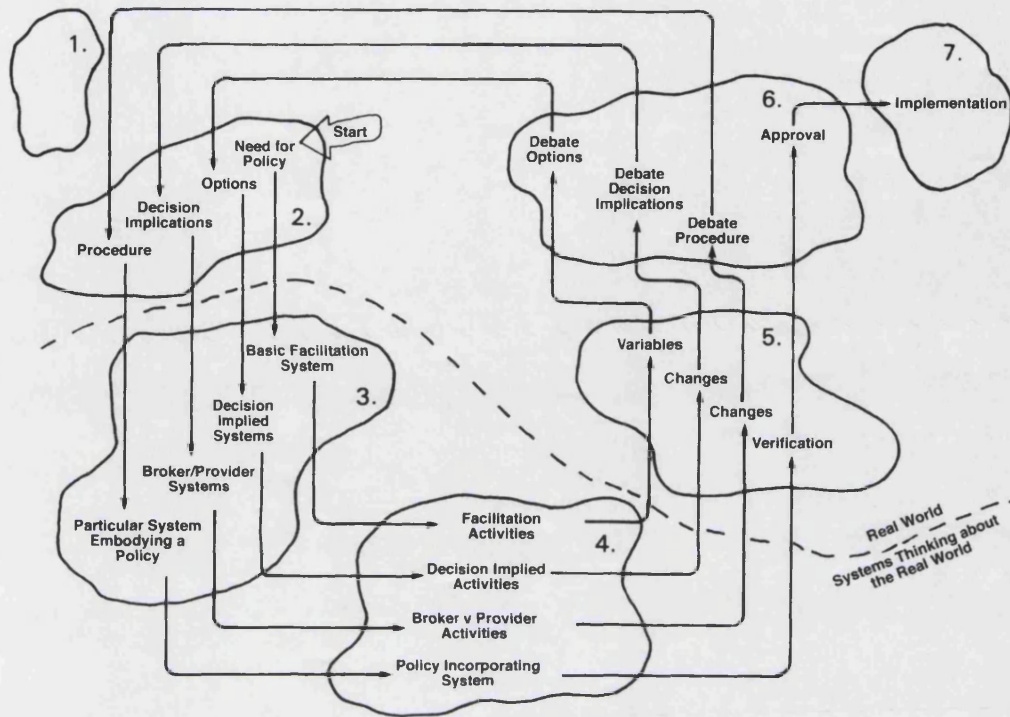


Figure 9.2 – A systems approach to policy formulation (based on Galliers *et al.*, 1981: 111)²⁰⁵

Figure 9.2 (above) illustrates an idealised systems approach to formulating policy. This dissertation has provided a coherent argument that collaboratively-generated policies are needed. However, the process is stymied when it reaches Stage 6 of the diagram, as in the “Real World” there is no debate between the involved parties.

Figure 9.3, is employed as a visual device to illustrate the proposed debate in Stage 6 of the systems model is missing. This research has also shown that the debate is missing in the real world. There would seem to be a very real need for a more in-depth, meaningful dialogue between SMEs and policy makers to take place in order that more appurtenant policies can be engendered. According to the (emphatic and unanimous) response of the case organisation principals, the participation rate of SME owner/managers in the suggested workshop(s) would (likely) be higher than the rate of respondents to questionnaires, and the information obtained more substantial and dialogical in nature.

²⁰⁵ This figure also featured in Chapter 1, as Figure 1.6.

We have seen in Chapters 1 and 4 that government departments and agencies employ a range of feedback techniques to ascertain the needs of the SME community. Such feedback is obtained mainly from large-scale multiple-choice surveys. These have a number of disadvantages.²⁰⁶ For instance, checkbox ticks determine the SBS and Business Link service satisfaction levels. This approach is likely to bring about skewed results, as on the one hand, these agencies serve only those SMEs that approach them (statistically a very small proportion); on the other, the SME owner/manager might be being polite and marking up – customers cannot always gauge what a service should be delivering (and therefore what they should expect), and respondents in such scenarios tend to mark up, rather than down. Multiple choice questionnaire responses also have a number of additional disadvantages:

- A very low response rate.
- Answers that are shaped by the multiple-choice format.

An additional problem with multiple-choice questionnaires is that the questions are often formulated by government (or their agencies) to meet targets and satisfaction objectives (SBS, 2004a; 2004b).

As has been shown in Chapters 2, 3 and 4, although vast resources are allocated in the EU and UK – and elsewhere – on formulating policies and initiatives to promote and enable the adoption of e-business by SMEs, few of these policies and initiatives seem to be visible to SMEs, let alone relevant or accessible to them.

²⁰⁶ These were described in Chapter 4.

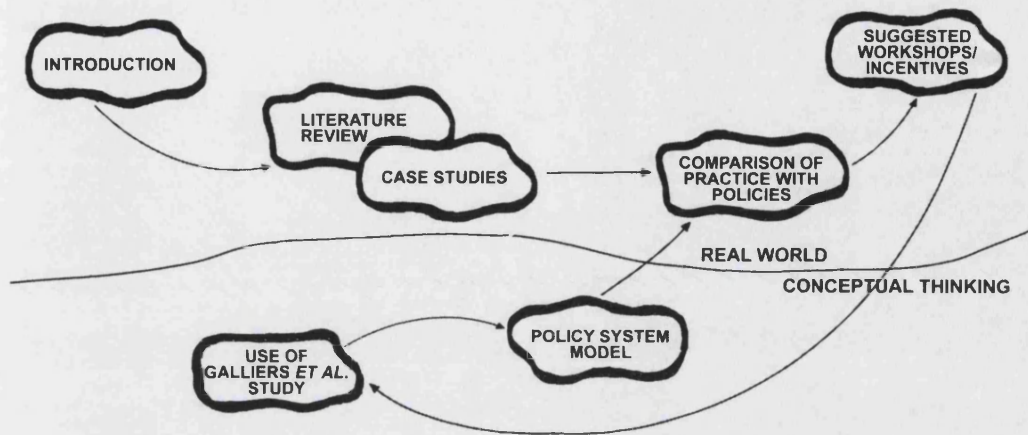


Figure 9.3 – Bringing together the disparate worlds of the research

Keeping in mind that the researcher has employed SSM conceptually as a tool to join together the disparate worlds by means of the SSM Seven Stage Model,²⁰⁷ the literature review set the scene for the research and is featured as Stages 1 and 2.²⁰⁸ The research goes from Stages 1–2–5 in order to stress that these “worlds” are apart. The systems model shows the process then progressing to Stages 4–5, then on to Stage 7, in order to show what purposeful action can be taken. Stage 6 is missing from the model, because the debate between the “problem situation” owners, the SMEs and the policy makers, is non-existent.

The SSM “journey” is a flexible process, wherein it is not required that the researcher go around the 7 stages in a spiral. As was explained in Chapter 5, SSM is a flexible methodology with an organisational problem-solving focus, usually resulting in several ambiguous organisational outcomes, providing a suitable framework for challenging issues that are difficult to define, and for which a clear set of generally agreed objectives cannot be established (Checkland, 1981; Wilson, 1984; Holwell, 1992; Barry and Fourie, 2001).

SSM is flexible enough to be manipulated to fit any situation (Wilson, 1992; Checkland, 1995; Stowell, 1995; Mingers, 2001a; Ormerod, 2001). The methodology is not a sequential process, and a researcher can start anywhere and proceed in any direction.

²⁰⁷ As shown in Figure 5.11.

²⁰⁸ As described in detail in section 5.3.3 of Chapter 5.

Through various cycles of iterative intervention, models of purposeful activity are developed and adapted (Checkland, 1981; Venters *et al.*, 2002).

SSM has been shown to be a methodology, not a method. As such, its inherent flexibility allows for “creative, innovative use” of its principles, specific to a particular situation (Checkland and Holwell, 1998: 171). Although “no two users” use SSM in the same way, this does not result in its “dissolution” because at its core lies the idea of making sense of problematical situations by using systems models of purposeful activity (Checkland and Holwell, 1998: 162). SSM can be comfortably integrated into a research programme containing other methods, and works best “not as a prescription to be followed, but as an explicit framework of guidance for sense making, leading to processes which can be both described and recovered” (Checkland and Holwell, 1998: 169). Checkland further suggests that, as researchers gain experience of SSM, they retain the early seven-stage process “not as a prescription” but as an “*aide memoire*” (Checkland, 2001a: 70).

SSM models “will not in general precisely map the observed real world action” (Checkland, 2001a: 71). The purpose of comparing systems models with the real world is to instigate a debate about possible changes. The debate informs possible implementable changes to improve the problem situation. These implementable changes must be “systemically desirable and culturally feasible” for all involved, and will represent an accommodation between the different conflicting views, making “purposeful action” possible. The purpose of the debate, therefore, is to find the way to take action (Checkland, 2001a: 71-2).

As was described in Chapter 5.2, the “real world” is socially constructed (Berger & Luckman, 1966). Within it, “participants” negotiate and re-negotiate their perceptions and interpretations with others (Checkland, 1981). Accordingly, the researcher is also a participant in that process. The “real world” of Checkland’s seven-stage model is a non-conceptualised perception of the problem domain, and “systems thinking” is an epistemological set of principles that enables a richer and more insightful understanding of the domain (Checkland, 1999b).

The investigative force of SSM is derived from the epistemological power of a set of systems concepts that structures thinking about the world. These concepts derive their investigative power from being appropriate expressions of the ways in which the complexity of the world is structured in order to derive meaning from it (Checkland, 1981). The outcome of the SSM research process is knowledge.

The relationship between the SSM component and other components of this research programme was therefore considered by the researcher in order to ensure that the ontological, epistemological and reasoning strategy approaches were appropriate to the needs of the major stakeholders.

The thesis has started a debate with but a few players. The “real” Action Research would now start with these players, leading them to debate what is “systemically desirable and culturally feasible.” The various different attitudes between those involved need to work in concert, in order to enable them to be brought together into a coherent and workable whole. It is necessary, therefore, to include SME owner/managers in a dialogue regarding the generation of appropriate policies intended for their benefit. The systems model borrowed from the literature has considerable impact, as it illustrates what might be (able to be) done. Having obtained responses from the case organisation principals regarding the researcher’s proposed “solution,” the scene is set for future work.

One option could be to divert funds from a part of an existing initiative to conduct either a workshop (or series of workshops), from which more in-depth information could be generated directly from a number of SME owner/managers. Such a workshop/series of workshops would place SME owner/managers in an arena where they will likely be able to discuss the issues that concern them in a much more detailed and participative manner than has previously been possible. As a result of the information that comes to light from these discussions, policy makers would likely be better informed – and therefore better equipped – to meet the needs of SMEs than they currently are.

At best, SMEs are vaguely aware of the many government policies and initiatives that are generated for their benefit. This research has demonstrated conclusively that what is being done currently isn’t working. Therefore, carrying on in the current manner has a

finite chance of success. With the literature review informing her research, the researcher has seen the resources, financial and otherwise, that are wasted, and has considered what might be done.

The process of having demonstrated the current situation through the experience of the case organisations, having provided supporting evidence in the literature review chapters, and having tested the reactions of the case organisation principals to her proposals thereby demonstrated the validity of the researcher's hypothesis. The systems model sets the stage for the debate between SME owner/managers and policy makers to begin. There is a real possibility that the researcher's suggested workshop(s) might work, whereas the current situation clearly does not.

9.7 SUMMARY

It has been shown that many SMEs are working out business models that enable them to use online and traditional business channels (in concert) to their greatest strategic advantage. Certainly, this is the case for the seven UK case organisations examined in this study. In general, the research conducted on these case organisations yielded significant indications that the source of motivation to engage in e-business is moving upwards in the management structure, resulting in more top-down pressure within firms for e-business implementation. Nevertheless, most of the e-business activities described in the study appear to have been driven primarily by tactical objectives (such as efficiency, extending market reach or cost reduction), with the emergent business/IT strategy models envisaged by Ciborra and others (Ciborra, 1994) such as "tinkering" and "synchronicity," developing subsequently.

The next chapter consolidates the discussion that was presented in this chapter, summarising and analysing the implications drawn from the research, and bringing together all of the problem areas the thesis explored. This is done in order to ascertain – in a "systemically desirable and culturally feasible" way – how the asynchronous "worlds" of SMEs, e-business and policy makers can be reconciled.

Supplementary information referred to in this chapter is located in the following appendices:

- Appendix A – The Advantages of e-Business Adoption and Implementation
- Appendix B – SME Characteristics
- Appendix C – Drivers to e-Business Adoption by SMEs
- Appendix E – Barriers to e-Business Adoption by SMEs
- Appendix F – The Disadvantages of e-Business Adoption and Implementation
- Appendix I – Incentivisation/Workshops Questionnaire
- Appendix O - Findings Arising From the Case Studies Relating to the Literature Review
- Appendix P - Findings Arising From the Case Studies Not Relating to the Literature Review

Chapter 10

Reconciling Worlds Apart

10.1 INTRODUCTION

This concluding chapter presents an overview of the research, which has attempted to find a way to bring together and reconcile the dichotomous worlds of SMEs, e-business and government policy making. An initiatory study aiming to inform subsequent research and practical work, the research sets an agenda for what needs to be done.

Drawing together the significant aspects of the research design, the literature review, the case studies and the evidence arising from the analysis of the outcomes of the empirical research, this chapter also provides a synthesis of the research's aims and objectives, and explains to what extent they have been met. Essentially, the chapter forms a narrative summary of the entire research project.

Figure 10.1 illustrates an overview of the research.

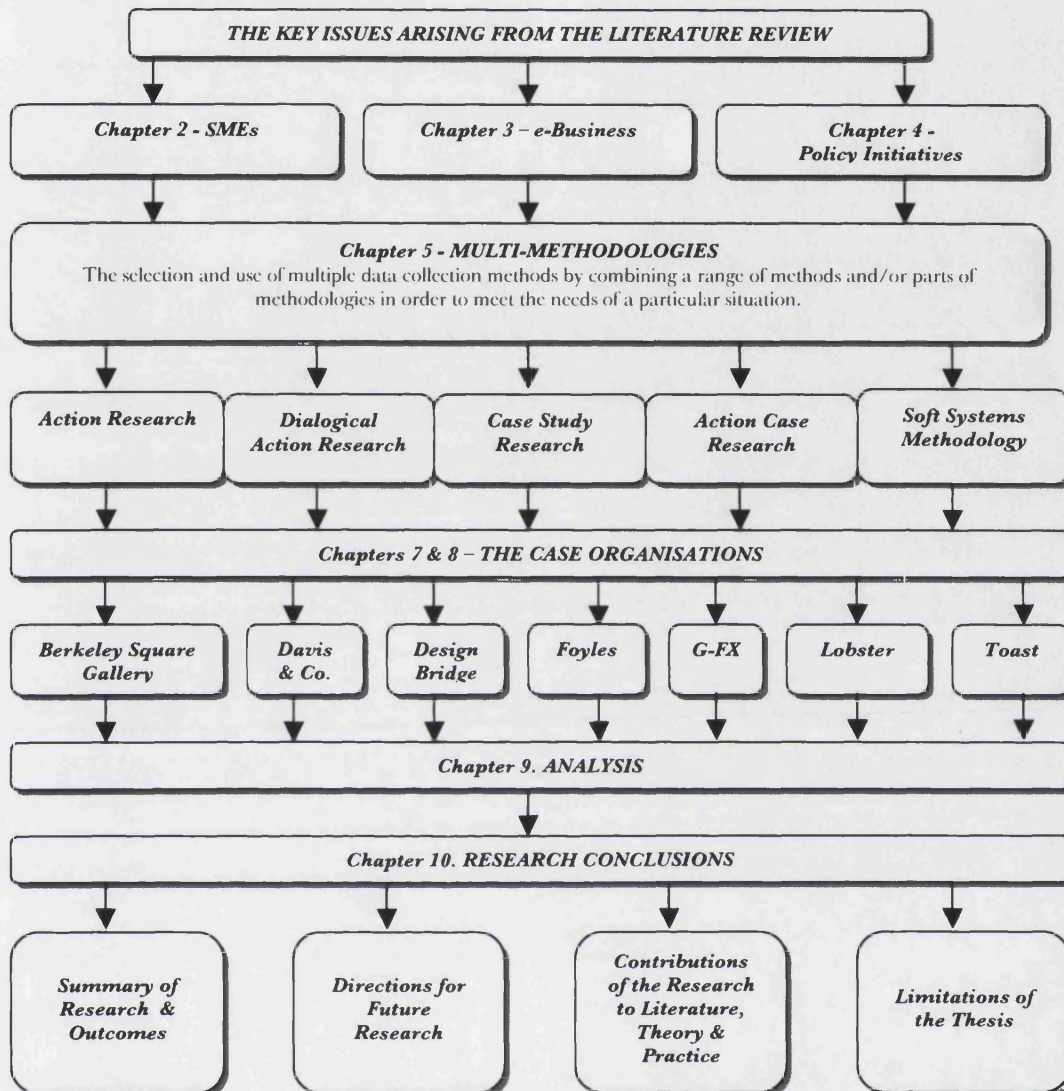


Figure 10.1 – An overview of the research

Taking account of the distinctive context within which the research was conducted was an important part of the process of understanding why certain issues had achieved such prominence. The researcher made the decision not to set aside this context to focus on purely theoretical-related concerns. This decision enabled her to draw upon dense and complex bodies of work. Mapping out theoretical distinctions between these areas of research and forging a basis for developing grounds for inter-textual coherence was a difficult but unavoidable task, as these issues had to be addressed in order that the

subsequent findings of the thesis could be situated within the concerns of existing IS studies.

The next section of the chapter provides a summary of the research. This summary is divided into four segments. These are, respectively:

- First, the research “problem situation.”
- Second, the research methodology.
- Third, the research procedures.
- Finally, the outcomes of the research are relayed.

The implications arising from the research are far-reaching. They are presented in the third section of the chapter, which suggests directions for future research. The core analytical concepts suggest their relevance to the study of further examples of cross-sector research. The issues raised concerning the potential of combining the research methods ACR, Dialogical AR and SSM deserve proper treatment, and engaging with these issues suggests key areas for further exploration. These areas for future research have been suggested throughout the thesis within the IS research area and beyond, to the arenas of management practice and government policy making: they not only support the scrutinisation of organisational and technical arrangements surrounding SME e-business adoption and implementation, but also of policy generation.

Following this, an outline of the thesis’ core contributions is provided. The research findings and their implications are reviewed here, in order that the theoretical exposition of the early chapters can be linked to concerns raised in the analysis. Relating the findings arising from the seven case organisations back to the issues raised in the Literature Review of Chapters 2, 3 and 4 is particularly important, as the precedents that had been set in the course of the research dealt with a number of concerns that were distinctly in and of their time. The core contributions of the research fall into three main areas:

- *The contribution to the literature.*
- *The contribution to theory* – founded on a unique combination of ACR, Dialogical AR and SSM conceptual modelling, the concepts explored in this dissertation

contribute to the terms and vocabulary of those theoretical approaches. The contribution to methodology is attributable primarily to the theoretical approach adopted, to the design of fieldwork, and to the distinctive perspective that was taken.

- *The contribution to practice* – taking into account not only the problematisation of the time period,²⁰⁹ but also the comprehensive details of the technical and organisational SME e-business adoption and implementation they provide, the case studies stand as a valuable contribution to research. There are important practical implications to be drawn from the case studies and the policy generation analysis.

A discussion of the limitations of the research design outcomes, and the implications these hold for the treatment of the case studies research results follows, in the fifth section of the chapter. The chapter, and thereby the thesis, then draws to a conclusion.

Figure 10.2 shows the layout of this concluding chapter.

²⁰⁹ Following the 2000 technology shares stockmarket crash.

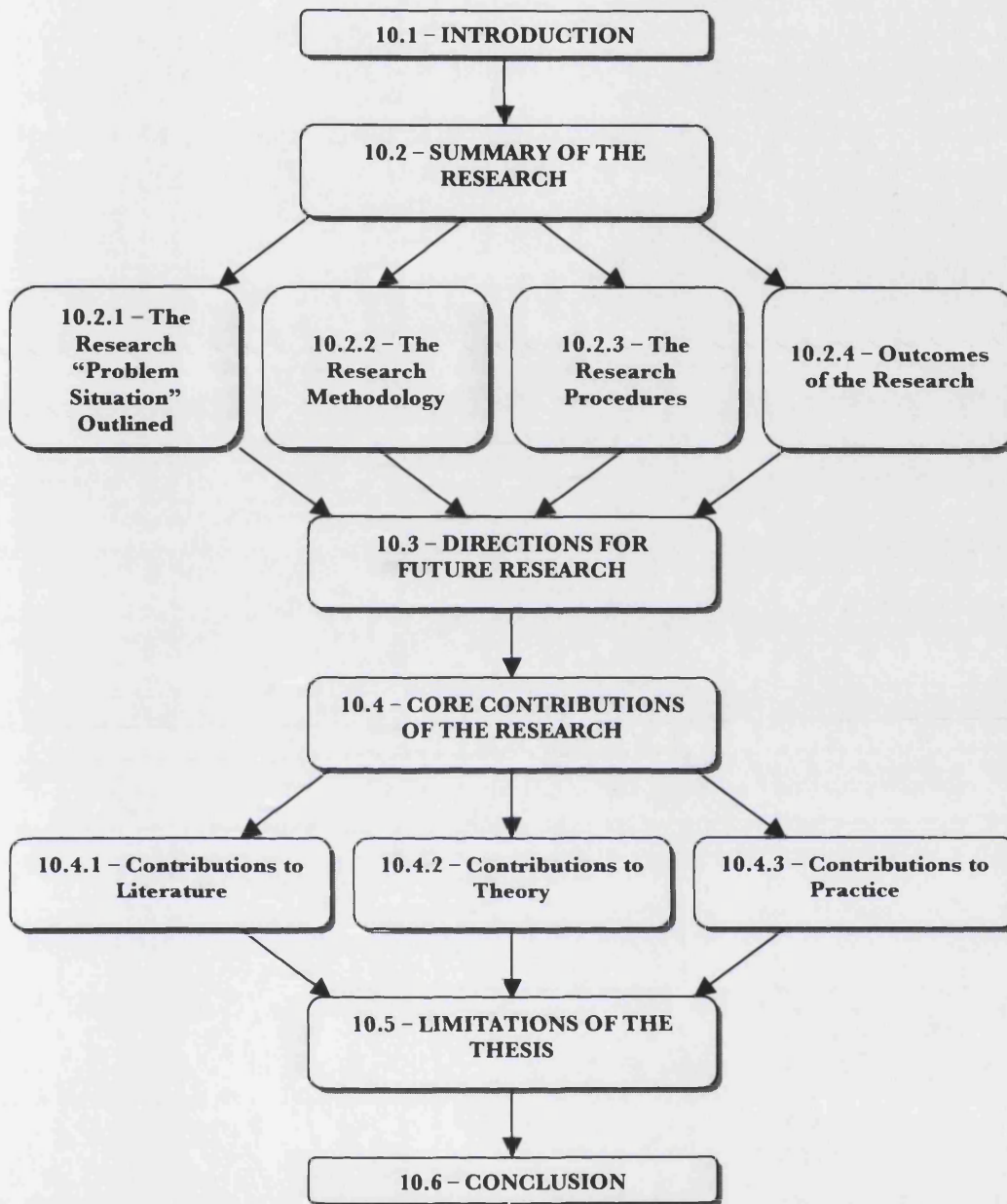


Figure 10.2 – The layout of the concluding chapter

10.2 SUMMARY OF THE RESEARCH

This section of the chapter presents a summary of the research, divided into four sections:

- First an outline of the research problem situation is presented.

- Second, the research methodology is considered.
- Third, the research procedures are explained.
- Finally, the research outcomes are described.

10.2.1 The Research “Problem Situation” Outlined

Informed by the literature review in Chapters 2, 3 and 4, the research has shown that it is not only the canons of literature but also the “literal worlds” of SMEs, e-business and policy initiatives that are separated. The thesis has examined the adoption and implementation of e-business by seven UK-based SME case organisations with regard to the EU and UK policy initiatives formulated for the purpose of motivating such organisations to do so. In this situation, both SMEs and the policy makers who aim to serve them are the joint owners of the “problem” or activity system. The “problem” at the core of this situation was both complex and ill-structured. Particular attention needed to be paid to ascertaining problem ownership, and to considering the variety of potential stances from which the problem could be viewed. It has been shown that situations such as this are ripe for SSM analysis, but have rarely been explored in the literature (Galliers *et al.*, 1981; Checkland and Scholes, 1990b).

The nature and context of SMEs was explained in some detail in Chapter 2 (and Appendix B). Often very different to larger organisations in terms of their environment, structure, psycho-sociological climate, management, and technology usage, SMEs often lack the internal resources and external networks necessary to adopt, utilise and manage new technology – to *innovate*.²¹⁰ Nonetheless, SMEs are crucial to the success of a government’s economic and productivity agenda.²¹¹ Accordingly, the EU and UK governments have introduced a significant number of actions in recent years in order to stimulate SMEs and to foster SME adoption and implementation of e-business.²¹²

²¹⁰ The nature and context of innovation is addressed in Chapter 3.3.

²¹¹ The contribution of SMEs to the dynamism of the economy in which they operate is explained in Chapters 1 and 2.

²¹² The most prominent of these policies and initiatives were explored in Chapter 4 and Appendices K and L.

While government departments and agencies employ a range of feedback techniques to ascertain the needs of the SME community, the research found that feedback to existing government is obtained mainly from large-scale multiple choice surveys, which have a number of disadvantages, including:

- A (very) low response rate.
- Answers shaped by the multiple-choice format.
- Questions formulated to meet targets and satisfaction objectives (SBS, 2004).

A more direct means of assessing the needs of SMEs is therefore needed. This need is expressed in Figure 10.3.

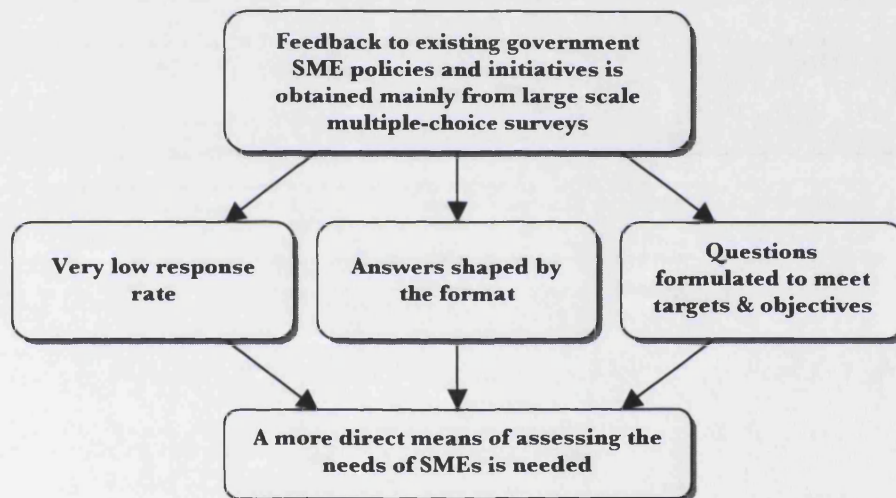


Figure 10.3 – A more direct means of assessing the needs of SMEs is needed

Dialogical AR-informed “reflective dialogues” with the case organisation principals proved very useful in drawing out the contrasts. The researcher was able to show how, constitutionally and organisationally, SMEs generally – and several of the case organisation principals specifically – more often than not sought to serve different ends than those of purely economic benefit.²¹³ SMEs were under pressure to “act fast” in order to take advantage of potentially short-lived market conditions. The critical timeframes that were imposed upon them by market conditions were counter-intuitive to many of the

²¹³ This is explained in more detail in Chapters 7, 8 and 9.

fundamental ways in which SMEs operate.²¹⁴ Working with limited funds, SME case organisation principals needed to be provided with substantial evidence that a suggested approach to technology requirements represented the best way forward before they were prepared to invest in it. Alternatively, they “jumped on the bandwagon” without considering their strategic goals, and made (some) disastrous decisions. These factors, in combination with their limited resources, resulted in a seeming reluctance by (many) SMEs to adopt and implement e-business.²¹⁵ This reluctance manifested itself in low e-business take-up rates in comparison with those of larger organisations.²¹⁶

Background research and interviews with the case organisation principals enabled the researcher to form the following tentative conclusions about the problem situation:

- There are a number of different agencies at national, regional and local levels.
- The level of inter-agency communication and co-operation generating and sponsoring programmes designed to assist SMEs could be improved.
- There is a broad range of attitudes towards the way in which services should be provided for SMEs in general, and towards their adopting and implementing e-business, in particular.
- There is an absence of a commonly held policy with respect to the adoption and implementation of e-business by SMEs amongst all the agencies involved.
- Comparatively little direct interaction and dialogue between SMEs and policy makers seems to take place.
- UK SMEs are often oblivious about these policies and initiatives (except regarding their having to comply with tax and VAT-related regulations).

²¹⁴ The nature and context of the operations of SMEs are particularly addressed in Chapter 2 and Appendix B.

²¹⁵ Various perspectives on this issue are discussed in Chapters 1-4, Chapters 7-9 and Appendices A, C, E, F.

²¹⁶ Various perspectives on this issue are discussed in Chapters 1-4, Chapters 7-9 and Appendices A, C, E, F.

Figure 10.4 illustrates the researcher's initial tentative conclusions about the research "problem situation."

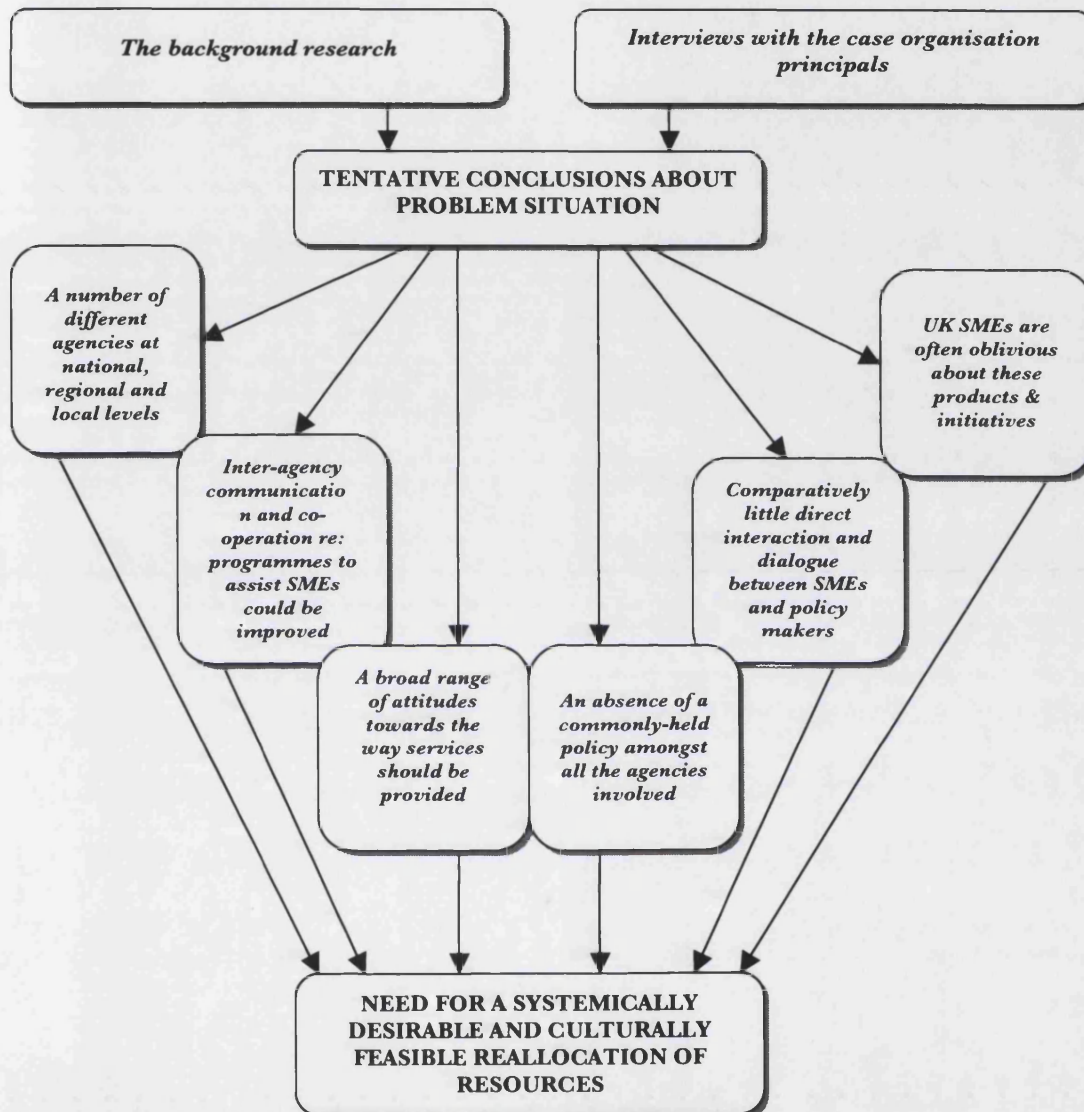


Figure 10.4 – Initial tentative conclusions drawn about the research "problem situation"

Arising from these initial conclusions, in line with Galliers *et al.* (1981: 102), the researcher formed the opinion that a more appropriate allocation of resources is integral to understanding the inter-related problems of attitudes, policies, information and

communication related to the issue. A collaborative dialogue would go some way towards establishing what a more appropriate allocation of resources would be. Figure 10.5 illustrates the contributing factors culminating in the low rates of e-business adoption and implementation by SMEs as a result of a lack of dialogue between the relevant parties leading to inadequate government policies and initiatives.

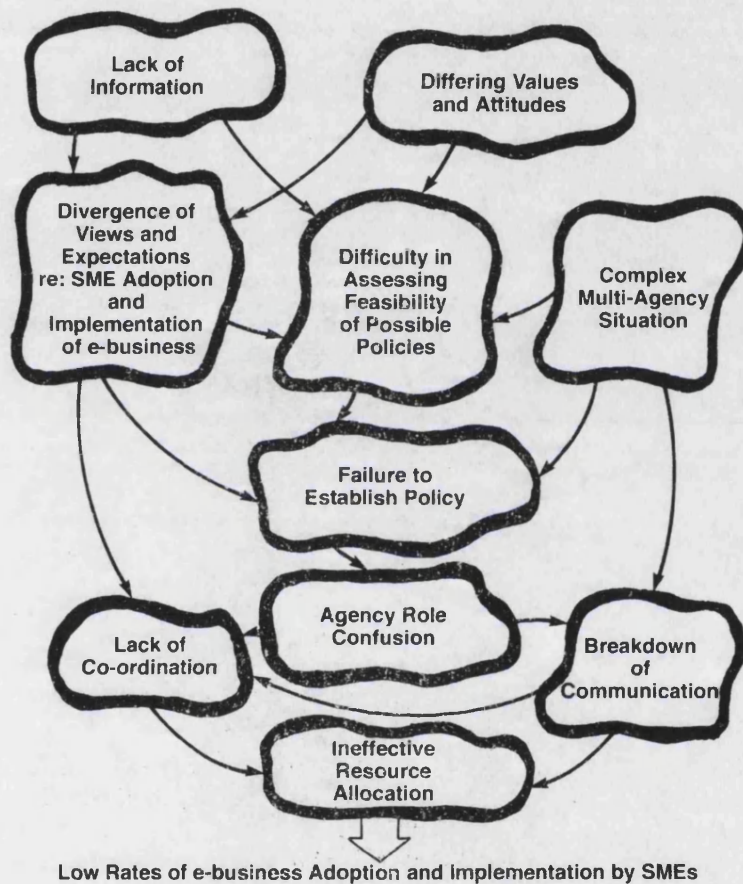


Figure 10.5 – Related problems leading to low rates of e-business adoption and implementation by SMEs (based on Galliers *et al.*, 1981: 103)²¹⁷

Following this stage of the research process, the researcher concentrated her focus on policy formation and attitude identification. She aimed to establish a “systemically desirable and culturally feasible” policy approach for governments to motivate SMEs to

²¹⁷ This figure also features in Chapter 1.3, as Figure 1.3.

adopt and implement e-business. Her goal was to achieve a systems perspective in line with Galliers *et al.*'s (1981: 102) suggested policy "identification, selection and implementation system." This outlook clarified the subsequent stages of her research.

According to Galliers *et al.* (1981), it is essential, when considering the problem-solving activities of a soft systems study such as this, to: -

- Identify activities:
 - Know the problem content situation.
 - Define the basic parameters of the system to be served by the policy.
 - Identify options in the situation.
- Select activities:
 - Define activities implied by the options.
 - Identify the resource requirements of the activities.
 - Identify the implications of the options in the situation.
 - Know the resource constraints.
 - Know the decision-makers' requirements.
 - Select a feasible policy.
 - Appreciate the culture of the situation.
- Implement Activities:
 - Identify policy implementation options.
 - Identify actors' attitudes.
 - Assess support for policy.
 - Select implementation strategy.
 - Implement.

Galliers *et al.* (1981) proposed the utilisation of a generalised model in order to rationalise such debates. This model (Figure 1.4, featured in Chapter 1.3) provided a conceptual model of the problem-solving activities of this soft systems study, and served as a roadmap for the researcher.

The case organisations were selected for a variety of reasons, not least on account of the contrasts they stood to offer with respect to the overall experience of UK SMEs in the adoption and implementation of e-business.²¹⁸ Ultimately, though, it was shown that these case organisations took similar approaches to the adoption and implementation of e-business. Certainly, they were all voluntary and enthusiastic e-business adopters.²¹⁹

At the time the case organisations were selected, they appeared to be taking very different organisational approaches from one another in the adoption and implementation of e-business. However, ultimately these organisations procured very similar technologies and went about integration in very similar ways. Adoption and implementation was (as is to be expected) handled differently at each organisation, although they each had similar issues to contend with. On close examination of the case organisations, there was not much to separate them in either technical or pedagogic terms. The configuration of their internet sites and databases, and the emphasis they placed on business generated online, created important concerns at all the case organisations. Learning to recognise these concerns – and to understand their relative status – seemed to be a universally important part of the implementation process. The approach that the case organisation principals took to adoption served to shape the course that the implementation process would take in their business. Their ambitions in this regard were realised slowly: it took a mixture of time, dialogue and patience for their adopted e-business technologies to eventually arrive at a point where they could be positioned within existing flows and organisational arrangements. The practices and routines put in place by adoption and implementation activities would eventually come to bear on administrative and other business practices in the case organisations. These activities formed part of the invisible “underside” to the research.

The volatile nature of the market, especially following the 2000 technology shares crash, and the emergent character of the various e-business technologies on offer, meant that the research terminology had to be permitted to shift. Capturing these sweeping changes and the various reinventions of e-business technologies that they brought with them required a

²¹⁸ The relevant issues in this statement are specifically addressed in Chapters 1-4 and Appendices A, B, D and E.

²¹⁹ This is explained in some detail in Chapters 7, 8 and 9.

carefully conceived research design. After careful consideration of all the options, it seemed to the researcher that only a longitudinal approach to research could take account of the unsettled character of the time.

The way in which “dotcom” companies appeared – only to subsequently dissolve – in the wake of the 2000 crash in technology shares was a clear manifestation of the kind of risks those businesses were prepared to take. Such risks were inconceivable to (many) SMEs.²²⁰ The research was able to account for the diverse ends organisations seek to serve – and the implications these diverse ends hold – for priority setting. The research was also able to highlight the kind(s) of critical differences that can be overlooked when a totalising explanatory frame (such as market economics or managerialism) is imposed on SMEs.²²¹

In fact, the researcher aimed to capture these distinctive conditions that surrounded the time period in question, in order to draw out a sense of the hype that came to bear on businesses engaging in e-business during this time – a topic that achieved significant coverage in the press and in government policy documents and speeches. The seven UK SME case studies formed a particularly useful and insightful basis from which to view the conditions that allowed the divergent interests and priorities of those involved in creating this distinctive climate to come to the fore. These case organisations also provided a basis from which to analyse government hype and the relevance of government policy initiatives. The disparity between the claims to transformation being made and the actual levels of e-business adoption and implementation by SMEs could thereby be observed with some clarity. In terms of research design, the purpose of underlining these events was to emphasise the distinctive conditions that confronted the seven UK SME case organisations during the fieldwork period. This is illustrated in Figure 10.6.

²²⁰ The barriers to adoption of technological innovation by SMEs is specifically addressed in Chapters 2 and 3, and also in Appendix E.

²²¹ The unique nature and context of the operations of SMEs are particularly addressed in Chapter 2 and Appendix B.

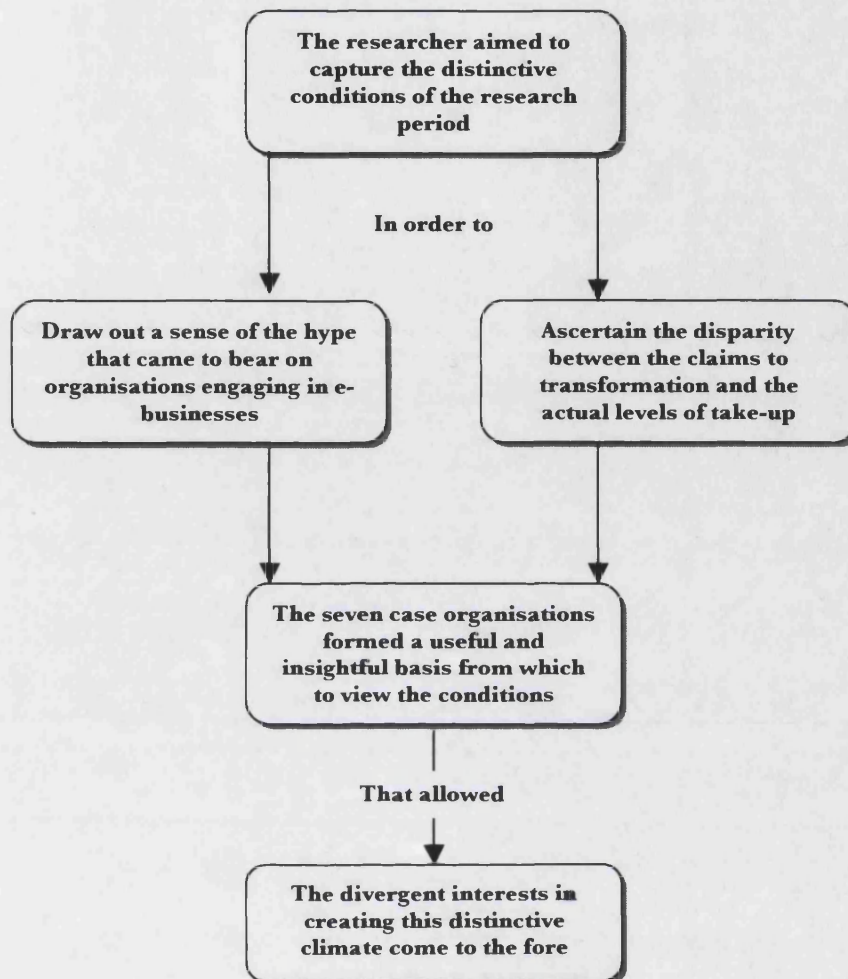


Figure 10.6 – Illustration of the emphasis on the distinctive conditions of the research period

The volatile market conditions were also reflected in the design of research questions, which had to be open enough to deal with fast-changing events, but specific enough to generate an empirical focus on technology. The research questions were:

- How can government policies and initiatives motivate SMEs to adopt and implement e-business?
- In the case of UK SMEs, how and why is e-business adoption and implementation taking place?

- What are the debates, activities and concerns arising from UK SME adoption and implementation of e-business, and what do these debates suggest about EU and UK policy initiatives?²²²

The issues discussed here outlined the “problem situation” and placed the research in focus. Throughout the thesis, the conceptual framework synergising the key issues that are under-researched in the separate canons is articulated. These issues are developed in the next sub-section of the chapter, wherein the research methodology is contextualised.

10.2.2 The Research Methodology

In Chapter 5, it was explained how combining research methods can be justified due to the increased relevance of the results. ACR and Dialogical AR provided the focus for the research on the seven UK SME case studies, while SSM was utilised to resolve policy development with SME needs. Three case organisations (Berkeley Square Gallery, Davis & Co. and Lobster) were analysed in detail, while the remaining four of the seven case organisations (Design Bridge, Foyles, G-FX and Toast) were drawn on to highlight the salient points and place the relevant issues in context.²²³

Within the field of IS, a number of research approaches are legitimate and (in ontological and epistemological terms) a wide variety of assumptions are acceptable. However (as was explained in Chapter 5), the norm is to distinguish between positivist and interpretivist positions. Because of the focus on the social aspect of ISD, this research adopts an interpretive stance. This choice is consistent with the research procedures adopted (Action Research and interpretive case study research taking the form of ACR and Dialogical AR), with the theoretical focus (SSM), and with the data collection and generalising-to-

²²² The genesis of the research questions is described in Chapter 6.2.

²²³ Berkeley Square Gallery, Davis & Co. and Lobster are examined in detail in Chapter 7. The remaining four case studies investigated in the course of the research (Foyles, G-FX, Design Bridge and Toast) are outlined in somewhat less detail in Chapter 8. At the beginning of the research period, the latter four case organisations could all be classified as SMEs. However, by the time the researcher was writing up, due to either organisational growth or to having been purchased by a conglomerate, the case organisations in the latter group no longer fit the criteria of an SME in UK and/or EU official government terms. The full research procedures were undertaken with these case organisations, however, and accordingly these cases are presented in Chapter 8 in order to accentuate and draw out the salient points in the discussion of the case studies *in situ*, which are presented in Chapter 9.

theory approach. Rather than follow positivist criteria for evaluating the research (such as statistical rigour, validity and generalisability, none of which would have been appropriate for this research), an alternative set of evaluation criteria was adopted from recent literature. Rigorous reflective thinking and documentation of the research process overcame conflicts that may have arisen.

Choosing which policies should be explored by capturing them in Root Definitions and then modelling their respective systems is a complicated process, as it must take into consideration the various problem situation “owners” operating in the relevant environment(s) embodying any number of plausible values and attitudes. The utilisation of a generalised model rationalised the debate. A large number of policy options existed, but rather than attempt to select a single policy to be pursued, the researcher realised, in line with Galliers *et al.* (1981: 107), that the formulation of policy was an *ongoing* activity, and that those responsible for the provision of policies are better equipped to assess the feasibility and desirability of them.²²⁴ In this way, the organisational, resource and cultural implications of each potential policy could be identified, and policy makers would thereby be enabled to make informed decisions on the basis of assessing the implications of the activities implied by their decisions. The problem-solving system thus becomes one of policy “identification, selection and implementation.”²²⁵

Therefore, the various differing attitudes between agencies need to be better informed, and then “orchestrated,” as per Galliers *et al.* (1981), in order to come together into a coherent whole, so that the decision takers in the different agencies are in a position to decide on relevant, cohesive and accessible policies. It is desirable and appropriate, therefore, to include SMEs in the dialogue regarding the generation of the policies intended for their own benefit.

The theoretical developments combined to form the framework for SSM conceptual modelling to resolve the policy generation issue. SSM was not only used for sense-making and information analysis purposes, but also to provide strategies for resolving the identified problems in the context of this research work. The literature analysis showed

²²⁴ In line with Galliers *et al.* (1981: 107) and as explained in the thesis’ introduction, Chapter 1.

²²⁵ In line with Galliers *et al.* (1981: 107) and as explained in the thesis’ introduction, Chapter 1.

that SSM is well established as a management problem-solving tool, following an interpretive ontology and an epistemology that employs systems theory in the construction of intellectual devices to learn about the world. The use of SSM conceptual modelling in the research was shown to be conventional and well understood. In Chapter 9, the analysis allowed insight not only into the complex political and cultural situation of the case study organisations, but also into the endemic multiple interlinking problems. The relationships between concepts central to the thesis were thereby aligned, in a manner that is consistent with the interpretive philosophy of the research, and able to be supported by SSM tools.

SSM conceptual modelling is a tool for understanding and working through complex real-life situations.²²⁶ In Chapter 1 it was claimed that “problem situations” such as the one addressed by this research are ripe for SSM analysis, but have rarely been explored in the literature.²²⁷ Given that this dissertation attempts to reconcile three anachronous, asynchronous areas (that of understanding the policy arena, that of understanding SMEs, and that of understanding technological innovation), and given that SMEs would seem to be often oblivious to policy initiatives,²²⁸ the researcher faced the challenge of how to construct appropriate SSM models that captured, linked, and then reconciled the problem situation. Borrowing the modelling process featured in the Galliers *et al.* (1981) study (which had similarly complicated issues with which to contend) made it possible to illustrate the problem situation, and to draw conclusions about ways to structure a meaningful dialogue between the problem owners.

The next sub-section of this chapter develops the theoretical concerns of the research presented here in order to explain the practical research design – the collection and analysis of valid empirical data.

10.2.3 The Research Procedures

²²⁶ Section 5.3.3 of Chapter 5 comprehensively describes this benefit, among others, of SSM, demonstrating its appropriateness for this research.

²²⁷ In line with the findings of Galliers *et al.* (1981) and Checkland and Scholes (1990b).

²²⁸ Evidenced by the findings of other research presented in Chapter 5, and by the experience of the case organisations as recounted in Chapters 7-9. These findings are summarised in Appendices O and P.

The research was conducted in the following three main phases:

- First, the literature relative to the fields of SMEs, e-Business and then EU and UK government services and initiatives generated for the benefit of SMEs was reviewed. The researcher placed considerable emphasis on hard data and substantive analysis. She utilised detailed tables and charts for each critical area, including national data produced by international organisations, unclassified government data, and the results of other original research projects.²²⁹
- Second, she employed a novel mix of methodologies: ACR and Dialogical AR were applied to the seven UK SME case studies during the fieldwork period. Considering the dual imperatives of problem solving and research in two separate but interconnected and interacting cycles enabled the researcher to be more explicit about the reflection and learning process, and allowed for better “planning, evaluation and monitoring” of the Action Research process (McKay and Marshall, 2001: 52).²³⁰
- Finally, these disparate “worlds” were drawn together and an approach to reconciliation was attempted. The SSM conceptual modelling process borrowed from the Galliers *et al.* (1981) soft systems study provided the researcher with the means for doing so.

In Chapter 1.5, it was explained how these three main phases were further broken down into a number of steps, which were illustrated in Figure 1.7.

Discussions in the form of “reflective dialogues” with the case organisation principals about the requirements of SMEs within the context of their organisational and cultural situation occurred periodically, in line with the suggestions of Martensson and Lee (2004) (as explained in Chapter 5). Information was initially obtained through semi-structured

²²⁹ Chapter 2 describes the nature and context of SMEs. This description is supplemented by Appendix B. Chapter 3 examines e-business and the nature of innovation. This examination is supplemented by Appendices A, C, E and F. Chapter 4 reviews EU and UK policy initiatives intended for SMEs with relation to their adoption and implementation of e-business. This review is supplemented by Appendices K and L.

²³⁰ Chapter 5 describes in detail the research methodologies employed in this research.

interviews, in line with Walsham's (1995) "soft" case interpretivist argument that interviews can "grasp" the interviewees' enactments of their actions and events, beliefs and aspirations. The relevant aspects of interpretive research were also presented in Chapter 5. This explanation demonstrated that the research fulfils the criteria set out for competent interpretive research, and that those criteria have been borne in mind during the conduct of the research.

The "reflective dialogues" with the case organisation principals brought the multiple concerns at stake to the fore.²³¹ They drew attention to the way in which (what is considered to be) sensible, rational or practical depends (to some extent) on standpoint. By attributing rationale to specific actors, and by drawing out the different ways in which priorities can be constructed, this information proved extremely useful to the analysis of complex implementation work. The case organisation principals' acceptance of broad aims, the absence of forced (externally imposed) timeframes, and an emphasis on discussion allowed the multiple agendas of the seven different case organisations to be shown in high relief. It also pointed to a spectrum of possibilities for further research, which is described in the next section of this chapter.

10.2.4 Outcomes of the Research

The literature review (in Chapters 2, 3 and 4) made it clear that SMEs were less likely to adopt e-business than were larger small businesses. However, the findings from this study's seven UK case organisations, who show that e-business can be successfully devised, adopted and implemented by smaller SMEs to develop new markets, contradict such research. That several of the case organisations were pure-player internet start-ups (Davis & Co., GF-X and Lobster) inevitably and fundamentally affected their propensity to adopt e-business, in line with the findings of Donckels and Lambrecht (1997, as presented in Chapter 3), who offered "market focus" as a primary motivator to e-business adoption and implementation. Poon and Swatman (1997a; 1997b; 1997c), APEC (1999) and Porter (2001), among others (in findings also presented in Chapter 3), suggest that SMEs tend to adopt e-business to reach new markets. The data arising from each of these

²³¹ "Reflective dialogues," as they occur in the Dialogical AR, are explained in Chapter 5.3.4.

case organisations supports their view. Confirmation, however, requires further investigation with a broader variety of case organisations. Certainly, the cases presented in this research, individually and collectively, seem to provide excellent examples of how online business models can be used successfully in tandem with offline business activities, and of how a combination of tactical objectives (such as efficiency and cost reduction, with emergent business/IT strategy models) can successfully be executed. These case organisations illustrate the successful implementation of online operations into the business operations of seven UK SMEs (albeit with strikingly different business ventures, goals and achievements). These findings are in line with a number of researchers who have observed that interest in e-business and the internet grows as participants start gaining hands-on experience and realise its potential.²³²

In Chapter 5.3.3, SSM was described as an “explicit, organised and defensible” means of reconciling different perspectives in a way that is appropriate to all parties involved (Wilson, 2001). The process culminates with the construction of a “Rich Picture” of the problem situation (Checkland and Scholes, 1990a; 1990b; Wilson, 2001).²³³ This “Rich Picture” identifies the factors relevant to the research, and illustrates the information and resources of the situation. With this information in mind, Figure 10.7 illustrates a “Rich Picture” of the “problem situation,” incorporating the potential resolution she hoped the research contributed to.

²³² This finding is relayed in a number of research findings in Chapters 1-4 and Appendices A and C.

²³³ As described in Chapter 5.3.3.

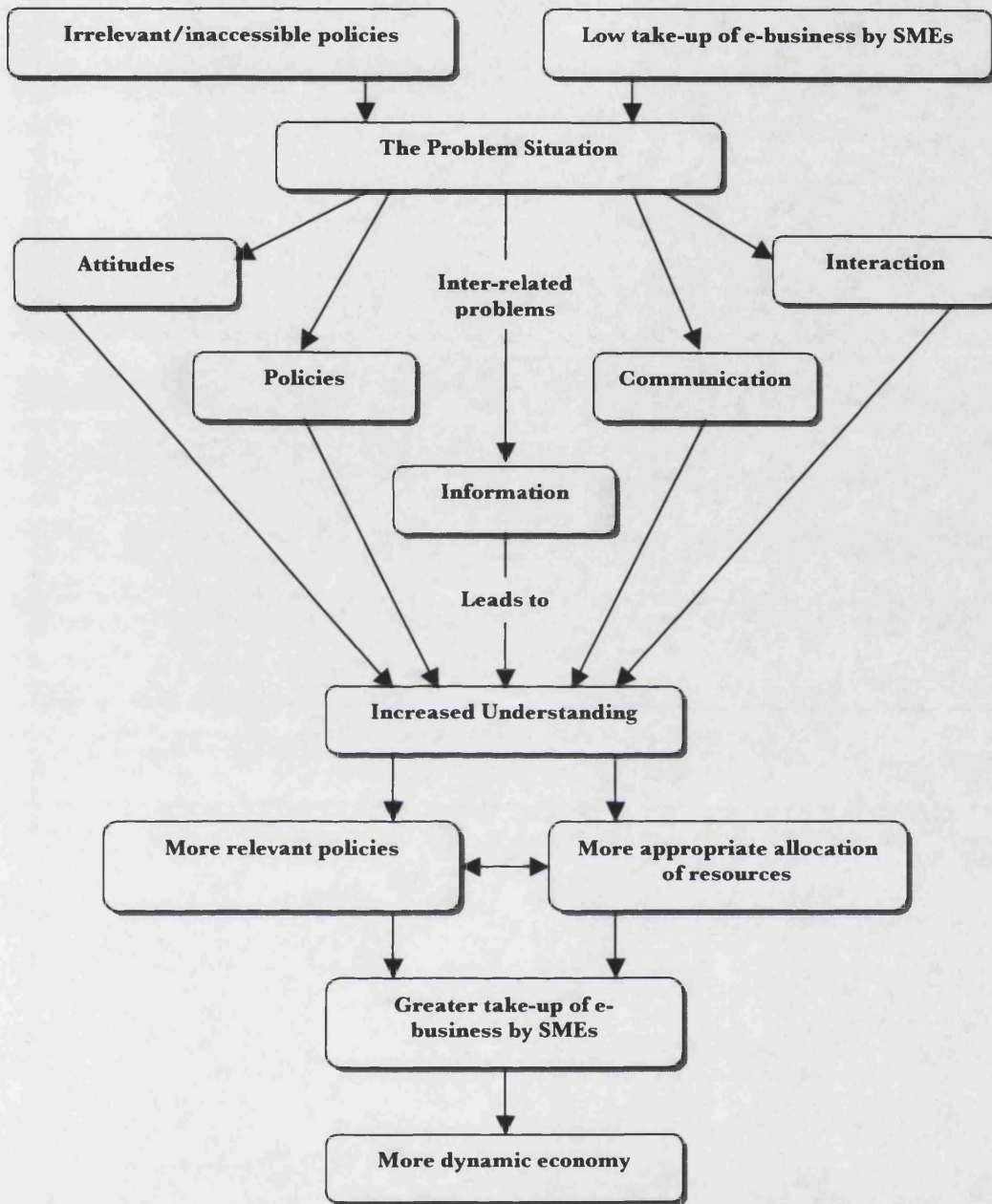


Figure 10.7 – A “Rich Picture” of the “problem situation”

By adopting methodological techniques to allow dynamic characteristics of the case studies to emerge, important insights into the SMEs’ experience of adopting and implementing e-business became accessible. These events, informed by the experience of the case organisations, revealed the situation of organisations attempting to assess the implications of new technology adoption and implementation during the aforementioned

volatile market conditions. For these SMEs, the priority was to ascertain what these technologies could contribute to their businesses with some specificity, and to make their selection as responsibly as possible given the limited resources – time, money and other – that they had available. At the same time, SMEs were criticised for failing to “keep up.” The hype in the press and the rhetoric of governments served the imperatives of the market well, but were unhelpful to those SMEs who had other imperatives – and limited resources – to contend with. As the analysis of the case organisations showed, the orientation of SMEs and their government(s) in this regard often stood in stark contrast to one another.

This soft systems research serves as both a reminder and an example that relationships within and between technical systems have to be constructed in order for information to flow around an organisation in a “systemically desirable and culturally feasible” way. In drawing empirical and analytical attention to the processes of joining these systems together, further insight is gained into the distinctive priorities and rationales that technologies enact in SMEs.

In this real-world manifestation of a complex human activity system concerned with policy generation, a commonly agreed policy is needed that takes into account the values and attitudes of all the various “actors” in the problem situation. The proposed workshop(s) could focus discussion on the subject in an open and collaborative environment that would increase awareness and understanding between and bring together these “actors” – the SME owner/managers and the policy makers – so that they would be able to actively participate with each other in the policy-making process.

Incentivising SME owner/managers to attend workshops set up in order to begin an in-depth and meaningful dialogue between SMEs and policy makers could result in a higher participation rate than is the typical response rate achieved currently with questionnaires. Figure 10.8 illustrates the potential outcome following the participation of SME owner/managers in workshops.

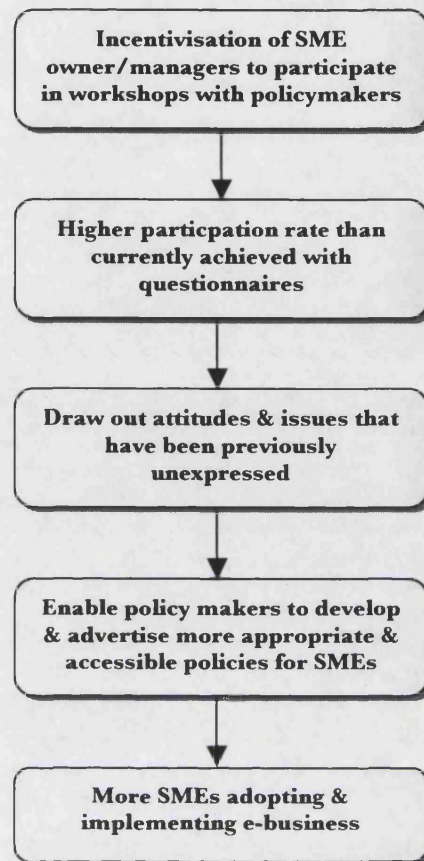


Figure 10.8 – The desired outcome of incentivising SME owner/managers to participate in workshops with policy makers

This arena could be the perfect opportunity to draw out attitudes and issues previously unexpressed, and policy makers would be able to build on the subsequent findings in order to better develop and advertise policies for SMEs generally, and SMEs adopting and implementing e-business specifically, in addition to pointing out directions for future research. Figure 10.9 illustrates how information gained in workshops that SME owner/managers participate in could lead to the formulation of more appropriate government policies, and suggest directions for future research. Figure 10.10, which follows it, shows how this desired outcome can occur.

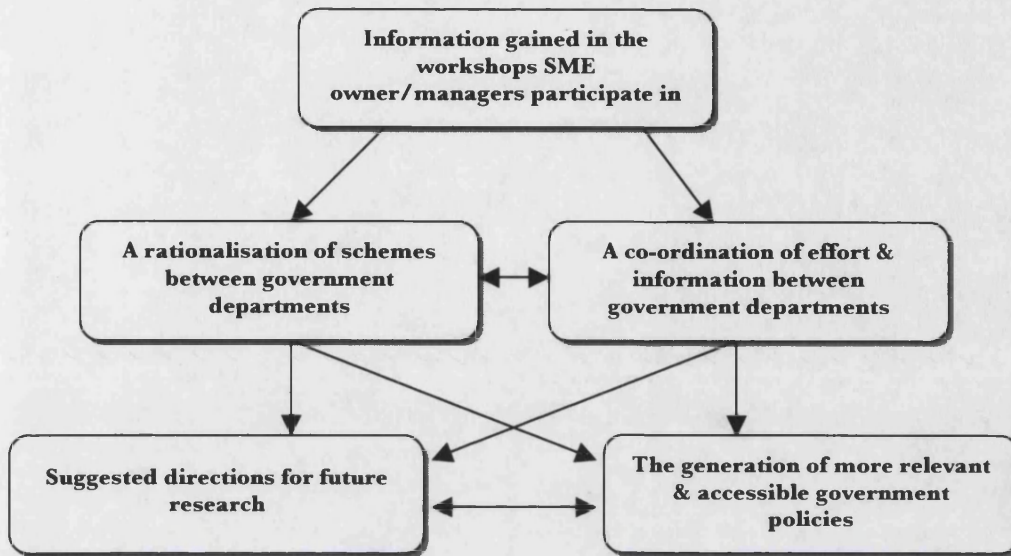


Figure 10.9 – Outcomes of the collaborative workshops between SME owner/managers and policy makers

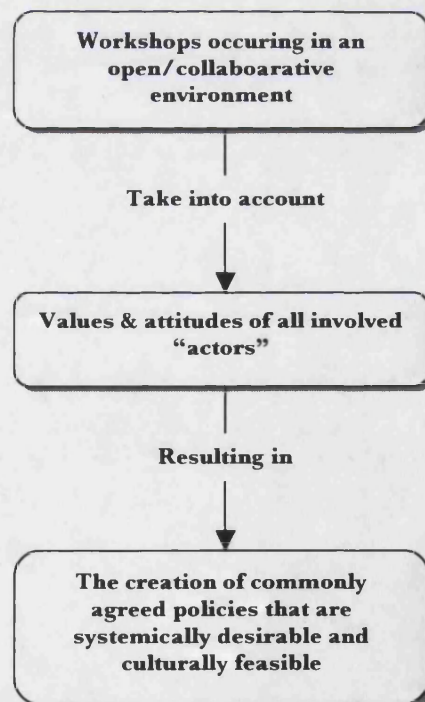


Figure 10.10 – How the desired research outcome can occur

Serving as a preliminary study drawing together all the diverse areas of this research, then, the thesis suggests a rationalisation of schemes and a co-ordination of effort and information between government departments in order to generate more relevant and accessible government policies. This information can be gained through the workshop(s) mentioned throughout the thesis and described in detail in the next section of this chapter.

Developing the explanation of the research methodology and procedural framework here has demonstrated how the relevant theoretical considerations were commuted into valid empirical data collection and analysis. These considerations provided the subtext for the researcher's interactions with the seven case organisations. The directions for future research arising from the amalgam of this research's literature review, methodology, empirical research and outcomes is described in the next section of this chapter.

10.3 DIRECTIONS FOR FUTURE RESEARCH

Ideas for future research that have suggested themselves over the course of this study are presented here. Although it is not possible to include all the issues that have arisen, a selection of inter-related areas for future research is introduced. This selection has been chosen – and is intended – to create a sense of how these issues might cohere to form an integrated plan for future research.

The aims of this research have been achieved to the extent that SSM has now been applied to a multiple agency, multi-owner situation, and that the reconciliation of the asynchronous worlds therein have been successfully modelled. However, it has been shown that more information is needed on what the broad spectrum of SME owner/managers really think and feel will affect them. This, the researcher posits, can be achieved through government departments holding a workshop/series of collaborative workshops attended by SME owner/managers and policy makers alike, in an attempt to generate more appropriate policies for SMEs – a goal directly in line with those stated by the EU, the SBS, the FSB, the DTI and the OofE. The desired changes would be both culturally appropriate and systemically realisable if relevant, cohesive, accessible and visible policies were introduced and targeted towards SMEs.

The researcher wanted to produce an ongoing contribution to IS studies. Within this field, a number of areas for future research suggested themselves. At the point where the fieldwork with the case organisations came to an end, some particularly interesting comparisons were beginning to emerge from developments across the diverse subject disciplines that formed part of each case organisation's experience. It has been shown how the nature of SME e-business adoption and implementation can offer a basis for a very rich and textured account of technological innovation in pedagogic and epistemic practice. In particular, it has the capacity to draw out further implications concerning nuances involved with technologies in social environments. Understanding if, how and to what extent SMEs have developed relationships with technology, and in what ways those technologies affect them also, forms an interesting area of study. The diverse relationships – and the new possibilities – that online resources afford SMEs is yet another highly interesting area that merits further attention.

The researcher considers that this thesis has but begun to start a debate with a few players: the real Action Research would now truly begin with these players, leading them to debate what is systemically desirable and culturally feasible. What is missing from this research is the debate between the actors.

The researcher has suggested that one way to enable this debate to take place could be to divert funds from an existing initiative (ideally one that is not visible/prominent and that has achieved little-to-no tangible success) to conduct either a workshop/series of workshops, from which more in-depth information could be generated directly from a number of SME owner/managers. Such a workshop/series of workshops would place SME owner/managers in an arena where they would likely be able to discuss the issues that concern them in a much more detailed and participative manner than has previously been possible. As a result of the information that comes to light from these discussions, policy makers would likely be better informed – and therefore better equipped – to meet the needs of SMEs than they currently are. Such collaboration could provide an unparalleled opportunity to “tease out” and make explicit the various attitudes held by people in the different agencies concerned. Such attitudes, though strongly held, would (likely) be verbalised, discussed and questioned for the first time in such an arena (Galliers *et al.*, 1981). This might engender a discussion and partnership between SMEs and policy

makers that currently does not exist in a meaningful way. At the very least, the dialogue between SMEs and policy makers is likely to be more authentic as a result of the workshop(s) taking place.

The organising government department and/or agency could invite (say) 1 in 100 SME owner/managers to contribute to the relevant discussion(s), and to incentivise them to attend by offering not only a payment for the day, but also the prospect of winning a prize (of, say, £50,000).

Several additional methods could be employed to maximise the positive response rates to the workshop invitations:

- SME owner/managers could be made aware that, by participating in the workshop, their views would reach government and would have a direct effect on policy relating to entrepreneurs and SMEs.
- Evening and/or weekend workshops could be offered for those who are unable to attend during traditional business hours.
- Letters could accompany the workshop invitation from the SBS and DTI setting out the importance of participation.

A series of workshops of this kind could be set up relatively quickly and could proceed in tandem with the current policies and initiatives in place. However, the orchestration of these workshops *would* entail a considerable amount of subsequent work for the agencies operating the workshops, and also for those responsible for compiling and analysing the details.

Potential positive outcomes that may arise from these workshops could include:

- A dialogue begun with a view to improving co-ordination, co-operation and communication between SMEs and policy makers.

- A clarification of what policy makers can actually offer – on a practical, tangible and measurable level – to SMEs throughout all tiers of government, thereby enabling resources to be allocated to the areas where they would have maximum impact.
- The generation of co-ordinated policies regarding the adoption and implementation of e-business by SMEs.
- The development of more cohesive, accessible and relevant policies for SMEs (Galliers *et al.*, 1981).²³⁴

The problem-solving system suggested by the researcher is a policy identification, selection and implementation system encapsulating the implicit understanding that the policy formulation process requires the identification of options, an assessment of their implementations, and a consideration of the implementation procedure. Such iterations can inform and improve appreciation of the options available, decisions to be made, and alternatives.

Further research is needed in order to test the hypothesis of these workshop(s) in an attempt to generate more appropriate policies for SMEs.²³⁵ The process of setting up the suggested workshops could make the relevant actors' *Weltanschauung* even more explicit, and would enable discussion in an open and collaborative environment. In this way, SMEs and policy makers could actively participate in a mutually beneficial collaboration with each other in the policy-making process where the ownership of the problem and the resultant policy would be explicitly shared.

The outcomes of this research points to a need for policy makers to:

²³⁴ This is explained in some detail in Chapter 5.3.3.

²³⁵ According to evidence presented in Chapter 5, and also to the following relevant references: SBS, 2003c; FSB, 2002a; DTI, 1999; 2001; 2002c; European Commission, 2002a; 2002b.

- Devote time and resources to establishing where evidence exists (such as in research already undertaken by government departments, agencies, academics and consultants).
- Undertake new research (possibly jointly commissioned by several EU and UK government departments) to obtain a fuller understanding of how to define SMEs' experience of government, and what and where the main areas of improvement should be.
- Focus efforts to improve the SME experience of government services on the specific characteristics associated with each type of delivery channel.
- Undertake research that asks sufficiently in-depth questions about customer experience to be of value in improving government service delivery process(es).

The need for further research is illustrated in Figure 10.11.

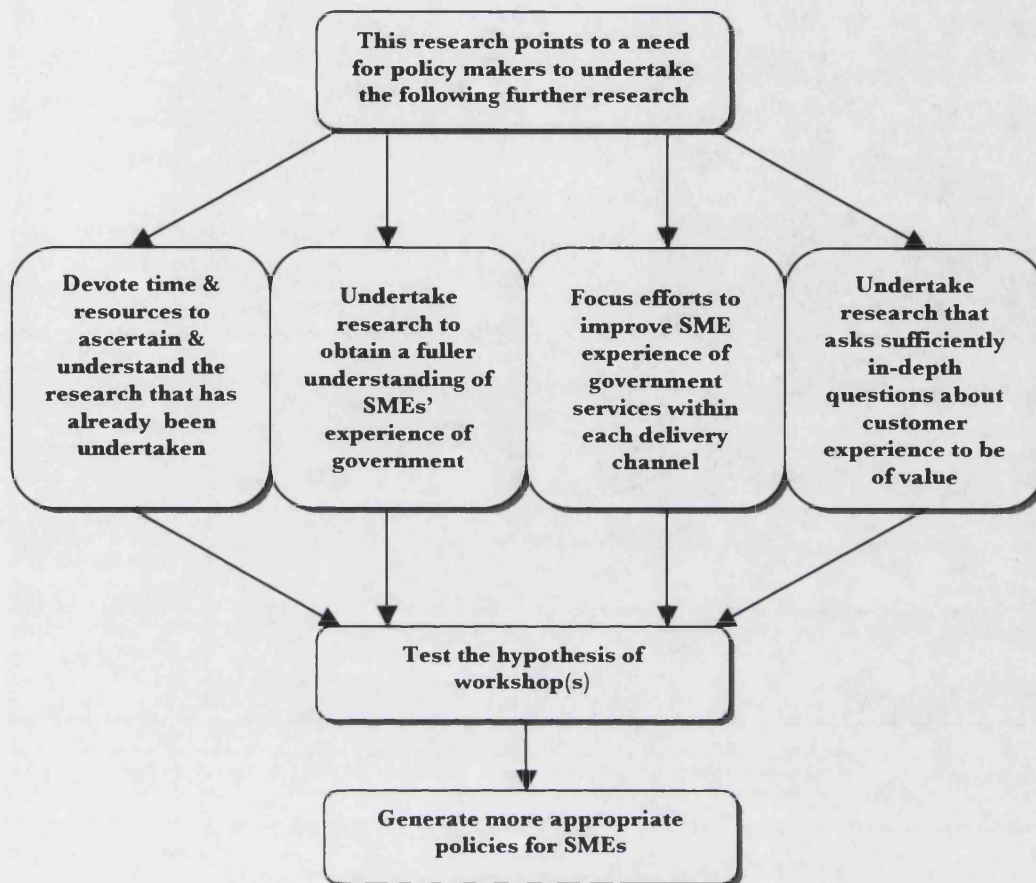


Figure 10.11 – The need for further research

In many instances, the objectives of government policies are not clearly specified, and it is therefore often difficult to determine or to measure the outcome of policy instruments. Further research on this issue is therefore needed.

It would also seem that more sophisticated approaches in the literature are needed to implement strategy and measure performance, as the research has shown that purely financial evaluations of performance no longer suffice, and intangible assets such as relationships and capabilities increasingly determine the prospects for SME e-business success.

This research explores a complex and ill-structured problem situation with multiple owners and that can be viewed from a variety of stances. A summary of the entire

research project has been explored in the previous section of the chapter, and the directions for future research were presented here. With these overviews in mind, the next section of the chapter concentrates on the core contributions of the research.

10.4 CORE CONTRIBUTIONS OF THE RESEARCH

This thesis makes a number of crucial contributions to several important areas of research. It takes an interpretive approach to the study of a domain about which we know relatively little. The theoretical concepts that have been utilised over the course of the dissertation are foremost among these.²³⁶ Developed from the Action Research theoretical foundations provided by the use of ACR, Dialogical AR and the conceptual analytical techniques of SSM borrowed from the Galliers *et al.* (1981) study, these concepts were chosen because they offer theoretical density and coherence to the study. Ideas incorporated from the distinctive methodological combination employed in the research allowed the focus to rest on the task at hand, drawing out priorities and rationales that may (potentially) transgress traditional organisational and/or disciplinary boundaries. Detailed analysis supported the multiple priorities and rationales that emerged. Through data provided by the seven UK case organisations, the scope of analysis situates technological innovation within the context in which it takes place. By extending the remit of the research to include market conditions, the contrasting (and sometimes conflicting) priorities of SMEs are accounted for.

The relevance of this contribution is particularly marked when considered in relation to the existing IS literature. In addition to providing a historical account of a very distinctive time period in the history of technological innovation, this research also creates a context for the priorities that have so far been addressed by SME-related managerial research. The volatile and emergent character of e-business has meant that a number of key areas have not yet received attention in the literature. This thesis specifically and explicitly addresses the respective absence of studies employing SSM in a multiple agency, multi-owner situation, drawing together and reconciling asynchronous worlds.

²³⁶ In line with the findings of Galliers *et al.* (1981) and Checkland and Scholes (1990b).

Within the management, IS and technology canons there are very few precedents for treating the diverse topical and theoretical issues raised by e-business adoption and implementation (a particular example of technological innovation) by SMEs, or for examining relevant policies within the same analytical frame. Disciplinary conventions tend to separate issues relating to organisational, technical and policy domains into different spheres of interest, making it difficult to refer to the inter-relationships that exist between them. The thesis addressed this lack in three main ways:

- First, through research design: an “in practice” view of e-business adoption and implementation and an interpretive approach to data collection and analysis prioritised events taking place in the field sites/case organisations over theoretical distinctions.
- Second, by drawing out the implications of relationships without recourse to the conventions of a particular subject discipline.
- Third, through the development of the complementary theoretical concepts of ACR and Dialogical AR, and (ultimately) their combination with SSM conceptual modelling, form an important contribution that can be extended to other disciplines.

It is possible, from a close examination of these case organisations, to come to the conclusion that they are operating, much as Porter (2001) suggests that they should – making their e-business strategy their business strategy, ensuring that their online activities are central to their off-line operations, and moving closer to full integration of off- and online business operations. This is a key lesson to be gleaned from the study.

The major contributions arising from this research are that the thesis:

- Addresses the “notable absence” of well-structured multiple case study designs in the literature (Drew, 2002).
 - Tests existing knowledge about SMEs and policy generation in an original way.
-

- Examines the development of appropriate and complementary ACR and Dialogical AR analysis tools – this constitutes a methodological extension of SSM (incorporating ACR and Dialogical AR) for ISD, which focuses on social, political and cultural factors and the social construction of problems and solutions.
- Explores a complex and ill-structured problem situation with multiple owners and that can be viewed from a variety of stances – this has rarely been considered in the literature (Galliers *et al.*, 1981; Checkland and Scholes, 1990b).
- Provides a new interpretation that builds on the findings of the Galliers *et al.* (1981) soft systems study. Although applied in a very different context, that earlier study nonetheless parallels this research in that both:
 - Draw together incongruous worlds and suggest a way of pursuing a dialogue that is meaningful to all involved parties.
 - Examine a complex and difficult real world system with a utility of approach that in itself is a contribution to knowledge.
- Organises and summarises references from the various canons.
- Finds that all of the case organisation principals were oblivious to the measures introduced by the EU and UK governments to target and benefit them in their adoption and implementation of e-business. This finding therefore indicates that a significant number of projects and policies initiated to motivate SMEs to adopt and implement e-business were and are neither accessible nor coherent (and therefore relevant) to their intended target audience.
- Extends theory development. SSM has not been widely used in the SME environment, and there are very few examples of iteration taking place featured in the literature (Galliers *et al.*, 1981; Checkland and Scholes, 1990b). This thesis contributes an interpretive approach to the study of a domain about which we know very little.

Figure 10.12 illustrates and summarises these major contributions:

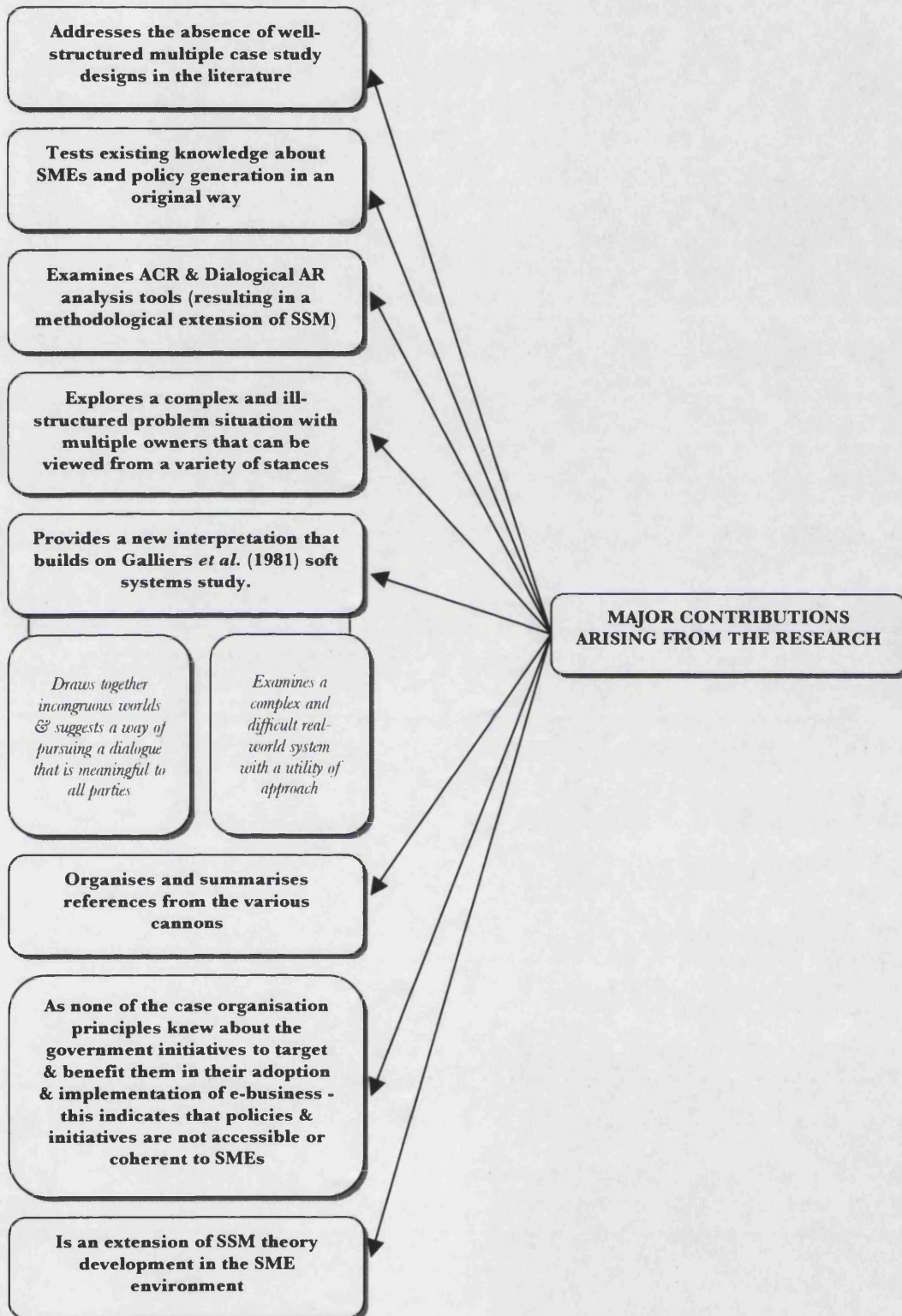


Figure 10.12 – The major contributions arising from the research

These core contributions can be segmented into contributions to: literature, theory, and practice. They are thereby explained in those segments, respectively, in the sub-sections of the chapter that follow.

10.4.1 Contributions to Literature

A primary objective of this research was to make a methodological contribution to the IS literature, especially in relation to theory development in multi-agency problem situations. The research makes this contribution by extending the theoretical parameters of the concept of e-business adoption and implementation by SMEs to include the development of relevant government policies. It is intended, as a result, that scrutiny of related values should be applied to SME organisational arrangements, partnerships and technical systems as much as to their commercial practice.

The empirical evidence that this research offers constitutes another important contribution to the literature. As a cross-organisational study spanning a variety of subject disciplines, this study stands out from the majority of IS research: the longitudinal aspect of the interpretive case studies is important, not only as an account of developments in the adoption and implementation of e-business by SMEs, and as an account of contemporary developments in technology use, but also as a historical account capable of generating inter-relationships between diverse areas of relevance.

Through the thesis' association with policy development, the concept of SME e-business adoption and implementation was deliberately designed in order to traverse traditionally distinct social (political, managerial and commercial) and theoretical domains. In this way, the significance of each domain to the other is drawn out in relation to epistemic culture and the distinctive rationales for working with people, environments and materials that the subject disciplines enact. In the analysis provided, the epistemic, pedagogic, commercial and organisational concerns contribute important dimensions to understanding SME innovation.

The integration of these subject areas has not hitherto been sufficiently addressed in the IS canon. Part of the reason for this is the separation of pedagogic concerns into disparate

bodies of research. The underlying nature of this separation is addressed by this thesis, and through its emphasis on empiricism, the crossover between theory and practice is opened up as an area of analysis, moving beyond distinctions of management, policy development and technology studies. In so doing, the research has highlighted the multi-disciplinary nature of IS. Taking into account these concerns, and accounting for their significance, holds implications for the research's contribution to both theory and practice, which are described in turn in the respective sub-sections of the chapter that follow.

10.4.2 Contributions to Theory

An important contribution to relevant and accessible theory generation is made to a number of areas of research in this thesis. Foremost among these contributions is that made to the analysis of complex implementation scenarios involving multiple socio-technical “soft” problem situations. In addition to extending the concept of technological adoption and implementation, this research also engages with several core concerns within the IS literature. The research's example of innovation adoption and implementation was recognised by the researcher as an opportunity to also simultaneously contribute to policy, technology and management research.

It can also be argued that the example of the seven UK SME case organisations' adoption and implementation of e-business during this time period is an important contribution to the IS literature on infrastructure and integration: issues concerning market conditions and technology hype were at the forefront of the case organisations' early adoption and implementation experiences. With respect to the experience of these case organisations, further dimensions were identified as emerging from policy rhetoric and the management literature.

The thesis explicates a unique synthesis of multi-methodologies – its utilisation of the distinctive combination of ACR, Dialogical AR and SSM conceptual modelling has not previously occurred.²³⁷ The researcher's objective was to make a methodological contribution to ISD by combining ACR, Dialogical AR and SSM. The principal

²³⁷ The multifarious benefits of employing multi-methodologies are expounded in Chapter 5.3.1.

methodological theoretical contribution to knowledge (in the sense of expanding the available understandings of possible methods for undertaking IS development) can be specified as follows:-

- For Action Research, the thesis:
 - Provides a further demonstration of the use of SSM in Action Research.
 - Strengthens the validity of ACR and Dialogical AR as forms of Action Research (AR).
- For ACR, the thesis:
 - Combines this distinctive methodological approach with the interpretive case studies.
 - Adapts the methodology to the context of SSM analysis.
 - Adapts the methodology to the context of Dialogical AR analysis.
- For Dialogical AR, the thesis:
 - Combines this distinctive methodological approach with the interpretive case studies.
 - Adapts the methodology to the context of SSM analysis.
 - Adapts the methodology to the context of ACR analysis.
- For SSM, the thesis:
 - Develops SSM in the IS/SME literature.
 - Introduces and develops the complementary techniques of ACR and Dialogical AR, combining them for the first time.

These contributions to theory are illustrated in Figure 10.13.

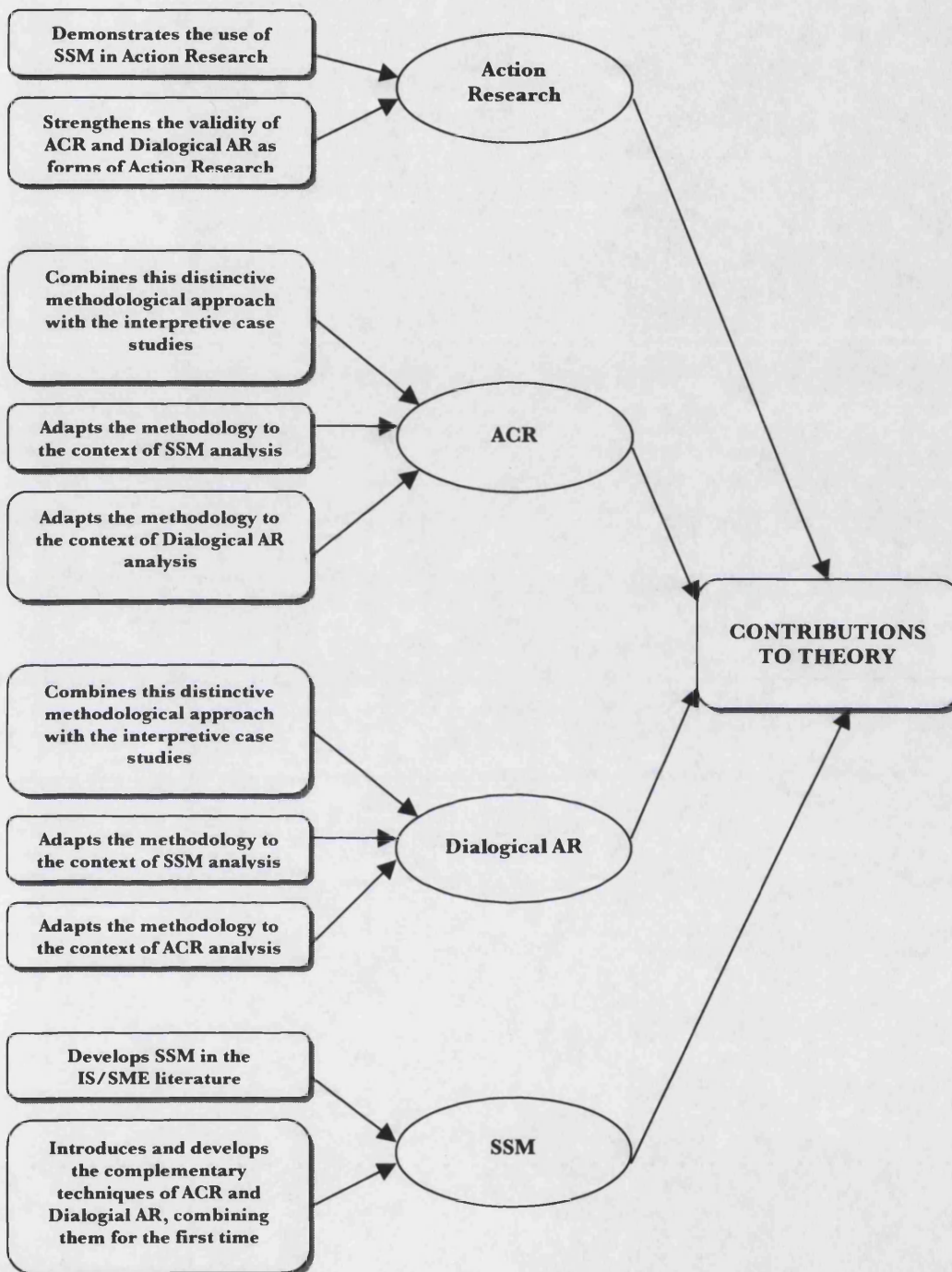


Figure 10.13 – Contributions to theory

The research design allowed highly detailed aspects of technology work to be brought to the foreground of analysis. On account of the rich description provided, new dimensions

are added to conceptions of e-business adoption and implementation. The diverse rationales that technologies enact and the complexity of implementation work are brought to the foreground, as are the inherent choices. Emerging from the details of implementation comes the description of the experience of the case studies. The ensuing analysis offers important insights for IS literature.

The thesis also makes a contribution to research and was designed to form part of the vocabulary that researchers in this area have developed. The combination of ACR, Dialogical AR and SSM conceptual modelling is an especially important addition to this body of work because it points to a spectrum of possibility rather than to fixed ascriptions. In this respect, the research was able to point to a pre-existing absence of “systemic desirability and cultural feasibility,” as well as to clearly articulated conflicting systems of belief between the problem situation “owners.” These concepts are an important addition to the study of technology, where questions and values tend to become marginalised.

SSM conceptual modelling was deliberately chosen by the researcher in order to traverse traditionally distinct social, technical and theoretical domains. In this way, the significance of epistemic culture and the distinctive rationales for working with people, environments and materials that the subject disciplines enact are brought to the fore. They also facilitate reference to the varying character of epistemic values; the diverse methods through which subject disciplines construct rationality; and the range of people, equipment and physical environments of which disciplines are composed. The underlying nature of this separation is confronted by the research in this thesis, and the crossover between subject areas is opened up as an important area of analysis.

This study has much to offer the IS canon in terms of deepening theoretical understandings. The research has shown that the interdisciplinary nature of IS places it in an excellent position to contribute to analyses of the complex inter-relationships formed by adopting and implementing technological innovation and relevant policy generation. A further dimension emerged from policy rhetoric, market hype and the management literature. The implications of these conditions with respect to technology adoption and implementation and to the experience of the case organisations looking out upon dynamic market conditions were drawn out in the study. These implications are linked to issues

concerning not only policy development, but also network and partnership formation, critical timeframes and contrasting priorities. In this respect, the example of the seven UK case organisations during this time period is an important contribution to the IS literature.

Having described the research's contributions to theory here, the next sub-section of the chapter examines the research's contributions to practice.

10.4.3 Contributions to Practice

The thesis addresses the lack of empirical research on SME adoption and implementation of technology from the viewpoint of the (often overlooked) key actors: the SME owner/managers and employees (Brock, 2000; Dixon *et al.*, 2002). According to the seven UK case organisation principals, EU and UK policies and initiatives intended for SMEs during the fieldwork period (and thereafter) were not adequately targeted. Nor did these policies and initiatives focus upon the fundamental needs of SMEs. (This finding supplements other research in the literature presented in Chapter 4.) It was also shown that most SMEs remain unaware of many of the services provided by government, or else they do not, in fact, see them as services (HM Treasury, 2001c).

It can therefore be considered, from the data presented by the principals of the case organisations, that a significant number of the EU and UK policies and initiatives produced to motivate SMEs to adopt and implement e-business were neither relevant, accessible nor coherent to SMEs in the UK and, as a result, offered little practical guidance for them. This last finding, in and of itself, is a valuable contribution to the literature.

This research has enabled a deepened theoretical understanding of the implications of policy development. Issues concerning related dynamic market conditions and technology hype with respect to the experience of SMEs add a further dimension to this contribution. The research ascertains the practical impact of policy initiatives on SMEs, based on the experiences of seven UK SME case organisations, and was designed to instruct constructive and feasible changes in policy making. The implication is that future policy

initiatives may become more appropriate, coherent and accessible to SMEs, generating in turn greater opportunities for them.

It is proposed that governments incentivise SME owner/managers to attend workshop(s) with the aim of enabling an in-depth and meaningful dialogue between both parties to develop, in order to draw out attitudes and issues previously unexpressed. Policy makers could thus build on the findings in order to better generate and advertise more appurtenant policies for SMEs adopting and implementing e-business.

Despite these significant contributions to literature, theory and to practice, there are a number of limitations of the thesis. These are described in the next section of the chapter.

10.5 LIMITATIONS OF THE THESIS

The primary limitation of this thesis is that the research has been unable to deal with the necessary debate other than within the case organisations: no debate between SME principals and policy makers has taken place – it was simply beyond the scope of this investigative piece of research. Nonetheless, the lack of a debate between the relevant parties is a major limitation of which the researcher is painfully aware.

Choices that were made during the course of designing this research brought with them limitations as well as opportunities. One of the most striking omissions from the case studies is the absence of evidence concerning the case organisations' customers' experience. Ultimately, research activities were forced to stop short of directly engaging with customer attitudes and opinions. Having traced e-business adoption and implementation by the seven case organisations during the fieldwork period, it was not feasible to extend the design to include comprehensive evidence of customer engagement and experience. The iterative nature of the business-customer relationship, and the constant feedback that the case studies received, was apparent, not only in interviews, but also in the subtle yet emphatic design and service principles the case organisation principals sought to instate. Nonetheless, it cannot be assumed that enthusiastic pedagogic intentions or well-intentioned website and/or database designs automatically constitute

positive customer services and/or experiences. Evaluative statements about the role of customer experience in improving or inhibiting design were therefore avoided.

Another flaw that runs through this research is that the case studies present only positive and “successful” examples of SME e-business adoption and implementation. The research did not engage with either negative “unsuccessful” examples or cases that had chosen non-adoption of e-business. The descriptions in Chapters 1 and 2 of the “overall” UK SME situation, giving a clear sense of the number of disaggregated SMEs, addressed this shortfall to some extent, by drawing attention to the exclusion and marginalisation that forms an implicit part of SMEs’ technology priority-setting activities. It could have been just as relevant to conduct a study of non-adopters as it was to study these pioneers, and the range of reasons derived from that line of questioning could have provided as much insight into SME e-business adoption and implementation as this study has. Those details could have enlivened the account of the projects, and added depth. However, it was not possible to address these issues in sufficient analytical depth within the thesis, and so they were not given detailed treatment. These limitations should be taken into account in future research.

An additional limitation of the research is the small amount of fieldwork using the newly developed combinations of methodologies. One small project does not provide enough evidence to support the claim that the approach of combining ACR, Dialogical AR and SSM conceptual modelling demonstrates any merit generalisable to other situations. Further research is needed here.

The choice of variables selected for the study is somewhat problematic because of the complex and changeable nature of e-business. According to Sohal and Ng (1998), the views expressed by the case organisation principals are those of a single individual from each of the case organisations – only those owner/managers interested in the study were likely to participate in such a study. Reliance on the perceptions of one key informant from each of the case organisations, who was the instigator of e-business adoption, may imply cognitive biases. Although we have seen that Raymond (2001) demonstrated that this methodology can draw valid conclusions, the generalisability of these results across

SMEs in other countries is not possible, so therefore further research is needed to produce such conclusions.

In this chapter, which rounds off the thesis, the nature of the research “problem situation” has been outlined. The key points that inform this exploratory research were described therein. Next, the theoretical development of the research, informed as it was by a number of different disciplines, was explained. Understanding the theoretical frameworks and methodologies, and the research procedures that they entailed, was crucial to understanding the research outcomes and to defining the research’s contributions to literature, theory and practice. The limitations of the research were then explored.

Having provided a summary of the research, indicated directions for future research, reviewed the core contributions and examined the limitations of the research, the next, and concluding, section of the chapter consolidates the discussion of the research that has been presented throughout the chapter. The following section summarises the implications drawn from the research and closes off the research “problem situation” that the research has explored. This concise conclusion explains how the thesis draws together and reconciles – in a “systemically desirable and culturally feasible” way – the asynchronous “worlds” of SMEs, e-business and policy making.

10.6 CONCLUSION

This thesis sets out an agenda for what needs to be done. It has been described as a preliminary study setting the scene for subsequent work. Through presenting an outline of the various domains and approaches that are present within the literature relating to SMEs, e-business and policy initiatives, the researcher’s implicit aim was to address identified gaps in the literature and to establish a viable scenario for future practical work. A transdisciplinary approach such as Information Systems offers considerable scope for moving between these theoretical and empirical parameters. The IS perspective also creates an opportunity to study relationships that have not as yet received adequate attention between SMEs, e-business and policy makers. These include:

- How SMEs and policy makers inter-relate.

- The organisational implications of integrating technology/innovation/e-business into a small organisation's business.
- The implications of governments adopting a more inclusive and collaborative approach to SMEs by instigating a dialogue with them.

By adding texture to the study of these subjects, the opportunities that e-business affords SMEs can be opened up to scrutiny, with the potential to gain a more nuanced understanding of how governments can contribute to SMEs' successful adoption and implementation of e-business. The researcher believes that the most desirable circumstances for this will be achieved when appropriate policies are introduced. By identifying the major facilitators and inhibitors, this study may help government and industry bodies to provide appropriate information and support, and thereby facilitate e-business adoption and implementation by SMEs.

The research in this thesis encourages critical consideration of the reach and scope of government policies, both in terms of who is served by them and who is not, and in terms of the limits of their remit. It suggests a way of drawing together related issues. In this way, the research affords a greater scrutiny of relationships that imply a disaggregation of government services to SMEs. This, in turn, offers the potential to look into questions concerning SMEs' issues associated with technological innovation. Further, the research creates critical awareness of the unfamiliar relationships and associations that the introduction of new technology brings, which also serves to highlight issues involved in integrating new technologies. Finally, the research supports an awareness that SMEs are important, which brings levels of engagement and visibility to the fore of their operative processes, and their contribution *en masse* to the economies in which they operate.

The design of the research incorporates learning from empirical situations informed by theory. Devising a project that is informed by previous projects and that theoretically presents a sensible way of proceeding, however, results in difficulties as to how to define what constitutes practical or research success. Perhaps a more important criterion than success is that the research influences events – or precipitates change – in some observable way, both in the practical situation and in the research community. The research could

be incorporated into a programme of additional but similar research projects in order to allow developments to evolve. However, this calls for resources beyond those available to a lone self-funded researcher.

Supplementary information referred to in this chapter is located in the following appendices:

- Appendix A – The Advantages of e-Business Adoption and Implementation
- Appendix B – SME Characteristics
- Appendix C – Drivers to e-Business Adoption by SMEs
- Appendix E – Barriers to e-Business Adoption by SMEs
- Appendix F – The Disadvantages of e-Business Adoption and Implementation
- Appendix K – EU Policy Initiatives and Programmes Aimed at Stimulating Innovation and/or the SME Sector
- Appendix L – UK Policy Initiatives and Programmes Aimed at Stimulating Innovation and/or the SME Sector
- Appendix O - Findings Arising From the Case Studies Relating to the Literature Review
- Appendix P - Findings Arising From the Case Studies Not Relating to the Literature Review

Appendix A

The Advantages of e-Business Adoption and Implementation

The Advantages of e-Business Adoption and Implementation
<p>General benefits</p> <ul style="list-style-type: none"> • APEC, 1999 (advocates e-business as a way of reducing transaction costs, gaining market share, streamlining business processes, achieving competitive advantage and improving relationships with business partners for improved business performance) • Bekker and Staude, 1988 (enables market fragmentation, the information capacity to treat mass clients as individuals, convergence between products and services, global production networks, simultaneous co-operation and competition between firms, and changes the nature of competition) • Currie, 1998 (results in cost savings, time savings and quality improvements) • Drucker, 1998 (extraordinary leverage and increasing returns) • Evans and Wurster, 1999 (transforms competitive strategies and creates new sources of advantage) • Ghosh, 1998 (transforms competitive strategies and creates new sources of advantage) • Goldman <i>et al.</i>, 1995 (enables: market fragmentation; the information capacity to treat mass clients as individuals; convergence between products and services; global production networks, and simultaneous co-operation; and competition between firms and changes the nature of competition) • Porter, 2001 (advocates e-business as a way of reducing transaction costs, gaining market share, streamlining business processes, achieving competitive advantage and improving relationships with business partners for improved business performance)
<p>Lower administration costs</p> <ul style="list-style-type: none"> • Abell and Limm, 1996 • Berg and Karttunen, 1998 • Currie, 1998 • Hawkins and Prencipe, 2000 • Howarth, 2002 • Poon and Swatman, 1997a; 1997b; 1997c • Quayle, 2002a; 2002b • Radstaak and Ketelaar, 1998 • Turban <i>et al.</i>, 2000
<p>Lower production costs</p> <ul style="list-style-type: none"> • Abell and Limm, 1996 • Angehrn, 1997

The Advantages of e-Business Adoption and Implementation
<ul style="list-style-type: none"> • APEC, 1999 • Berg and Karttunen, 1998 • Currie, 1998 • Europmedia, 2001 • Gulledge and Sommer, 1998 • Hawkins and Prencipe, 2000 • Howarth, 2002 • Kalakota and Whinston, 1997 (lowers the transaction costs of simple, routine purchases) • Poon and Swatman, 1997a; 1997b; 1997c • Porter, 2001 • Quayle, 2002a; 2002b • Raymond, 2001 (reduces or removes the need for intermediaries) • Raymond and Bergeron, 1996 • Shapiro and Varian, 1998 • Turban <i>et al.</i>, 2000 (transaction costs are low)
<p><i>Reduced lead time</i></p> <ul style="list-style-type: none"> • Abell and Limm, 1996 • Currie, 1998 • Gulledge and Sommer, 1998 • Hawkins and Prencipe, 2000 • Poon and Swatman, 1997a; 1997b; 1997c • Quayle, 2002a; 2002b • Radstaak and Ketelaar, 1998 • Raymond and Bergeron, 1996
<p><i>Reduced Stock</i></p> <ul style="list-style-type: none"> • Currie, 1998 • Gulledge and Sommer, 1998 • Kalakota and Whinston, 1997 • Quayle, 2002a; 2002b • Radstaak and Ketelaar, 1998
<p><i>Increased Sales</i></p> <ul style="list-style-type: none"> • Abell and Limm, 1996 • Angehrn, 1997 (offers the ability to offer appropriate and targeted products) • Bennett, 1998 • Currie, 1998 • Hawkins and Prencipe, 2000 • Kalakota and Whinston, 1997 • Leidner, 1999a; 1999b • Martin and Matlay, 2001 • Peypoch, 1998 • Poon and Strom, 1997 • Poon and Swatman, 1997c • Raymond, 2001 • Raymond and Bergeron, 1996

The Advantages of e-Business Adoption and Implementation

- Ritchie and Brindley, 2000 (erodes trading barriers)
- Shapiro and Varian, 1999 (offers the ability to offer appropriate and targeted products)
- Sparkes and Thomas, 2001
- Trappey and Trappey, 2001
- Turban *et al.*, 2000
- Vescovi, 2000
- Vrazalic *et al.*, 2002

Increased internal efficiency

- Abell and Lim, 1996 (lowers production costs)
- APEC, 1999 (streamlines business processes)
- Auger and Gallagher, 1997
- Berg and Karttunen, 1998
- Chaston and Mangles, 2002 (existing services can be recreated, presented and delivered through this new mode)
- Coccia, 1997
- Currie, 1998
- Fraser *et al.*, 2000
- Gulledge and Sommer, 1998
- Hawkins and Prencipe, 2000
- Howarth, 2002
- Kalakota and Whinston, 1996; 1997
- Kaplan and Sawhney, 2000
- MacGregor *et al.*, 1998
- McWilliams, 1995
- O'Connor and O'Keefe, 1997
- Palumbo and Herbig, 1998
- Poon and Swatman, 1997c; 1998a; 1998b; 1999a; 1999b
- Porter, 2001 (the internet alters industry structures and reduces the ability to sustain operational advantages)
- Quayle, 2002a; 2002b (lowered administration costs)
- Radstaak and Ketelaar, 1998
- Tetteh and Burn, 2000; 2001

Improved relations with business partners / customers

- Abell and Lim, 1996
- APEC, 1999
- Auger and Gallagher, 1997
- Blattberg and Deighton, 1991
- Brannback and Puhakainen, 1998a; 1998b
- Cairncross, 1997
- Currie, 1998
- Feinberg and Eastlick, 1997
- Gulledge and Sommer, 1998
- Hawkins and Prencipe, 2000
- Kalakota and Whinston, 1996; 1997
- Kalakota and Robinson, 1999
- McKenna, 1997
- McWilliams, 1995

The Advantages of e-Business Adoption and Implementation

- O'Keefe and McEachern, 1998
- Palumbo and Herbig, 1998
- Peppers and Rogers, 1997
- Poon and Strom, 1997
- Poon and Swatman, 1997a; 1997b; 1997c
- Porter, 2001
- Puhakainen and Brännback, 1998
- Quayle, 2002a; 2002b
- Quelch and Klein, 1996
- Shapiro and Varian, 1999
- Sparkes and Thomas, 2001
- Stern, 1996
- Vescovi, 2000

New customers and markets

- Bennett, 1997; 1998 (generates international sales without having to obtain foreign representation)
- Cairncross, 1997 (enables SMEs to operate on an international scale)
- Currie, 1998
- Devins, 1994
- Guthrie and Austin, 1996 (enables SMEs to compete with larger organisations)
- Hamill and Gregory, 1997
- Julien *et al.*, 1997
- Kalakota and Robinson, 1999
- Kalakota and Whinston, 1997
- Lawrence, 1997
- O'Keefe and McEachern, 1998 (enables SMEs to operate on an international scale)
- Puhakainen and Brännback, 1998
- Poon and Swatman, 1997a; 1997b (enables SMEs to operate on an international scale)
- Quayle, 2002a
- Quelch and Klein, 1996 (enables SMEs to operate on an international scale)
- Raymond, 2001
- Ritchie and Brindley, 2001
- Sparkes and Thomas, 2001
- Sterne, 1996 (a company's services can be effectively "open" 24 hours a day)
- Turban *et al.*, 2000 (generates sales leads, locally and remotely)
- Vescovi, 2000
- Watson *et al.*, 1998 (enables SMEs to compete with larger organisations)

Improved competitiveness / increased flexibility

- Currie, 1998
 - Evans and Wurster, 1999
 - Feinberg and Eastlick, 1997 (can personalise suggestions and send them to individual customers/groups)
 - Fraser *et al.*, 2000
 - Ghosh, 1998
 - Guthrie and Austin, 1996
 - Kalakota and Whinston, 1997 (can personalise suggestions and send them to individual customers/groups)
-

The Advantages of e-Business Adoption and Implementation
<ul style="list-style-type: none"> • McKenna, 1997 (can personalise suggestions and send them to individual customers/groups) • Porter, 2001 • Porter and Millar, 1985 • Radstaak and Ketelaar, 1998 • Rayport and Jaworski, 2001 • Sterne, 1996 • Timmers, 2000 • Vescovi, 2000 • Watson, <i>et al.</i>, 1998
<p><i>Improved marketing</i></p> <ul style="list-style-type: none"> • APEC, 1999 • Coccia, 1997 • Currie, 1998 • Kalakota and Robinson, 1999 (offers customers up-to-date information and personal pricing) • Kaplan and Sawhney, 2000 • Lawrence, 1997 • Puhakainen and Brännback, 1998 • Quayle, 2002b • Porter, 2001 • Sparkes and Thomas, 2001 • Vescovi, 2000
<p><i>Makes new business models possible</i></p> <ul style="list-style-type: none"> • Rayport and Jaworski, 2001 • Timmers, 2000
<p><i>Improved quality of information</i></p> <ul style="list-style-type: none"> • Abell and Limm, 1996 • Auger and Gallagher, 1997 • Coccia, 1997 • Cohen, 1998 • Currie, 1998 • Gullett and Sommer, 1998 • Kalakota and Whinston, 1996 • Kaplan and Sawhney, 2000 • McWilliams, 1995 • Palumbo and Herbig, 1998 • Poon and Swatman, 1997c; 1999a; 1999b • Quayle, 2002a • Radstaak and Ketelaar, 1998

Table A.1 – The Advantages of e-Business Adoption and Implementation

Appendix B

SME Characteristics

SME Characteristics
<p><i>SMEs differ from large businesses</i></p> <ul style="list-style-type: none"> • Bunker and MacGregor, 2000 (decision-making on IT adoption differs from large businesses) • Castleman <i>et al.</i>, 2000 • Castleman and Coulthard, 2001 • Chen and Williams, 1998 (SMEs are usually reactive rather than proactive) • Cheney <i>et al.</i>, 1986 • Clegg, 1990 • Cornford <i>et al.</i>, 1991 (typically seek advice from friends and family rather than professionals) • Ein-Dor and Segev, 1978 • Gibb, 2000 • Granovetter, 1992 • Mulhern, 1995 • Murphy, 1996 (management style differs from large businesses) • Oakey, 1985 • Pahl, 1984 • Raymond, 1985; 1989; 1990b • Reynolds <i>et al.</i>, 1994 (SMEs are more product-oriented than large businesses) • Smallbone <i>et al.</i>, 2000 (distinctive organisational culture) • Tatnall and Burgess, 2002 • Thompson and McHugh, 1995 (business decision-making affected by personal, domestic, community and lifestyle factors) • Thong, 2001 (SMEs have fewer resources in time, money and knowledge/IS expertise) • Weber, 1985 • Welch and White, 1981 (SMEs usually have short-range management perspective) • Westhead and Storey, 1996 (SMEs are more likely to be subject to external uncertainties)
<p><i>Strong owner influence / centralised management</i></p> <ul style="list-style-type: none"> • Bekker and Staude, 1988 • Blili and Raymond, 1993 (poor management and business skills are common) • Bolisani and Scarco, 1999 (few contacts with external knowledge sources) • Bunker and MacGregor, 2000 (IT decisions are usually made by the owner) • Dandridge, 1971 • Dennis, 2000 (owners often withhold details from colleagues, and have a strong desire for independence) • Harrison, 1994 (business is affected by whether or not owner/manager is an assertive and rational decision-maker) • Iacovou <i>et al.</i>, 1995 • Julien <i>et al.</i>, 1997

SME Characteristics

- Kirby and Turner, 1993 (whether or not the owner/manager understands the technology)
- Miller and Droge, 1986
- Miller and Toulouse, 1986
- Mulhern, 1995
- Murphy, 1996 (management style)
- Nelson and Winter, 1977; 1982 (organisational inertia)
- Oakey, 1985
- Olave and Nato, 2001 (absence of bureaucracy)
- Raymond, 1985 (centralisation of structure)
- Reynolds *et al.*, 1994 (little use of consultants in decision making)
- Smallbone *et al.*, 2000 (distinctive organisational culture linked to the proximity of ownership and management)
- Spender, 1996 (absence of bureaucracy)
- Welch and White, 1981 (short-range management perspective)
- Yap and Thong, 1997 (whether or not they understand the technology)

Higher-risk levels

- Brigham and Smith, 1967 (SMEs statistically fail more often than large businesses)
- Cochran, 1981
- Cooley *et al.*, 1987
- Dandridge, 1979
- DeLone, 1981; 1988
- Dennis, 2000
- Kennedy and Healy, 1985
- Martin, 1989
- Nunes and Cunha, 2000 (SMEs are more volatile due to a limited resource base)
- Thong, 1999; 2001
- Walczuch *et al.*, 2000
- Walker, 1975 (SMEs statistically fail more often than large businesses)
- Welch and White, 1981

Difficulties recognising and obtaining appropriate sources of finance

- Bili and Raymond, 1993
- Cragg and King, 1993
- Dandridge, 1979
- DeLone, 1988
- Gaskill *et al.*, 1993
- Gaskill and Gibbs, 1994
- Raymond, 2001
- Reynolds *et al.*, 1994
- Thong, 1999; 2001
- Thong *et al.*, 1993
- Tidd *et al.*, 1997
- Welch and White, 1981

Intuitive decision-making

- Bunker and MacGregor, 2000 (IT decisions are based on short range planning)

SME Characteristics

- Chen and Williams, 1998 (SMEs are usually reactive rather than proactive)
- Cornford *et al.*, 1991 (often rely of "gut feelings")
- Reynolds *et al.*, 1994 (decision making does not usually entail research)
- Spender, 1996 (organic structure and culture can foster innovation)
- Welch & White, 1981

Informal and inadequate planning processes

- Bunker and MacGregor, 2000 (do not conduct strategic planning because do not recognise/understand the need to do so)
- Chappell and Feindt, 1999 (chaotic organisational structure)
- Giaglis *et al.*, 1998 (do not conduct strategic planning because do not recognise/understand the need to do so)
- Gunnigle and Brady, 1984 (few formal mechanisms in place)
- Jeffcoate *et al.*, 2002 (do not conduct strategic planning because do not recognise/understand the need to do so)
- Lee, 2001
- Levy *et al.*, 2001a; 2001b (poor at monitoring large firms' or competitors' performance)
- McMahon, 1994 (haphazard human resources planning)
- Millar and Besser, 2000 (decisions are often made with community in mind)
- Pollard and Hayne, 1998 (do not conduct strategic planning because do not recognise/understand the need to do so)
- Raymond, 2001
- Reynolds *et al.*, 1994 (decision-making does not entail detailed study or evaluation of all options)
- Stauber, 2000
- Tetteh and Burn, 2001 (IT decisions are not based on detailed planning)

Lack of control over external environment

- Bekker and Staude, 1988 (external environment is increasingly competitive, turbulent and uncertain)
- Cobbenhagen and Nauwelaers, 1999
- Davenport, 1992
- Dixon, *et al.*, 2002 (unable to shape operating conditions)
- Goldman *et al.*, 1995 (external environment is increasingly competitive, turbulent and uncertain)
- Hill and Stewart, 2000 (uncertainty about environment)
- Kirby and Turner, 1993 (pressure from customer/supplier/industry sector)
- Raymond, 1985 (cannot control extra-organisational environment)
- Smallbone *et al.*, 2000
- Thong, 2001
- Thong *et al.*, 1993 (susceptible to external forces)
- Tidd *et al.*, 1997 (decision to adopt e-business often strongly influenced by the innovativeness of customers)
- Welch and White, 1981 (volatile competitive environment)
- Westhead and Storey, 1996 (small business externally uncertain)
- Yap and Thong, 1995; 1997 (susceptible to external pressures)

Poor record-keeping

SME Characteristics
<ul style="list-style-type: none"> • Markland, 1974
<p><i>Intrusion of family values</i></p> <ul style="list-style-type: none"> • Bunker and MacGregor, 2000 (family often used in place of consultants / family values often intrude on the decision-making process) • Castleman <i>et al.</i>, 2000 • Castleman and Coulthard, 2001 • Clegg, 1990 • Dandridge, 1979 • Dennis, 2000 (family often used instead of consultants) • Drakopoulou-Dodd <i>et al.</i>, 2002 (technical support, financial advice and business know-how comes primarily from family and friends) • Gibb, 2000 • Kets de Vries, 1977 • Miller and Besser, 2000 • Pahl, 1984 • Reynolds <i>et al.</i>, 1994 (SMEs are often family concerns) • Tatnall and Burgess, 2002 • Thompson and McHugh, 1995 (business decision-making affected by personal, domestic, community and lifestyle factors) • Weber, 1985
<p><i>Strong desire for independence/increased flexibility</i></p> <ul style="list-style-type: none"> • Dennis, 2000 (owners often withhold details from colleagues) • Reynolds <i>et al.</i>, 1994 (SMEs tend to avoid joint business ventures if it impinges on independence)
<p><i>Reluctance to take risks with/spend money on technology</i></p> <ul style="list-style-type: none"> • Carter, 1990 (SMEs tend to choose the lowest cost IT and IS “solutions” and to underestimate the time and effort required for implementation) • Dennis, 2000 • Dixon <i>et al.</i>, 2002 (SMEs have limited resources for experimentation and cannot afford to make expensive mistakes) • Gerwin, 1990 (SMEs tend to underestimate the time and effort required for implementation) • Huang <i>et al.</i>, 2004 • Iacovou <i>et al.</i>, 1995 • MacGregor and Bunker, 1996 • Poon and Swatman, 1997a; 1997d • Thong, 2001 (SMEs tend to choose the lowest cost IT and IS “solutions”) • Thong <i>et al.</i>, 1993 (due to financial constraints) • Tidd <i>et al.</i>, 1997 (reluctant to devote resources to invest in technology) • Walczuch <i>et al.</i>, 2000
<p><i>Lack of technical staff/IT expertise</i></p>

SME Characteristics
<ul style="list-style-type: none"> • Barry and Milner, 2002 • Bili and Raymond, 1993 (provide little IT training for staff) • Bunker and MacGregor, 2000 (little IT skills or training) • Cheney <i>et al.</i>, 1986 • Cornford <i>et al.</i> 1991 • Cragg and King, 1993 • Ein-Dor and Segev, 1978 • Hitchens and O'Farrell, 1988 (SMEs have less technical knowledge of their products) • Huang <i>et al.</i>, 2004 (less sophisticated in adopting IT than large businesses) • Iacovou <i>et al.</i>, 1995 (unaware of the benefits of e-business) • Martin and Matlay, 2001 (lack of technical knowledge and specialist staff) • Pitt <i>et al.</i>, 1999 • Pollard and Hayne, 1998 • Premkumar and Roberts, 1999 • Reynolds <i>et al.</i>, 1994 • Thong <i>et al.</i>, 1993 (lack professional experience) • Thong, 2001 (fewer resources in time, money and knowledge/IS expertise) • Welch and White, 1981 (lack professional expertise) • Zimmerman and Mathiesen, 1998
<p>Limited use/knowledge of technology</p> <ul style="list-style-type: none"> • Abell and Limm, 1996 • Cheney <i>et al.</i>, 1986 • Dixon <i>et al.</i>, 2002 (frequently have legacy systems which have become outdated, and which require further expenditure to replace) • Ein-Dor and Segev, 1978 • Julien <i>et al.</i>, 1997 • MacGregor and Bunker, 1996 • Raymond, 1985; 1990a (due to insufficiency of resources) • Poon and Swatman, 1997a; 1997b; 1997c
<p>Limited market share</p> <ul style="list-style-type: none"> • Dixon <i>et al.</i>, 2002 (often forced to accept market conditions as they find them) • Hadjimanolis, 1999 (SMEs often move towards niche markets) • Lawrence, 1997 (SMEs can't compete on the same level as larger businesses) • Quayle, 2002a; 2002b (SMEs often move towards niche markets) • Reynolds <i>et al.</i>, 1994 (heavy reliance on few customers)
<p>Narrow product/service range</p> <ul style="list-style-type: none"> • Bunker and MacGregor, 2000 • Dixon <i>et al.</i>, 2002 (often have small and clearly defined niche markets) • MacGregor <i>et al.</i>, 1998 • Reynolds <i>et al.</i>, 1994
<p>Education/experience/skill practical but narrow</p>

SME Characteristics
<ul style="list-style-type: none"> • Bunker and MacGregor, 2000 (little IT skills or training) • Hitchens and O'Farrell, 1988 (lower skills level and lack of training) • Reynolds <i>et al.</i>, 1994 (provide little training for staff)
<p>Limited resource base</p> <ul style="list-style-type: none"> • Bili and Raymond, 1993 • Carter, 1990 • Chappell and Feindt, 1999 • Cragg and King, 1993 • Dandridge, 1979 • DeLone, 1988 • DFAT, 1999 • Dyer, 1996 • Gerwin, 1990 • Maynard, 1996 • Nunes and Cunha, 2000 • SETEL, 2002 • Smallbone <i>et al.</i>, 2000 • Thong <i>et al.</i>, 1993 (coined the phrase "Resource Poverty") • Thong, 1999; 2001 (fewer resources in time, money and knowledge/IS expertise) • Tidd <i>et al.</i>, 1997 (SMEs tend to lack resources and the capabilities to manage them) • Welch and White, 1981
<p>Flexibility to react to market conditions</p> <ul style="list-style-type: none"> • Bekker and Staude, 1988 • Chappell and Feindt, 1999 • Hadjimanolis, 1999 (SMEs often move towards niche markets) • Iacovou <i>et al.</i>, 1995 (organisational readiness) • Oakey, 1985 • Olave and Nato, 2001 • Quayle, 2002a; 2002b (SMEs flexible enough to recognise and capture niche markets) • Smallbone <i>et al.</i>, 2000 • Troye-Walker, 1998a; 1998b
<p>Lower Wages/Opportunities for staff</p> <ul style="list-style-type: none"> • Gunningle and Grady, 1984 (salaries and wages are usually lower) • Kennedy and Healy, 1985 (usages are usually lower due to smaller degree of unionisation, greater job satisfaction, and lower skills levels) • McMahon, 1994 (haphazard approach to human resources planning and remuneration)
<p>Networks/Alliances</p> <ul style="list-style-type: none"> • Achrol and Kotler, 1999 • Auger and Gallagher, 1997 (formal networking gives rise to informal flows of information and advice) • Bar Nir and Smith, 2002 (formal networking gives rise to informal flows of information and

SME Characteristics
<p>advice)</p> <ul style="list-style-type: none"> • Dean <i>et al.</i>, 1997 (networks can assist SMEs to pool resources and talents) • Dennis, 2000 (SME owner/managers withhold information from network partners) • Engsbo <i>et al.</i>, 2001 • Gibb, 1993 (few SMEs can function to their potential without some form of network) • Gimeno <i>et al.</i>, 1997 (SME owner/managers withhold necessary information from network partners) • Golden and Dollinger, 1993 (SMEs can benefit exponentially through networking) • Grönroos, 1994 • Gummeson, 1997 • Jeal and Wroe, 1999 (SMEs are reluctant to work together in alliances and/or networks) • Keeble <i>et al.</i>, 1999 (SMEs seek out networks to acquire absent skills) • Lei and Slocum, 1992 (network alliances don't necessarily protect SMEs) • Miles <i>et al.</i>, 1999 • Möller, 1992 • Mowery <i>et al.</i>, 1996 (network alliances don't necessarily protect SMEs) • O'Donnell <i>et al.</i>, 2001 (informal inter-organisational links important) • Overby and Min, 2000; 2001 • Ozcan, 1995 (few SMEs can function to their potential without some form of network) • Raymond and Bergeron, 1996 • Rosenfeld, 1996 • Premaratne, 2001 (informal and/or social linkages may provide SMEs more stable information and resources) • Tikkanen, 1998 (formal networking gives rise to informal flows of information and advice) • Webster, 1995 (SMEs are poor at recognising the value of knowledge, and are thereby forced to "exchange" it)

Table A.2 – SME Characteristics

Appendix C

Drivers to e-Business Adoption by SMEs

Drivers to e-Business Adoption by SMEs

Available Resources (people, equipment, knowledge and money)

- Drucker, 1998
- Eden *et al.*, 1997
- Geroski, 1995
- Howard, 1977
- Iacovou *et al.*, 1995 (financial resources and technical know-how influence adoption)
- Nilsson, 1999
- Porter, 2001 (low barriers to entry and equally available to everyone)
- Premkumar and Roberts, 1999
- Raisinghani and Frank, 2003
- Quayle, 2002a; 2002b
- Tidd *et al.*, 1997

Recognition of / enthusiasm for opportunities

- Abell and Lim, 1996 (improvements to lead time)
- Cobbenhagen and Nauwelaers, 1999
- Coccia, 1997
- Cragg and King, 1993
- Daniel and Wilson, 2002
- Davenport, 1992
- Donckels and Lambrecht, 1997 ("market focus" is a primary motivator)
- Eden *et al.*, 1997
- Engsbo *et al.*, 2001
- Evans and Wurster, 1997 (stronger relations with business partners)
- Geroski, 1995 (access to resources as a result of adoption)
- Howard, 1977
- Iacovou *et al.*, 1995
- Kaplan and Sawhney, 2000
- Lawrence, 1997 (access to new markets and/or customers)
- Lefebvre and Lefebvre, 1993
- Levy *et al.*, 2001a; 2001b (can see how e-business can improve competitiveness)
- Mullins *et al.*, 2001
- Nilsson *et al.*, 1999
- Poon and Swatman, 1997b; 1997c (stronger relations with business partners and access to new markets)
- Porter, 2001 (Improvements to internal efficiency)
- Porter and Millar, 1985 (perceived improved competitiveness)

Drivers to e-Business Adoption by SMEs

- Power and Sohal, 2002 (improvements to lead time and ability to reach new markets/customers)
- Purao and Campbell, 1968
- Quayle, 2002a; 2002b (perceived increasing importance of e-business – internal driver)
- Raymond, 2001 (stronger relations with business partners and improved competitiveness)
- Rayport and Jaworski, 2001 (e-business creates new business models)
- Reimenschneider and Mykytyn, 2000 (improvements to lead time and ability to reach new markets/customers)
- Roberts and Berry, 1985
- Rogers, 1995
- Runge and Earl, 1988
- Sathye and Beal, 2001
- Tetteh and Burn, 2001
- Timmers, 2000 (e-business creates new business models)
- Turban *et al.*, 2000 (improved competitiveness)
- Venkatraman, 1994
- Windrum, 2004
- Windrum and Berrenger, 2003 (becoming more proactive and strategy-driven in their technological investments)
- Yap *et al.*, 1992

Customer / supplier influence / competitive pressure

- Abell and Lim, 1996 (pressure from competitors)
- Auger and Gallagher, 1997 (pressure from competitors)
- Caldeira and Ward, 2001; 2002
- Coombs *et al.*, 1987
- Daniel and Grimshaw, 2002 (customer pressure and key supplier pressure)
- DTI, 2002a; 2002b; 2002c
- Iacovou *et al.*, 1995
- Kirby and Turner, 1993 (pressure from customer/supplier/industry sector)
- Lawrence, 1997 (demand and/or pressure from suppliers)
- Lefebvre and Lefebvre, 1993
- Levy *et al.*, 2001a; 2001b
- MacGregor *et al.*, 1998
- Martin, 2001 (competitor and customer pressure)
- Nilsson, 1999
- Parker and Swatman, 1997
- Poon and Swatman, 1997a; 1997b (pressure from competitors)
- Power and Sohal, 2002
- Premkumar and Roberts, 1999
- Quayle, 2002a; 2002b (key supplier and customer pressure)
- Raisch, 2001 (pressure from competitors)
- Raymond, 2001 (demand and/or pressure from suppliers)
- Reimenschneider and Mykytyn, 2000 (pressure from customers)
- Rothwell, 1992
- Tidd *et al.*, 1997 (SMEs often strongly influenced by the innovativeness of their customers and suppliers)
- Turban *et al.*, 2000
- Webster, 1995
- Yap *et al.*, 1992 (level of information intensity)
- Yap and Thong, 1997 (whether or not there is external pressure to adopt IT)

Drivers to e-Business Adoption by SMEs

The internet is an inexpensive source of information

- Daniel and Wilson, 2002 (improve knowledge sharing – internal driver)
- Feinberg and Eastlick, 1997 (e-business can personalise suggestions and send it to individual customers/groups)
- Kalakota and Whinston, 1997 (e-business can personalise suggestions and send it to individual customers/groups)
- McKenna, 1997 (e-business can personalise suggestions and send it to individual customers/groups)
- Sterne, 1996
- Turban *et al.*, 2000

Fast return on investment

- Timmers, 1998; 1999

Start-up and transaction costs are low

- Chaston and Mangles, 2002
- Coccia, 1997
- Kaplan and Sawhney, 2000
- O'Connor and O'Keefe, 1997
- Poon and Swatman, 1998a; 1998b
- Porter, 2001
- Turban *et al.*, 2000

Access to a wider customer pool / increased sales

- Abell and Lim, 1996 (increased sales)
- Bennett, 1997; 1998 (enables international sales without foreign representation)
- Coccia, 1997
- Daniel and Wilson, 2002 (increased national and global market share – internal driver)
- Kalakota and Robinson, 1999 (can offer customers up-to-date information and personal pricing)
- Kalakota and Whinston, 1997 (enables a company's services to be effectively "open" 24 hours a day)
- Kaplan and Sawhney, 2000
- Lawrence, 1997
- Lee, 2001 (increased sales)
- Phan, 2001 (increased sales)
- Poon and Swatman, 1997a; 1999a; 1999b
- Power and Sohal, 2002 (ability to reach new customers and/or markets)
- Puhakainen and Brännback, 1998 (can offer customers up-to-date information and personal pricing)
- Reimenschneider and Mykytyn, 2000
- Sterne, 1996 (enables a company effectively operate 24 hours a day)
- Turban *et al.*, 2000 (generates sales leads locally and remotely)

Drivers to e-Business Adoption by SMEs
<ul style="list-style-type: none"> • Wilson, 2001 • Windrum, 2004 • Windrum and Berrenger, 2004 • Windrum <i>et al.</i>, 2003
<p><i>Improved control</i></p> <ul style="list-style-type: none"> • Auger and Gallagher, 1997 • Poon and Joseph, 2000; 2001 • Reimenschneider and Mykytyn, 2000
<p><i>Improved marketing</i></p> <ul style="list-style-type: none"> • Coccia, 1997 • Kaplan and Sawhney, 2000 • Lawrence, 1997 • Poon and Swatman, 1997a; 1997b; 1997c; 1997d • Power and Sohal, 2002 • Reimenschneider and Mykytyn, 2000
<p><i>Owner/manager characteristics</i></p> <ul style="list-style-type: none"> • Berg and Karttunen, 1998 • Harrison, 1994 (whether or not he/she is an assertive and rational decision-maker) • Iacovou <i>et al.</i>, 1995 • Kirby and Turner, 1993 (their attitude will be dependent on whether or not they understand the technology) • Nilsson, 1999 • Turban <i>et al.</i>, 2000 • Yap and Thong, 1997
<p><i>Improvements to customer service</i></p> <ul style="list-style-type: none"> • Abell and Lim, 1996 • Auger and Gallagher, 1997 • Coccia, 1997 • Daniel and Grimshaw, 2002 • DTI, 2002a; 2002c (improved communications with customers) • Kaplan and Sawhney, 2000 • Poon and Swatman, 1997a; 1997b; 1997c; 1997d; 1999a; 1999b • Power and Sohal, 2002
<p><i>Cost reduction / increased efficiency</i></p> <ul style="list-style-type: none"> • Coccia, 1997 • DTI, 2002a; 2002b; 2002c • Kaplan and Sawhney, 2000

Drivers to e-Business Adoption by SMEs
<ul style="list-style-type: none"> • Martin, 2001
<p><i>Firm Characteristics</i></p> <ul style="list-style-type: none"> • Benjamin and Levinson, 1993 (when both strategy and process levels work in tandem with IS level) • Iacovou <i>et al.</i>, 1995 (organisational readiness) • Kirby and Turner, 1993 (pressure from customer/supplier/industry sector) • Nilsson, 1999 (organisational, environmental and innovation factors) • Van Doren <i>et al.</i>, 2000 (incorporates strategy and process development) • Yap and Thong, 1997 (level of information intensity)

Table A.3 – Drivers to e-Business Adoption by SMEs

Appendix D

Interview Questionnaire

A questionnaire was prepared as the departure point for the “reflective dialogues” with the principals of the case study companies as part of Phase 1 of the research. Arising from design themes that emerged in earlier analysis, this questionnaire examined e-business adoption, implementation and usage by UK SMEs in light of EU and UK policy initiatives. Background information on the case studies was obtained from corporate websites, company documents, and the press prior to the initial interviews with the seven case organisation principals. The goal of this initial exploration was to identify the organisations' experience of the challenges of e-business. The case organisation principals were encouraged to reveal other e-business applications or processes relevant to them. The questions explored the initiation of e-business applications in the case organisations by addressing:

- How the case study organisations decided to adopt e-business processes and services.
- How the processes and services were developed and implemented.
- How satisfied the case organisation principal was/is with the development of these technologies.
- How the case study organisation evaluated/evaluates their experience(s) of e-business.
- What types of costs and benefits they expected/what types of costs and benefits they received.
- What future directions they predict and what they consider to be the biggest challenges to companies in utilising e-business as a business tool.
- Their anticipated future use of e-business.
- How aware of UK and EU policy initiatives the case study company was/is.
- How these policies impacted on their adoption and implementation of e-business.
- How policies could better affect the adoption, implementation and operation of e-business by SMEs.

The structure of the questions was as follows:

1. Background details.
2. Industry and business environment.
3. Overview of e-business adoption and implementation.
4. Strategic business planning.
5. Development and implementation issues.
6. EU and UK policy initiatives.
7. The future.

Table A.4 illustrates the questionnaire interviewees.

Name	Role	Organisation
Peter Osborne	Owner/Director	Berkeley Square Gallery
Christopher Davis	Founder/Director	Davis & Co.
William Goodenough	Group Executive Chairman	Design Bridge
Christopher Foyle	Part owner/Director	Foyle's
Demetrios Zoppos	Managing Director	G-FX
Alex Fitzgibbons	Founder/Director	Lobster
Jessica Seaton	Founder/CEO	Toast

Table A.4 - Table of Interviewees**Case Study Interview Questions****1. Background Details**

- 1.1 What is the name of your company?
- 1.2 When was your company founded?
- 1.3 Where was your company founded?
- 1.4 What is your company's major market?
- 1.5 What do you see your company's major market being in 5 years time?
- 1.6 Is your company private or publicly owned?
- 1.7 How many staff does your company employ?
- 1.8 What is your company's approximate annual turnover?
- 1.9 Has your company's growth over the past 5 years exceeded your expectations? To what extent is this due to the adoption and implementation of e-business?
- 1.10 How many locations/branches does your firm have, and where are they located?
- 1.11 What is your company's reporting structure for ICTs?

2. Industry & Business Environment

- 2.1 To what business sector does your company belong?
- 2.2 What do you see as being the major differences between this and other business sectors?
- 2.3 Is e-business usage different in your sector to others? If so, how?
- 2.4 What is the rate at which products/services become obsolete in your business sector?
- 2.5 How predictable are the actions of your company's competitors?
- 2.6 How different are your company's products/services compared with those of your competitors?
- 2.7 Do you monitor your competitor's activities? How?
- 2.8 How severe a threat does price competition present?
- 2.9 How severe a threat does quality competition present?
- 2.10 How severe a threat does declining demand present?
- 2.11 What do you consider to be the greatest threat facing your company/industry?
- 2.12 How predictable are the demands and tastes of your company's customers?
- 2.13 At what rate has technology changed in your company's industry?
- 2.14 How often must your company change strategic marketing practices in response to competition?

2.15 What are your company's key business drivers?

3. Overview of e-Business Adoption and Implementation

3.1 How did the company's e-business adoption arise?

3.2 Was a formal decision made, or did the situation arise organically?

3.3 Were subsequent decision-making processes formal and informal?

3.4 Was adoption primarily driven by business or technology motivations? If by both, please elaborate as to the combination.

3.5 Rate the driving forces that made your company use e-business:

(1=Not at all applicable - 5=very applicable)

Demand/ Pressure from customers	1...2...3...4...5
---------------------------------	-------------------

The pressure of competition	1...2...3...4...5
-----------------------------	-------------------

Pressure from the suppliers	1...2...3...4...5
-----------------------------	-------------------

To reduce costs	1...2...3...4...5
-----------------	-------------------

To improve customer service	1...2...3...4...5
-----------------------------	-------------------

To shorten lead time	1...2...3...4...5
----------------------	-------------------

To increase sales	1...2...3...4...5
-------------------	-------------------

To improve internal efficiency	1...2...3...4...5
--------------------------------	-------------------

To strengthen relations with business-partners	1...2...3...4...5
--	-------------------

The possibility of reaching new customers/markets	1...2...3...4...5
---	-------------------

To improve competitiveness	1...2...3...4...5
----------------------------	-------------------

To improve marketing	1...2...3...4...5
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To improve the possibilities of control and follow-up	1...2...3...4...5
---	-------------------

3.6 Who made the decision to innovate?

3.7 What were the five most important factors that led to e-business adoption?

3.8 What were the major obstacles or barriers that had to be overcome for your company's adoption, implementation and operation of e-business to be a success?

3.9 What were the processes of adoption?

3.10 Was adoption in direct alignment with the strategic business plan (formal or informal) or direction of the company at that time?

3.11 Were there any concerns?

3.12 What mobile technologies does your company employ?

3.13 Were there any mobile technologies introduced that were subsequently abolished?

3.14 What internet applications does your company employ?

3.15 Were there any internet applications introduced that were subsequently abolished?

3.16 Was there any internal resistance to adoption at any stage? If so, how did this manifest?

4. Strategic Business Planning

4.1 Does your company undertake strategic business planning?

4.2 Is it formal or informal planning?

4.3 How often does planning take place?

4.4 Who are the participants in this process?

4.5 Is a formal strategic business plan produced? If so, who receives a copy?

5. The Development and Implementation of e-Business

- 5.1 What aspects of the overall e-business operation has your company developed in-house? What aspects have been outsourced? What aspects have been purchased "off-the-shelf"? How satisfactory was each aspect?
- 5.2 How do you determine the level of satisfaction?
- 5.3 From the decision to adopt e-business to the first live e-business application, how long did it take?
- 5.4 Were there any difficulties with e-business implementation generally, or adopting specific individual aspects of either the initial project, the subsequent projects, or the technology generally?
- 5.5 Was each e-business technological aspect implemented according to a schedule?
- 5.6 Were there operational problems (such as equipment failure, integration problems, and/or procedural inadequacies)? If so, at what stage did they occur? And how were they resolved?
- 5.7 How many subsequent versions of each e-business aspect have been implemented, and were subsequent experiences similar to or different from the initial experiences? How?
- 5.8 To what extent are the current e-business operations integrated with other ICT systems and business processes?
- 5.9 Has implementation of e-business improved or inhibited relationships with your suppliers and/or clients? How?
- 5.10 Has e-business implementation brought your company additional clients or revenues?
- 5.11 Do you consider that e-business has been a success for your company?
- 5.12 How is success determined?
- 5.13 Has the introduction of e-business influenced and reshaped your company's agenda?
- 5.14 Has e-business altered the way your company operates?
- 5.15 Has the adoption of e-business affected your relationship with your customers?
- 5.16 Has the adoption of e-business affected your relationship with your peers?
- 5.17 Has e-business affected collaboration in any way amongst those in your industry?
- 5.18 Has e-business made your business dealings more transparent to your suppliers or clients?
- 5.19 Rate the benefits your company has experienced introducing e-business:
(1=Not at all applicable - 5=very applicable)

Lower administration costs	1...2...3...4...5
Lower production costs	1...2...3...4...5
Reduced lead time	1...2...3...4...5
Reduced stock	1...2...3...4...5
Increased sale	1...2...3...4...5
Increased internal efficiency	1...2...3...4...5
Improved relations with business-partners	1...2...3...4...5
New customers/markets	1...2...3...4...5
Improved competitiveness	1...2...3...4...5
Improved marketing	1...2...3...4...5
Improved quality of information	1...2...3...4...5
- 5.20 Rate the disadvantages or drawbacks have your company experienced introducing e-business:

(1=Not at all applicable - 5=very applicable)	
Deteriorated of relations with business-partners	1...2...3...4...5
Higher costs	1...2...3...4...5
Computer maintenance	1...2...3...4...5
Additional human resources required	1...2...3...4...5
Being forced to double work	1...2...3...4...5
Reduced flexibility in work	1...2...3...4...5
Reduced security	1...2...3...4...5
Dependence	1...2...3...4...5
It doesn't fit well with products/services	1...2...3...4...5
It doesn't fit well with your way of working	1...2...3...4...5
It doesn't fit well with your customers	1...2...3...4...5
There are no discernable advantages	1...2...3...4...5
Lack of technical know-how	1...2...3...4...5
The security seems doubtful	1...2...3...4...5
The amount for the investment is too high	1...2...3...4...5
Not sure what to choose	1...2...3...4...5

6. Policy Initiatives in the EU and UK

- 6.1 Do you think e-business is redefining business processes and functions in your industry in the light of EU and UK policy initiatives?
- 6.2 How aware are you/have you been of those policy initiatives, and if so, through what means?
- 6.3 How relevant, accessible and coherent are these policy initiatives to you/your industry?
- 6.4 Did you consider these initiatives before adopting e-business?
- 6.5 Did you consider the policy initiatives for SMEs to embrace e-business to be relevant, accessible and coherent?
- 6.6 What factor did these initiatives play in adoption and/or implementation?
- 6.7 What policy initiatives would have better facilitated your company's adoption of e-business?
- 6.8 Through what means could these have been effectively communicated?
- 6.9 What policy initiatives would have facilitated awareness and procedures of your company's implementation of e-business?
- 6.10 What policy initiatives would more effectively facilitate your company's e-business operations?

7. The Future

- 7.1 What do you consider to be the major challenges to companies generally in future use of e-business?
- 7.2 What do you consider to be the major challenges to your industry in future use of e-business?
- 7.3 What do you consider to be the major challenges to companies in future use of e-business as a method of streamlining the supply-chain?
- 7.4 What future changes of your company's e-business operations do you anticipate?
- 7.5 If your company was facing the same e-business decisions today, would anything be done differently?

- 7.6 Do you have any advice for other companies seeking to adopt and implement e-business operations?
- 7.7 Do you have any further comments?

Appendix E

Barriers to e-Business Adoption by SMEs

Barriers to e-Business Adoption by SMEs
<p><i>e-business doesn't fit with products/services</i></p> <ul style="list-style-type: none"> • Abell and Limm, 1996 • Eid <i>et al.</i>, 2002 • Iacovou <i>et al.</i>, 1995 • Kendall <i>et al.</i>, 2001 • Tambini, 1999 • Yap and Thong, 1997
<p><i>e-business doesn't fit with the way they do business</i></p> <ul style="list-style-type: none"> • Abell and Limm, 1996 • Bakos and Brynjolfsson, 2000 • Chau and Pederson, 2000 • Dixon <i>et al.</i>, 2002 • Farhoomand <i>et al.</i>, 2000 • Iacovou <i>et al.</i>, 1995 • Mehrrens <i>et al.</i>, 2001 • Poon and Swatman, 1999a; 1996b • Quayle, 2003 (not considered necessary – low on the list of priorities) • Rogers, 1995
<p><i>e-business doesn't fit the way they feel their customers work</i></p> <ul style="list-style-type: none"> • Abell and Limm, 1996 • Bakos and Brynjolfsson, 2000 • Caldiera and Ward, 2001; 2002 • Coombs <i>et al.</i>, 1987 • Cragg and King, 1993 • Dixon <i>et al.</i>, 2002 • Kirby and Turner, 1993 • Kulmala <i>et al.</i>, 2002 • Rogers, 1995 • Yap <i>et al.</i>, 1992 • Yap and Thong, 1997
<p><i>Lack of trading power</i></p>

Barriers to e-Business Adoption by SMEs

- Auger and Gallagher, 1997
- Barry and Milner, 2002
- Hill and Stewart, 2000
- Roberts and Wood, 2002

Chaotic organisational structure

- Benjamin and Levinson, 1993 (when strategy and process levels don't work in tandem with IS level)
- Chau and Pederson, 2000
- Chappell and Feindt, 1999
- Iacovou *et al.*, 1995 (organisational readiness)
- Kirby and Turner, 1993
- Levy *et al.*, 2001a
- Levy and Powell, 2000; 2002
- Nilsson *et al.*, 1999 (conflicting organisational, environmental and innovation factors)
- Poon and Swatman, 1996a; 1996b
- Van Doren *et al.*, 2000 (incorporates strategy and process development)
- Zimmerman and Mathiesen, 1998 (can result in a failure to handle logistics and monetary transactions)

Doesn't see the advantage of using e-business

- Bunker and MacGregor, 2000
- Chau and Hui, 2001
- Chau and Pederson, 2000 (due to previous complications in implementing change)
- Cheney *et al.*, 1986
- Cobbenhagen and Nauwelaers, 1999
- Davenport, 1992
- Dixon *et al.*, 2002
- Ein-Dor and Segev, 1978
- Giaglis *et al.*, 1998
- Harrison, 1994
- Hill and Stewart, 2000
- Iacovou *et al.*, 1995 (if owner/managers do not perceive technology in a positive way and do not understand potential benefits, they are reluctant to adopt technology)
- Jeffcoate *et al.*, 2000; 2002
- Kirby and Turner, 1993 (if owner/managers do not perceive technology in a positive way and do not understand potential benefits, they are reluctant to adopt technology)
- Lee, 2001
- Lee and Runge, 2001
- Lefebvre and Lefebvre, 1993
- Lefebvre *et al.*, 1999
- Levy *et al.*, 2001b (doesn't see how it can facilitate competitiveness)
- Pitt *et al.*, 1999
- Pollard and Hayne, 1998
- Poon and Swatman, 1996b; 1997b; 1997c
- Porter, 2001 (e-business presents challenges to traditional strategic thinking and management)
- Purao and Campbell, 1998

Barriers to e-Business Adoption by SMEs

- Raymond, 1990b; 1992; 2001
- Rothwell, 1991
- Runge and Earl, 1988
- Sathye and Beal, 2001
- Stauber, 2000
- Tetteh and Burn, 2001
- Westhead and Storey, 1996
- Yap and Thong, 1997

Lack of professional expertise

- Chau and Pederson, 2000
- Dixon *et al.*, 2002
- Harrison, 1994
- Poon and Swatman, 1996b (apprehensive about technology)
- Quayle, 2002a; 2002b; 2003
- Thong *et al.*, 1993
- Welch and White, 1981

Lack of technical know-how / skills

- Auger and Gallagher, 1997
- Barry and Milner, 2002
- Berg and Karttunen, 1998
- Chau and Pederson, 2000
- Dixon *et al.*, 2002
- Farhoomand *et al.*, 2000
- Iacovou *et al.*, 1995
- Mirchandani and Motwani, 2001
- Poon and Swatman, 1996b; 1997a; 1997b (lack of cost-effective e-business enabled software / lack of technical skills)
- Purao and Campbell, 1998
- Roberts and Berry, 1985
- Roberts and Wood, 2002
- Tidd *et al.*, 1997
- Zimmerman and Mathiesen, 1998
- Yap and Thong, 1997

Fear of security risks

- Aldridge *et al.*, 1997
- Dixon *et al.*, 2002
- Oxley and Yeung, 2001
- Purao and Campbell, 1998
- Quayle, 2002a; 2002b

Cost too high / lack of resources

- Auger and Gallagher, 1997

Barriers to e-Business Adoption by SMEs
<ul style="list-style-type: none"> • Barry and Milner, 2002 • Chappell and Feindt, 1999 • Chau and Pederson, 2000 • Dandridge, 1979 • DeLone, 1981; 1988 • DFAT, 1999 • Dixon <i>et al.</i>, 2002 • Drucker, 1998; 1999a; 1999b • Eden <i>et al.</i>, 1997 • Geroski, 1995 • Golden and Griffin, 1999; 2000 • Howard, 1977 • Iacovou <i>et al.</i>, 1995 • Owens and Beynon-Davies, 2001 • Porter, 2001 • Poon and Swatman, 1996b • Purao and Campbell, 1998 • Quayle, 2002a; 2002b; 2003 • Ratnasingam, 2000 • Roberts and Wood, 2002 • SETEL, 2002 • Thong, 1999 • Tidd <i>et al.</i>, 1997 • Welch and White, 1981
<p><i>Unsure as to what to choose</i></p> <ul style="list-style-type: none"> • Farhoomand <i>et al.</i>, 2000 • Purao and Campbell, 1998
<p><i>Lack of role models</i></p> <ul style="list-style-type: none"> • Clarke, 2000 • Drew, 2002 • Engsbo <i>et al.</i>, 2001 • Kotha <i>et al.</i>, 2001 • Porter, 2001
<p><i>Owner/manager characteristics</i></p> <ul style="list-style-type: none"> • Harrison, 1994 (positively affected by an assertive and rational decision-maker) • Iacovou <i>et al.</i>, 1995 • Kirby and Turner, 1993 (affected drastically by whether or not they understand the technology) • Tidd <i>et al.</i>, 1997 • Yap and Thong, 1997 (whether or not they understand the technology)
<p><i>Firm characteristics</i></p>

Barriers to e-Business Adoption by SMEs
<ul style="list-style-type: none"> • Iacovou <i>et al.</i>, 1995 (affected by organisational readiness) • Kirby and Turner, 1993 (affected by pressure from customer/supplier/industry sector) • Nilsson, 1999 (organisational, environmental and innovation factors) • Yap and Thong, 1997 (affected by whether or not there is external pressure to adopt IT)
<p><i>Failure to develop marketing strategies</i></p> <ul style="list-style-type: none"> • Bunker and MacGregor, 2000 • Giaglis <i>et al.</i>, 1998 • Jeffcoate <i>et al.</i>, 2002 • MacGregor <i>et al.</i>, 1998 • Pollard and Hayne, 1998 • Quayle, 2002a; 2002b; 2003

Table A.5 – Barriers to e-Business Adoption by SMEs

Appendix F

The Disadvantages of e-Business Adoption and Implementation

The Disadvantages of e-Business Adoption and Implementation
<p><i>Deterioration of relations with business partners / customers</i></p> <ul style="list-style-type: none"> • Blattberg and Deighton, 1991 • Kalakota and Robinson, 1999 • Lawrence, 1997 • Lee, 2001 • Levy <i>et al.</i>, 2001a; 2001b • Peppers and Rogers, 1997 • Poon and Swatman, 1997b; 1997c • Porter, 2001 (e-business presents challenges to traditional strategic thinking and management) • Puhakainen and Brännback, 1998 • Raymond, 2001 • Stauber, 2000 • Tetteh and Burn, 2001 • Webster, 1995
<p><i>Higher costs than anticipated</i></p> <ul style="list-style-type: none"> • Lee, 2001 • MacGregor <i>et al.</i>, 1998 • Murphy, 1996 • Porter, 2001 • Ritchie <i>et al.</i>, 1999 • Sparkes and Thomas, 2001 • Stauber, 2000
<p><i>Ongoing computer maintenance</i></p> <ul style="list-style-type: none"> • Berg and Karttunen, 1998 (outsourcing becomes a solution, yet many suppliers don't want to work with SMEs) • MacGregor <i>et al.</i>, 1998; 2004
<p><i>Doubling of work</i></p> <ul style="list-style-type: none"> • MacGregor <i>et al.</i>, 1998; 2004

The Disadvantages of e-Business Adoption and Implementation
<ul style="list-style-type: none"> • Sriram and Bannerjee, 1994 • St Pierre <i>et al.</i>, 1999
<p><i>Reduced flexibility of work</i></p> <ul style="list-style-type: none"> • Lawrence, 1997 • Lee, 2001 • MacGregor <i>et al.</i>, 1998; 2004 • Tetteh and Burn, 2000; 2001 (if haven't developed a strategy) • Zimmerman and Mathiesen, 1998 (can result in a failure to handle logistics and monetary transactions)
<p><i>Security issues</i></p> <ul style="list-style-type: none"> • Ritchie and Brindley, 2000 • MacGregor <i>et al.</i>, 2004
<p><i>Subsequent dependence on e-business</i></p> <ul style="list-style-type: none"> • MacGregor <i>et al.</i>, 1998 • Sparkes and Thomas, 2001
<p><i>Decline in contact with customers</i></p> <ul style="list-style-type: none"> • Blattberg and Deighton, 1991 • Brännback and Puhakainen, 1998a; 1998b • Kalakota and Robinson, 1999 • Peppers and Rogers, 1997 • Raymond, 2001 • Shapiro and Varian, 1999 • Stauber, 2000
<p><i>Unreliable strategic partners</i></p> <ul style="list-style-type: none"> • Blattberg and Deighton, 1991 • Brännback and Puhakainen, 1998a; 1998b • Kalakota and Robinson, 1999 • Peppers and Rogers, 1997 • Raymond, 2001 • Shapiro and Varian, 1999 • Stauber, 2000
<p><i>Exposes the business to external risks</i></p> <ul style="list-style-type: none"> • Auger and Gallagher, 1997 • Lawrence, 1997 (e-business and decisions concerning adoption often forced on SMEs by

The Disadvantages of e-Business Adoption and Implementation
<p>larger trading partners)</p> <ul style="list-style-type: none"> • Lee, 2001 • MacGregor <i>et al.</i>, 1998; 2004 • Porter, 2001 • Raymond, 2001 • Ritchie and Brindley, 2000 • Tetteh and Burn, 2001
<p><i>Lack of effective strategic planning leading to unrealised hopes / unpredictable outcomes / revision of strategies</i></p> <ul style="list-style-type: none"> • Bunker and MacGregor, 2000 • Evans and Wurster, 2000 • Giaglis <i>et al.</i>, 1998 • Jeffcoate <i>et al.</i>, 2002 • Kalakota and Robinson, 1999 • Pollard and Hayne, 1998
<p><i>Difficulties in changing the mindset and habits of the organisation</i></p> <ul style="list-style-type: none"> • Lee, 2001 • MacGregor <i>et al.</i>, 2004
<p><i>Marginal short-term benefits</i></p> <ul style="list-style-type: none"> • Abell and Limm, 1996 • Martin and Matlay, 2001 • Poon and Swatman, 1997b; 1998b; 1999a • Trappey and Trappey, 2001 • Vrazalic <i>et al.</i>, 2002

Table A.6 – The Disadvantages of e-Business Adoption and Implementation

Appendix G

Collected Datasets – A Classification of the Case Organisation Documents

Document Name	Case Organisations	Description	Role Played in the Research
Organisation Charts	<ul style="list-style-type: none"> • Design Bridge • Foyles • G-FX • Toast 	Past and present organisation charts.	<ul style="list-style-type: none"> • Described the case organisations and their business adaptations.
Mission Statement	<ul style="list-style-type: none"> • Davis & Co. • Design Bridge • G-FX • Toast 	The official corporate purpose documents.	<ul style="list-style-type: none"> • Comprised the case organisations' official vision. • Provided insights about the case organisations' intended directions.
Organisation Report	<ul style="list-style-type: none"> • All 	Detailed description of the case organisations.	<ul style="list-style-type: none"> • Provided historical and other aspects of the case organisations.
Skills Report	<ul style="list-style-type: none"> • Davis & Co. • Foyles • G-FX • Toast 	Detailed description of the existing in-house skills.	<ul style="list-style-type: none"> • Skills are routine knowledge assets.
Strategies Report	<ul style="list-style-type: none"> • Foyles • G-FX • Toast 	Description of know-how in the form of strategies.	<ul style="list-style-type: none"> • Strategies are systemic knowledge assets.
Work Measurements Report	<ul style="list-style-type: none"> • Berkeley Square Gallery • Design Bridge • Foyles • G-FX • Toast 	Detailed description of the activities of personnel, interpreted into performance indicators.	<ul style="list-style-type: none"> • Developed a fundamental understanding of the activities and social interaction of employees.
Training Review	<ul style="list-style-type: none"> • Berkeley Square Gallery • Design Bridge • Foyles 	Description of training techniques.	<ul style="list-style-type: none"> • Explained aspects of the creation of experiential and routine knowledge assets.
Existing Job	<ul style="list-style-type: none"> • All 	Descriptions of the	<ul style="list-style-type: none"> • Facilitated the

Document Name	Case Organisations	Description	Role Played in the Research
Descriptions Report		duties and responsibilities of each hierarchical level.	understanding of the roles and the interactions of the case organisation principals.
Computerised Management System Audit Report	<ul style="list-style-type: none"> • Foyle's • G-FX • Design Bridge 	Detailed description of the condition and use of a basic ICT application within the organisation.	<ul style="list-style-type: none"> • The Computerised Management System is an important systemic knowledge asset.
Audit Report	<ul style="list-style-type: none"> • All 	Identifies a number of issues that potentially could improve.	<ul style="list-style-type: none"> • Contributed to the development of an understanding of each of the case organisations.
Official Management Announcements	<ul style="list-style-type: none"> • All 	A series of announcements about a variety of organisational issues.	<ul style="list-style-type: none"> • Contributed to the development of an understanding about the knowledge vision and the emergent or deliberate relevant management interventions.
Personal Project Diary	<ul style="list-style-type: none"> • All 	<p>The researcher created a 270-page diary during the fieldwork period with observations of organisational and project events, general information about the organisational environment.</p> <p>The diary also contains informal discussions and details opinions of the researcher, the case organisation principals and the case organisation employees.</p>	<ul style="list-style-type: none"> • Provided a crucial source of information, which enabled the integration of various sources into coherent case descriptions during the analysis stage.
Historical Data	<ul style="list-style-type: none"> • All 	Gathered from a number of sources, such as the official corporate web site, anniversary publications, etc.	<ul style="list-style-type: none"> • Increased the researcher's understanding about the case organisations.
Material from presentations	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • Design Bridge • Foyles • G-FX 	Material provided mainly in the form of PowerPoint presentations.	<ul style="list-style-type: none"> • Played a supportive role in cross-checking information.

Document Name	Case Organisations	Description	Role Played in the Research
	<ul style="list-style-type: none"> • Lobster • Toast 		
Other Internal Documents	<ul style="list-style-type: none"> • All 	A number of internally produced documents (such as Performance Indicators Documents, brochures, advertising, PR releases).	<ul style="list-style-type: none"> • Played a supportive role in cross-checking information.
Other External Documents	<ul style="list-style-type: none"> • All 	A number of externally produced documents, such as press reports.	<ul style="list-style-type: none"> • Played a supportive role in cross-checking information.
Personnel Records	<ul style="list-style-type: none"> • All 	Electronic Staff Database	<ul style="list-style-type: none"> • Extracted information about the background and educational level of the case organisation principals and their employees.
Work Records	<ul style="list-style-type: none"> • All 	Work Archive	<ul style="list-style-type: none"> • Provided important systemic knowledge assets. • Contributed to the development of an understanding about the synthesis of information flows and the quality of created and utilised knowledge from everyday activities.
Progress Reports	<ul style="list-style-type: none"> • Davis & Co. • Design Bridge • Foyles • G-FX • Toast 	Weekly and monthly progress reports	<ul style="list-style-type: none"> • Contained top management decisions about the case organisations, as well as both qualitative and quantitative information about aspects of the case organisations.
Case Organisations' Internal Emails	<ul style="list-style-type: none"> • All 	An archive of each organisation's emails	<ul style="list-style-type: none"> • Played a supportive role in cross checking information since it enables the recreation of actual events.
Financial Records	<ul style="list-style-type: none"> • All 	Annual reports and annual accounts	<ul style="list-style-type: none"> • Provided an additional dataset to assist cross-checking.

Table A.7 – Collected Datasets – Case Organisations

Appendix H

Fieldwork Appointment Diary

Data collection for the study included “reflective dialogues” with the principal from each case organisation. Lasting for an average of three hours each, these “reflective dialogues” were documented by the researcher and then read and approved by the case organisation principals. The researcher also studied plans, decision reports, and e-mail correspondence related to the case organisations, minutes of meetings, consultants’ reports and documents from each organisation, and their websites. This constituted the formal data collection process. However, the researcher acquired a familiarity with the case organisations that went beyond participant observation or the temporary engagement generated by Action Research. This deep engagement with the research situation was recorded in a personal log – or diary – for the duration of the fieldwork period.

Table A.8 illustrates the questionnaire interviewees.

Name	Role	Organisation
Peter Osborne	Owner/Director	Berkeley Square Gallery
Christopher Davis	Founder/Director	Davis & Co.
William Goodenough	Group Executive Chairman	Design Bridge
Christopher Foyle	Part owner/Director	Foyles
Demetrios Zoppos	Managing Director	G-FX
Alex Fitzgibbons	Founder/Director	Lobster
Jessica Seaton	Founder/CEO	Toast

Table A.8 - Table of Interviewees

Abridged Fieldwork Appointment Diary		
Date	Event	Case Organisation
19/10/2000	Pilot study interview ²³⁸	Berkeley Square Gallery
20/11/2000	Initial interview	Lobster
13/3/2001	Review of pilot study transcript	Berkeley Square Gallery

²³⁸ The researcher was employed by Berkeley Square Gallery from August 1996 – October 1999 as IT & Design Director. She was responsible for presentations, for the design, preparation and layout of all catalogues, for writing and editing texts for publications, publicity, and documentary material within exhibitions. She was also responsible for the design, programming, and maintenance of the gallery’s website, and successfully oversaw the development of a digital image database interlinked with external institutions, including the Henry Moore Foundation. Her responsibilities in this regard included overseeing the administration relating to both the database development and outsource contracts, the design of dedicated software, the creation of computerised records and essential system support.

Abridged Fieldwork Appointment Diary		
Date	Event	Case Organisation
	Reflective dialogue	Berkeley Square Gallery
20/7/2001	Initial interview	Foyles
24/9/2001	Initial interview	G-FX
4/10/2001	Initial interview	Toast
7/10/2001	Reflective dialogue	Lobster
	Review of initial interview transcript	Lobster
9/10/2001	Initial interview ²³⁹	Design Bridge
22/10/2001	Day spent observing at case organisation	G-FX
	Reflective dialogue	G-FX
	Review of initial interview transcript	G-FX
30/10/2001	Day spent observing at case organisation	G-FX
1/11/2001	Day spent observing at case organisation	G-FX
23/11/2001	Reflective dialogue	Toast
	Review of initial interview transcript	Toast
6/12/2001	Initial interview	Davis & Co.
7/12/2001	Reflective dialogue	Lobster
	Review of transcript from previous reflective dialogue	Lobster
	Day spent observing at case organisation	Lobster
11/12/2001	Reflective dialogue	Berkeley Square Gallery
	Review of transcript from previous reflective dialogue	Berkeley Square Gallery
13/12/2001	Day spent observing at case organisation	Lobster
14/12/2001	Day spent observing at case organisation	Lobster
12/2/2002	Reflective dialogue	Foyles
	Review of transcript from initial interview	Foyles
2/3/2002	Day spent observing at case organisation	Berkeley Square Gallery
9/3/2002	Day spent observing at case organisation	Berkeley Square Gallery
16/3/2002	Day spent observing at case organisation	Berkeley Square Gallery
23/3/2002	Day spent observing at case organisation	Berkeley Square Gallery
8/4/2002	Reflective dialogue	Davis & Co.
	Review of transcript from previous reflective dialogue	Davis & Co.
9/4/2002	Reflective dialogue	G-FX
	Review of transcript from previous reflective dialogue	G-FX
2/5/2002	Reflective dialogue	G-FX
	Review of transcript from previous reflective dialogue	G-FX
9/5/2002	Reflective dialogue	Lobster
	Review of transcript from previous reflective dialogue	Lobster
16/5/2002	Reflective dialogue	Design Bridge
	Review of transcript from initial interview	Design Bridge
18/5/2002	Reflective dialogue	Toast
	Review of transcript from previous reflective	Toast

²³⁹ The researcher was employed by Design Bridge from June – September 2001 as a Senior Designer on an independent contractor basis in the Digital Media division. During this time, she was solely responsible for the redevelopment of the company's website, and developed from concept to completion stage a number of client websites and presentations.

Abridged Fieldwork Appointment Diary		
Date	Event	Case Organisation
	dialogue	
23/5/2002	Day spent observing at case organisation	Toast
24/5/2002	Day spent observing at case organisation	Toast
24/6/2002	Reflective dialogue	Berkeley Square Gallery
	Review of transcript from previous reflective dialogue	Berkeley Square Gallery
	Day spent observing at case organisation	Davis & Co.
25/6/2002	Day spent observing at case organisation	Davis & Co.
26/6/2002	Review of transcript from previous reflective dialogue	Berkeley Square Gallery
	Review of transcript from previous reflective dialogue	Davis & Co.
	Day spent observing at case organisation	Davis & Co.
28/6/2002	Day spent observing at case organisation	Davis & Co.
29/7/2002	Reflective dialogue	Foyles
	Review of transcript from previous reflective dialogue	Foyles
1/8/2002	Reflective dialogue	Lobster
	Review of transcript from previous reflective dialogue	Lobster
6/8/2002	Day spent observing at case organisation	Foyles
7/8/2002	Day spent observing at case organisation	Foyles
8/8/2002	Day spent observing at case organisation	Foyles
9/8/2002	Day spent observing at case organisation	Foyles
12/9/2002	Reflective dialogue	Davis & Co.
	Review of transcript from previous reflective dialogue	Davis & Co.
9/11/2002	Reflective dialogue	Toast
	Review of transcript from previous reflective dialogue	Toast
	Questionnaire regarding workshops/incentives	Toast
15/11/2002	Reflective dialogue	Design Bridge
	Review of transcript from previous interview	Design Bridge
20/11/2002	Reflective dialogue	Foyles
	Review of transcript from previous reflective dialogue	Foyles
	Questionnaire regarding workshops/incentives	Foyles
	Reflective dialogue	Lobster
	Review of transcript from previous reflective dialogue	Lobster
	Questionnaire regarding workshops/incentives	Lobster
21/11/2002	Reflective dialogue	G-FX
	Review of transcript from previous reflective dialogue	G-FX
	Questionnaire regarding workshops/incentives	G-FX
7/2/2003	Reflective dialogue	Berkeley Square Gallery
	Review of transcript from previous reflective dialogue	Berkeley Square Gallery
14/2/2003	Review of transcript from previous reflective dialogue	Berkeley Square Gallery
	Questionnaire regarding workshops/incentives	Berkeley Square Gallery

Abridged Fieldwork Appointment Diary		
Date	Event	Case Organisation
	Reflective dialogue	Davis & Co.
	Review of transcript from previous reflective dialogue	Davis & Co.
	Questionnaire regarding workshops/incentives	Davis & Co.
17/2/2003	Reflective dialogue	Design Bridge
	Review of transcript from previous reflective dialogue	Design Bridge
	Questionnaire regarding workshops/incentives	Design Bridge

Table A.9 – Fieldwork Appointment Diary

Appendix I

Incentivisation/Workshop Questionnaire

A second questionnaire was prepared as the completion point for the “reflective dialogues” with the principals of the case study organisations. The goal of this questionnaire was to identify whether, and if so to what extent, the case organisation principals would/could be encouraged to donate their time and resources to participate with the policy makers who want to serve them, in order that more visible, appropriate and accessible policy initiatives are generated for their benefit. These questions explored with the case organisation principals addressed:

- To what extent they had become more aware of UK and EU policy initiatives as a result of participating in this research.
- How policy initiatives could better affect the adoption and implementation of e-business by SMEs.
- What they thought of the proposed workshops.
- What would incentivise them to participate in such a dialogue with policy makers.

Table A.10 illustrates the questionnaire interviewees.

Name	Role	Organisation
Peter Osborne	Owner/Director	Berkeley Square Gallery
Christopher Davis	Founder/Director	Davis & Co.
William Goodenough	Group Executive Chairman	Design Bridge
Christopher Foyle	Part owner/Director	Foyles
Demetrios Zoppos	Managing Director	G-FX
Alex Fitzgibbons	Founder/Director	Lobster
Jessica Seaton	Founder/CEO	Toast

Table A.10 - Table of Interviewees

1. Questions asked of the Case organisation principals

- 1.1 Have you become more aware of EU and UK policy initiatives during the course of participating in this research project?
- 1.2 Through what means are you/have you become more aware of these policy initiatives?
- 1.3 How relevant, accessible and coherent do you consider these policy initiatives to be to you/your industry?

- 1.4 In your opinion, have these policy initiatives become more or less relevant, accessible and coherent to your organisation/industry since you became aware of them?
- 1.5 What factor(s) do you think these policy initiatives will play in your organisation's adoption and/or implementation of future e-business initiatives?
- 1.6 What policy initiatives would have better facilitated your company's adoption and implementation of e-business?
- 1.7 Through what means could these policy initiatives have been more effectively communicated?
- 1.8 What policy initiatives would more effectively facilitate your organisation's anticipated future e-business operations?
- 1.9 What would you think of a scheme in which funds from a part of one such initiative was to be redirected for the purpose of conducting either a workshop or series of workshops, from which more in-depth information could be gathered directly from a number of SME owner/managers?²⁴⁰
- 1.10 Do you think that such a workshop/series of workshops would place SME owner/managers in an arena where they will likely be able to discuss the issues that concern them in a much more detailed and participative manner than has previously been possible?
- 1.11 As a result of the information that comes to light from these discussions, do you think that policy makers would likely be better informed, and therefore better equipped, to meet the needs of SMEs than they currently are?
- 1.12 What would incentivise you to participate in such a workshop/series of workshops?
- 1.13 What do you think would incentivise other SME owner/managers to participate in such a workshop/series of workshops?
- 1.14 Do you think that SME owner/managers, if they were made aware that, by participating in such a workshop, their views would reach governments and would have a direct effect on policy relating to entrepreneurs and SMEs, they would be incentivised to participate?
- 1.15 Do you think that evening and/or weekend workshops should be offered for those who are unable to attend them during traditional business hours?
- 1.16 Do you think that the invitations to the workshop should be accompanied by letters from the SBS and DTI setting out the importance of participation?
- 1.17 What would you think of inviting (say) 1 in 100 SME representatives to contribute to a relevant workshop/discussion by incentivising the SME owner/managers to attend in return for a small payment for the day and the prospect of winning a prize (of, say, £50,000)?
- 1.18 Do you have any alternative suggestions?
- 1.19 Do you have any further comments?

²⁴⁰ For example, the total cost of UK government services to SMEs is estimated to be approximately £8bn annually (HM Treasury, 2001c; SBS, 2004). About £2.5bn of this is spent on DTI and SBS expenditure, providing business support schemes that reach only between 8-12% of SMEs (HM Treasury, 2001c; SBS, 2002b). In the EU, SME budgets include 450 million euros (£280 million) for the project *Specific Research Activities for SMEs* in the Eighth Priority alone.

Appendix J

Strategy

From a systems point of view, change is an enormously complex process. A key to managing change is keeping in mind the interdependent relationship of the parts of the whole process (Huse, 1980). Risk doesn't have to be an inevitable cost of innovation adoption and implementation if a balance between partitioning and integration, and performance and growth, is achieved while remaining accountable to the core business by undertaking strategic planning (Avison *et al.*, 1994; Tidd *et al.*, 1997; Dardis, 1998; National Research Council, 2000; Smallbone *et al.*, 2000; Day *et al.*, 2001; Plotkin, 2002).

Many researchers assert that strategic organisation and management attributes should be installed in order to ensure the success of the innovation of adopting and implementing e-business. As virtually all companies use the internet to some extent, it therefore weakens industries' profitability and erodes proprietary advantages as rivals compete on price alone. The internet is a tool that can either support or damage an organisation's strategic positioning – the key is for organisations to integrate online initiatives into their overall strategy and operations so that they can complement, not cannibalise, established competitive approaches, in order to create systemic benefits that their competitors can't copy. Integrating online initiatives can enhance an organisation's ability to develop products, content, processes and strong personal service – all of which creates value, which lies at the core of competitive advantage (Barney, 1991; Bloch *et al.*, 1996).

Strategy can be developed to address these concerns in hypercompetitive markets where the speed of change makes traditional forms of analysis impractical (Mintzberg and Quinn, 1998; Eisenhardt, 1998). Competitive advantage has typically been derived from the basic forces of competition (such as rivalry, entry barriers for new competitors, the threat of substitute offerings, and the bargaining power of suppliers, channels and buyers). The internet is an open technological system that intensifies competitive rivalry and reduces entry barriers, dramatically increasing available information, and shifting the

bargaining power to buyers. Sustainable competitive advantage comes from operational effectiveness or strategic positioning. e-Business enables competitors to emulate operational effectiveness, the importance of strategic positioning increases. Successful strategy formation integrates an organisation's business strategy, IS development and management of organisational change. In many organisations, however, the integration is "tenuous, at best" (Galliers, 1993d: 95; 1995b: 51).²⁴¹

Managerial support and a sense of strategic direction are fundamental to ensuring e-business success for SMEs (Lambert and Peppard, 1999; De Berranger *et al.*, 2001; Dixon *et al.*, 2002). The literature of SME ICT adoption shows that SMEs are typically reactive rather than proactive, usually doing just enough to meet their customers' requirements (Chen and Williams, 1998). Those SMEs that understand the relevance of e-business in relation to their operations, and employ strategies in order to harness the opportunities and to avoid the potential pitfalls, are more likely to successfully adopt and implement e-business (King and Zmud, 1981; Giaglis *et al.*, 1998; Pollard and Hayne, 1998; Galliers, 1993d; 1995b; MacGregor *et al.*, 1998; Bunker and MacGregor, 2000; Tetteh and Burn, 2001; Hirakubo and Friedman, 2002; Shah and Dawson, 2002; Jeffcoate *et al.*, 2002). Most SMEs, however, do not conduct any strategic market planning prior to adopting e-business, because they do not recognise and/or understand the need to do so (Giaglis *et al.*, 1998; Pollard and Hayne, 1988; Galliers, 1993a; 1993b; 1993c; Mintzberg, 1994; Bunker and MacGregor, 2000; Tetteh and Burn, 2001; Lee, 2001; Barrenechea, 2001; Jeffcoate *et al.*, 2002; Golden *et al.*, 2003; Cosh and Hughes, 2003).

The context in which actions and decisions take place, and the manner in which information is to be interpreted, should be taken into account. SSM is, according to Galliers (1995b: 61), "a good candidate for this," as it stresses the importance of a shared

²⁴¹ The integration process could be improved if:

- Key stakeholders are committed to - and participate in - the strategy formation and implementation.
- The process of strategy formation, implementation and review is integrated into management activities.
- There is a senior management "champion" to promote this process.
- There is collaboration based on mutual respect and trust between the IS and business personnel.
- The IS function is integrated into the organisation as a whole.
- The attention paid to business systems strategy formulation is also given to IS development.
- The IS development process incorporates business process redesign.
- The strategy takes account of business and organisational change (Galliers, 1995b: 51).

understanding of complex situations about which there may be various opinions, and their ability to clarify the required activities. Considering the possible outcomes, or “scenarios” when managing change enables the identification of appropriate alternative strategies, on which appropriate “root definitions” can be based. These scenarios can be developed by considering those aspects of the given situation that can be expected to remain constant, and those that are not. In this way, a number of scenarios and resultant strategies can be devised. A counter-intuitive scenario might also be included, in order to provide options in an unexpected situation (Dykman, 2004). Alternatives can be identified and incorporated into the scenarios, enabling a shared understanding to emerge. This emphasis on scenarios ensures that there is no reliance on a single “taken-for-granted” view, which is likely to lead to an inability to cope with change. In this way, the “views of all concerned are brought to light, and are able to be addressed (Galliers, 1995b: 66). Systems activity models can then be built for each scenario identified. These scenarios, or “futures,” are represented by F1, F2 and F3 in Figure 3.7.

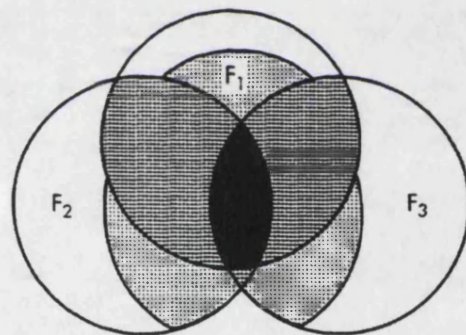


Figure A.1 – Required Information Associated with Alternative “Futures” (Galliers, 1995b: 68)

The information represented by the area shaded black is required no matter what potential “future” emerges. Provision should be made for the “futures” represented by the hashed areas, which appear to be required in two out of the three potential “futures” identified. Additional critical information associated with a single “future” can also be collected. In this way, flexible IS strategies can be developed that are capable of adapting to changing business circumstances. Ongoing reassessment can occur, in order that a

flexible information architecture can be maintained and necessary changes to the organisation structure and processes can be identified (Galliers, 1995b: 69).

An alternative view is espoused by Ciborra (1994), who uses *bricolage* to describe the way that Strategic Information Systems (SIS) can be built in order to maintain successful competitive advantage over a longer period of time than standard SIS. Ciborra believed that tinkering, not conscious alignment, is behind many successfully aligned IT applications: whilst strategic planning may be advocated, circumstances compel managers to improvise (Ciborra, 1999). By valuing tinkering and by allowing SIS to evolve from the bottom-up, rather than implementing it from the top-down, Ciborra claimed that an organisation may end up with something that is deeply rooted in its organisational culture, that is specific to it, and that is not easily imitated – “synchronicity.”

Ciborra (1994) believed that management models are mostly sterile abstractions from the rich messiness of the “real” world, with idealised representations in terms of geometrical diagrams with arrows and boxes depicting key business variables attempting to force impossible or misunderstood ideals upon a recalcitrant reality. In the meantime, in the “real” world, with its turbulent and unpredictable circumstances, managers muddle through, betting and tinkering. The use of IT/SIS itself is characterised by circumstances compelling organisational actors at all levels to improvise frequent adaptations and reinventions of an initial system. Opportunistic adjustments must be carried out on the spur of the moment, as technology “drifts.” Surprise usually results over failures of implementation, which tend to be treated as exceptions to the rule when attempting to force reality into idealised models, when daily work, intuition and empathy could instead be relied upon. By reflecting upon observations, Ciborra asserted that technology be accorded a high degree of autonomy, as it is a historically and socially constructed set of beliefs about cause-effect relationships, about how an organisation reacts and evolves by improvisations. The attention would then no longer be centred on the neat world of scientific models, but rather on the match to be achieved between the new systems and the unfolding work situation.

Technology “drifting” is often the result of processes such as sabotage, passive resistance, learning-by-doing, radical shifts in conditions or serendipity (Ciborra, 2000; 2002).

Ciborra (2002) claimed that “an insight into the drifting of technology needs to recombine, on a different basis, the theory and practice of systems development and use.” This process of accommodation and resistance is not only limited to technology, but also to social structures, such as norms governing organisational conduct and hierarchical status, and the knowledge about the methods and procedures also shape the actions of designers and users of technology (eg. a strong hierarchical culture may prevent executive users from interacting directly with the designers of technology). By drawing on the social structures such as power relations and cultural norms in their actions, individuals may also enact the structures that shape their action and interaction with technology (Giddens, 1984). Thus, individuals’ action in response to hierarchical norms helps to sustain the hierarchical structure.

Having examined the IS, ICT, innovation and e-business literatures to identify the factors that compel organisations to adopt and implement e-business (a core contribution of this thesis, as these canons are typically treated as separate), and identifying the benefits of e-business adoption and implementation, as well as the necessary strategic planning, the next section of the chapter outlines the situation of e-business adoption and implementation in the UK by SMEs.

Appendix K

EU Policy Initiatives and Programmes Aimed at Stimulating Innovation and/or the SME Sector

Year	EU Initiatives	About
1980s-1990s	<i>Esprit</i> Programme	<ul style="list-style-type: none"> In the 1980s and early 1990s the <i>Esprit</i> programme followed a technology-push policy aimed at strengthening the growing IT industry.
1993	<i>White Paper on Growth, Competitiveness and Employment</i>	<ul style="list-style-type: none"> Formulated to tackle unemployment. Focused on technology as a growth industry.
1994	<i>Regional Technology Plan (RTP)</i>	<ul style="list-style-type: none"> Inspired by the <i>White Paper on Growth, Competitiveness and Employment</i>. Instrumental to the development of the <i>Green Paper on Innovation</i>.
1995	<i>Green Paper on Innovation</i>	<ul style="list-style-type: none"> Inspired by the <i>Regional Technology Plan</i>. Created to develop an EU-wide strategy for the promotion of innovation.
1994	<i>Regional Innovation Strategy (RIS)</i>	<ul style="list-style-type: none"> Collaborated with RITTS and RTT under the umbrella of FP5. Established a strategic framework for regional innovation. Created networks to promote co-operation. Identified and prepared innovation projects. Strengthened regional research and technology adoption and implementation. Orientated new programmes to promote innovation. Built regional consensus and agreement.
	<i>Regional Innovation and Technology Transfer Infrastructures and Strategies (RITTS)</i>	<ul style="list-style-type: none"> Worked with RIS and RTT under the umbrella of FP5. Supported local and regional governments and organisations to analyse and develop an innovation and technology transfer infrastructure to meet the needs of SMEs. Built regional consensus and agreement.
	<i>Regional Technology Transfer Projects (RTT)</i>	<ul style="list-style-type: none"> Worked with RIS and RITTS under the umbrella of FP5.
1996	<i>DEEDS Forum</i>	<ul style="list-style-type: none"> Generated from the G7 Policy Group project <i>A Global Marketplace for SMEs</i> (1996-1999). Sought to provide an open forum of EU policy makers. Focused on the uptake of e-business by SMEs.
	<i>Action Plan for Innovation in Europe</i>	<ul style="list-style-type: none"> Paved the way for a common EU analytical and political framework for innovation policy.

Year	EU Initiatives	About
	<i>The Third Multiannual Programme for SMEs in the European Union</i>	<ul style="list-style-type: none"> • The cornerstone of the EU's actions aimed at improving conditions for SMEs. • Under the umbrella of FP5. • Supported European SMEs to participate in FP5 actions.
1997	COMPETE	<ul style="list-style-type: none"> • Linked with the <i>Brite-Euram</i> and <i>SMESPRIT</i> programmes. • Under the umbrella of the <i>Esprit</i> programme. • Ran from 1997-2002. • Brought together more than 45 companies delegating 70 specialists and representing over 50 EU-funded projects. • Strengthened EU SME competitiveness through technology.
	<i>Fifth Framework Programme (FP5)</i>	<ul style="list-style-type: none"> • Ran from 1998-2002. • Worked in collaboration with the <i>Innovation and SME Programme</i>. • Diffused good practices and encouraged inter-regional co-operation in innovation. • Encompassed RIS, RITTS and RTT. • Worked to enhance local innovation capabilities.
	<i>Brite-Euram</i>	<ul style="list-style-type: none"> • Linked with the <i>COMPETE</i> and <i>SMESPRIT</i> programmes. • Under the umbrella of the <i>Esprit</i> programme. • Encouraged and facilitated collaboration and joint ventures for SMEs. • Enabled groups of SMEs to commission university laboratories and/or research centres to carry out R&D activities, and to pool resources.
2000	<i>The Bologna Charter on SME Policies</i>	<ul style="list-style-type: none"> • Focused on the uptake of e-business practices by SMEs. • The first conference of EU ministers responsible specifically for SMEs. • Recognised the importance of entrepreneurship and of a "dynamic" SME sector. • Acknowledged the "vital" contribution of innovation to SME competitiveness and the central role SMEs play in national systems. • Recognised that e-business creates both opportunities and challenges for SMEs. • Recommended that full account be taken of SME perspectives in the drafting of initiatives and instruments related to e-business adoption and implementation. • The participating ministers agreed to work to foster SME partnerships and to enhance the availability of instruments that promote SME development.
	The European Council Summit, Lisbon	<ul style="list-style-type: none"> • Announced the EU's goal of becoming the "most competitive and dynamic knowledge-based economy in the world" by 2010. • Called for a series of benchmarking exercises to monitor progress by member states towards the implementation of effective innovation policies.

Year	EU Initiatives	About
		<ul style="list-style-type: none"> Resulted in the formulation of <i>The Integrated Programme for SMEs: A General Framework for all Community Actions in Favour of SMEs and Innovation in a Knowledge-Driven Economy, 2001</i>.
	<i>The Integrated Programme for SMEs: A General Framework for all Community Actions in Favour of SMEs</i>	<ul style="list-style-type: none"> Created in response to the European Council Summit, Lisbon. Has contributed to an improved coherence in technological innovation policy in the EU. Has contributed to the development of a framework for dialogue on innovation policy-making and policy co-ordination.
	Feira European Council	<ul style="list-style-type: none"> Inspired <i>eEurope 2005. An Information Society for All: An Action Plan</i>.
	<i>eEurope 2005. An information society for all: An Action Plan</i>	<ul style="list-style-type: none"> Endorsed by the Feira European Council in June 2000. Forms part of the overriding Lisbon strategy. Addresses issues relevant to internet and e-business adoption and use. Aims to improve participation, to open up opportunities, and to enhance skills.
	SMESPRIT	<ul style="list-style-type: none"> Aims to develop a knowledge-based system that will provide support to SMEs adopting and implementing ICTs. Linked with the <i>COMPETE</i> and Brite-Euram programmes. Falls under the umbrella of the <i>Esprit</i> programme.
2001	<i>Trend Chart on Innovation in Europe</i>	<ul style="list-style-type: none"> Promoted the <i>Action Plan for Innovation in Europe</i>. Introduced as a tool for policy makers. Formulated along the lines of the CIS. Updates and analyses information on innovation policies. Provides a forum for benchmarking and for the exchange of "good practices" in innovation and technological policy development.
	<i>Community Innovation Survey (CIS)</i>	<ul style="list-style-type: none"> Jointly implemented by Eurostat and DG Enterprise under the aegis of the EIMS.
	<i>Innovation and SME Programme</i>	<ul style="list-style-type: none"> Promotes innovation and supports SME participation in FP5.
	<i>Innovation in a knowledge-driven economy, 2001</i>	<ul style="list-style-type: none"> Created in response to the European Council Summit, Lisbon. Contributes to an improved coherence in technological innovation policy in Europe. Contributes to the development of a framework for dialogue on innovation policy-making and policy co-ordination.
2002	<i>Go Digital</i>	<ul style="list-style-type: none"> Administered by the EBPG. A collaboration between the EU member states and the European Commission services. Aims to benchmark policies and instruments in order to promote e-business for SMEs.
2003	<i>The Sixth Framework Programme, (FP6)</i>	<ul style="list-style-type: none"> Formally launched in Brussels in November 2003.

Table A.11 – Summary of the Prominent EU Policy Initiatives and Programmes Aimed at Stimulating Innovation and/or the SME Sector

Appendix L

UK Policy Initiatives and Programmes Aimed at Stimulating Innovation and/or the SME Sector

Year	UK Initiatives	About
1997	<i>Technology Foresight</i>	<ul style="list-style-type: none"> • DTI report. • Aimed to contribute to collaboration between business and scientists in order that innovation can "flourish." • Linked with <i>Competitiveness through Partnerships with People</i>.
	<i>Competitiveness through Partnerships with People</i>	<ul style="list-style-type: none"> • Linked with <i>Technology Foresight</i>.
1998	<i>Our Competitive Future: Building the Knowledge-Driven Economy</i>	<ul style="list-style-type: none"> • DTI White Paper. • Set out the roles of government and business to improve the UK's competitiveness.
	Information Age Partnership (IAP)	<ul style="list-style-type: none"> • A key mechanism for e-business penetration. • Provides a forum for dialogue between the public and private sectors involving the UK's IT, communications, electronics and creative content industries. • Chaired by the Secretary of State for Trade and Industry. • Brings together government ministers, senior officials and the heads of UK companies from across the information, technology, electronics and communications supply chains.
1999	<i>Our Information Age: the Government's Vision</i>	<ul style="list-style-type: none"> • The UK government established its agenda and laid down targets to facilitate the UK becoming "the best place in the world" to conduct e-business.
	The Office of the e-Envoy (OoE)	<ul style="list-style-type: none"> • Sits inside the Cabinet Office. • Has an advisory input into the Treasury's financing decisions. • Sets policy, ensures the co-ordination of e-economy issues across government. • Manages selected projects that are of cross-departmental benefit.
2000	<i>Business in the Information Age International Benchmarking Study 2000,</i>	<ul style="list-style-type: none"> • DTI report.
	<i>Opportunity for All in a World of Change White Paper</i>	<ul style="list-style-type: none"> • Developed to specifically support and stimulate the SME sector. • Announced a £30 million initiative for a three year

Year	UK Initiatives	About
		period to assist businesses transform themselves through e-business usage.
	<i>e-commerce@itsbest.uk</i>	<ul style="list-style-type: none"> Produced by The Cabinet Office's Performance and Innovation Unit. Prompted the development of the three UK government reports <i>UK Online for Business</i>, <i>Technology Means Business</i>, and <i>Supply Chain</i>.
	Small Business Service (SBS)	<ul style="list-style-type: none"> Established as an executive agency of the DTL. Aims to enable SMEs to have a voice in government. Reports to the Secretary of State for Trade and Industry. Works closely with the Cabinet Office's Regulatory Impact Unit, the Better Regulation Task Force, and smallbusiness Europe.
	Small Business Council (SBC)	<ul style="list-style-type: none"> Established as an advisory Non-Departmental Public Body providing independent advice for the Chief Executive of the SBS on the needs of SMEs. Reports to the Secretary of State for Trade and Industry on the effects of government policy on small businesses. Produces recommendations in an annual report.
2001	<i>UK Online Report</i>	<ul style="list-style-type: none"> Set the target for the UK to have the most extensive and competitive broadband market in the G7 by 2005.
	<i>UK Online for Business</i>	<ul style="list-style-type: none"> Inspired by The Cabinet Office's Performance and Innovation Unit report <i>e-commerce@itsbest.uk</i>. Effectively the rebranded Information Society Initiative, which comes under the umbrella of <i>UK Online</i>, a nationwide e-business initiative that builds on existing support services. Focuses on incorporating e-business into the businesses of SMEs. Is a private-public sector initiative in which public, private and non-profit organisations promote e-business to SMEs.
	<i>Technology Means Business</i>	<ul style="list-style-type: none"> Inspired by The Cabinet Office's Performance and Innovation Unit report <i>e-commerce@itsbest.uk</i>.
	<i>Supply Chain</i>	<ul style="list-style-type: none"> Inspired by The Cabinet Office's Performance and Innovation Unit report <i>e-commerce@itsbest.uk</i>.
	<i>The Cross Cutting Review of Government Services for Small Business</i>	<ul style="list-style-type: none"> Examined the range of UK government services targeted at SMEs.
	<i>Government Gateway</i>	<ul style="list-style-type: none"> Launched to enable online access to UK government departments within a secure interface between businesses, citizens and government departments.
2002	Regional Broadband Unit	<ul style="list-style-type: none"> Established to co-ordinate the regional growth of broadband in rural UK.
2004	<i>The Government Action Plan for Small Business</i>	<ul style="list-style-type: none"> Developed by the SBS. Jointly endorsed by the Prime Minister, the Chancellor of the Exchequer, and the Secretary of State for Trade and Industry.
	<i>UK Business Advisor Barometer</i>	<ul style="list-style-type: none"> Developed by the SBS. Developed to map and analyse how government

Year	UK Initiatives	About
		expenditure on services for SMEs translates into customer experiences.
	The Social Enterprise Unit (SenU)	<ul style="list-style-type: none">• Joined the SBS in 2004.• Their shared agenda is to deliver DTI objectives.

Table A.12 – Summary of Prominent UK Policy Initiatives Aimed at Stimulating Innovation and/or the SME Sector

Appendix M

Alternative Theoretical and Methodological Approaches

A.M.1 Structuration Theory

Giddens' (1984) Structuration Theory offers an account of social life in terms of social practices developing and changing over time and space ("time-space"), that makes no attempt to directly theorise the IS domain. Rose and Scheepers (2001) believe that Structuration Theory works well in combination with the interpretive case study. However, direct attempts to influence practice (an important component of working in an applied field) have yet to be undertaken with Structuration Theory. Structuration Theory is "complex, diverse and alien" (Rose and Scheepers, 2001: 219).²⁴² There were a number of challenges for the researcher with Structuration Theory:

²⁴² The basic tenets of Structuration Theory are:

- *Agency* – Human agency is "the capacity to make a difference" or "transformative capacity" (Giddens, 1984: 14). Agency is connected with power, since the loss of the capacity to make a difference is powerlessness. In practice, human agents almost always retain some transformational capacity. Power involves the exploitation of resources. "Resources... are structured properties of social systems, drawn on and reproduced by knowledgeable agents in the course of interaction" (Giddens, 1984: 15). Resources are "of two kinds: authoritative resources, which derive from the co-ordination of the activity of human agents, and allocated resources, which stem from control of material products or aspects of the natural world" (Giddens, 1984: 15). Power is not itself a resource, and actions have intended and unintended consequences.
- *Structure* – Giddens regards structure as both constraining and enabling, and defines structure as "rules and resources recursively implicated in social reproduction: institutionalised features of social systems have structural properties in the sense that relationships are stabilised across time and space." Structure can be "conceptualised abstractly as two aspects of rules – normative elements and codes of signification (Giddens, 1984: 1). Structure "exists only as memory traces, the organic basis of human knowledgeability, and is instantiated in action" (Giddens, 1984: 377). Structure refers to "the structuring properties" that allow the "binding" of "time-space" in social systems, the properties that make it possible for discernibly similar social practices to exist across varying spans of time and space and that lend them a "systemic" form. Structure is a "virtual order" of transformative relations (ie. social systems as reproduced social practices do not have "structures," but rather exhibit "structural properties," and that structure exists as time-space presence, only in its instantiations in such practices and as memory traces orienting the conduct of knowledgeable human agents (Giddens, 1984: 17).
- *The duality of structure* – Giddens considers structure and agency as a "duality" – two concepts that are dependent upon each other and recursively related. Social structure and human interaction are

- The (comparative) inaccessibility of the theory to IS researchers and practitioners.
- The absence of specific theories to technological innovation.
- Giddens' (comparative) disinterest in practical uses of his work, which leaves no obvious path to follow.

A.M.2 Resource-Based Theory

An alternative IS theory to SSM is Resourced-Based Theory, in which to provide competitive advantage, a resource must fulfil the following four criteria:

- *Valuable* – it must grant strategic value to the firm by exploiting opportunities or neutralising threats.
- *Rare* – it must be unique or rare to find amongst the organisation's current and potential competitors.
- *Imperfect imitability* – it must not be possible to perfectly imitate or copy the resource.
- *Non-substitutability* – competitors cannot substitute it with an alternative (Barney, 1991).

The resource(s) of a given organisation must have “heterogeneity and resource immobility and satisfaction of the requirement of value, rareness, imperfect imitability, and non-substitutability” in order to be a source of sustained competitive advantage (Grover *et al.*, 1998: 84). Assessing value-added capabilities and competencies requires viewing the assets and resources of a company from a knowledge-based perspective (Connor and Prahalad, 1996; Prahalad and Hamel, 1990). Prahalad and Hamel (1990) concentrate

broken down into three dimensions (solely for the purpose of analysis) and the recursive character of these dimensions is illustrated by the linking modalities. Thus, as human actors communicate, they draw on interpretative schemes to help make sense of interactions. At the same time, these interactions reproduce and modify those interpretative schemes that are embedded in social structure as meaning or significance. Similarly, the facility to allocate resources is enacted in the wielding of power, and produces and reproduces social structures or domination, and moral codes (norms) help determine what can be sanctioned in human interaction, which produces structures of legitimation. Structuration is therefore the process whereby the duality of structure evolves and is reproduced over time-space. Agents in their actions constantly produce and reproduce and develop the social structures that both constrain and enable them. “All structural properties of social systems... are the medium and outcome of the contingently accomplished activities of situated actors. The reflexive monitoring of action in situations of co-presence is the main anchoring feature of social integration” (Giddens, 1984: 191).

attention on the collective learning processes of an organisation. Their concept of “core competencies” is related to mechanisms through which companies learn and accumulate new skills in order to develop business capabilities to out-perform their competitors. A primary objective of the theory is to assist owner/managers to appreciate why competencies can be perceived as valuable assets to improve business performance. A resource-based view of a company accepts that attributes related to past experiences, organisational culture and competences are critical for the success of the firm (Campbell and Luchs, 1997; Hamel and Prahalad, 1996). Further, Connor (1991: 140) suggests that “an in-house team is likely to produce technical knowledge, skill, or routine that fits better with the firm’s current activities.”

A.M.3 Actor Network Theory

Actor Network Theory (ANT) evolved from the work of Callon (1991) and Latour (1992). Their analysis of a set of negotiations describing the progressive constitution of a network in which both human and non-human actors assume identities according to prevailing strategies of interaction. An actor network is the act linked together with all of its influencing factors (which are also linked), thereby producing a network. Actors’ identities and qualities are defined during negotiations between representatives of human and non-human actants. In this perspective, “representation” is understood as a process of delegation. The most important of these negotiations is “translation,” a multi-faceted interaction in which actors:

- Construct common definitions and meanings.
- Define representation.
- Co-opt each other in the pursuit of (individual and collective) objectives.

In ANT, both actors and actants share the scene in the reconstruction of the network of interactions leading to the stabilisation of the system. However, the crucial difference between them is that only actors are able to put actants in circulation in the system.

ANT’s rich methodology embraces scientific realism, social constructivism, and discourse analysis in its central concept of hybrids or “quasi-objects” that are simultaneously real,

social and discursive. Developed as an analysis of scientific and technological artefacts, ANT's theoretical richness derives from its refusal to reduce explanations to either natural, social or discursive categories while recognising the significance of each (Latour 1993). Despite this richness, however, ANT was not considered by the researcher to be the most suitable approach for this all-encompassing, multi-agency research project.

A.M.4 Multiview

Multiview combines aspects of some of the major methodologies and themes into a flexible approach covering five stages of systems analysis and design (Avison and Wood-Harper, 1995).²⁴³ Multiview combines both “hard” and “soft” techniques and tools, but does not follow a rigid step-by-step description with specific techniques and tools to be used at each stage with well-defined outcomes following each (Avison and Wood-Harper, 1995: 109). Multiview examines the “whole process” of designing information systems in order to find an approach able to be responsive to changes as they arise (Avison and Wood-Harper, 1990).

Multiview was influenced by the work of Checkland and Mumford (Avison and Wood-Harper, 1995: 102; Avison and Fitzgerald, 2003: 457), and is a complete view of the process of IS development requiring that different viewpoints and the relationships between them are identified and recognised as different “solutions” will be appropriate to different organisations, and different departments of organisations, to different users and user groups. A flexible approach is therefore both appropriate and desirable.

²⁴³ The five stages of Multiview are:

- *Stage 1 – analysis of human activity systems* – involves an initial analysis of the human activity systems within which the IS is embedded. This stage involves SSM up to and including the development of conceptual models.
- *Stage 2 – information modelling* – involves more traditional IS techniques. A functional model is developed from one of the root definitions, and a dataflow diagram and entity model are produced.
- *Stage 3 – analysis of socio-technical systems* – the purpose of this stage is to bring into consideration important social objectives and values in order to generate different possible systems designs so that the participants and users will be able to control the outcome.
- *Stage 4 – design of the human-computer interface* – is concerned with the detailed design of the user interface. It is the last input into the final design of the system.
- *Stage 5 – designing technical subsystems* – the most technical stage, where the detailed specification is carried out. It is informed by both the information analysis of Stage 2 and the social and user-oriented objectives of Stages 3 and 4 (Avison and Wood-Harper, 1990).

An “exploration” in the development of IS rather than a methodology (Avison and Wood-Harper, 1990), within Multiview there is a three-way “relationship of interaction” between the analyst/user groups, the Multiview approach and the situation. This relationship is illustrated by Figure A.2.

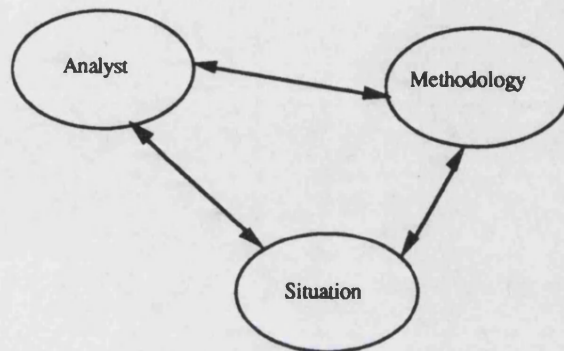


Figure A.2 – The Interaction Between the Analyst, the Problem Situation and the Methodology (Avison and Wood-Harper, 1990: 21)

The systems life cycle covers the steps that a system goes through from the time that the users decide that they have a problem to be addressed, to the point where the system is functioning. These main stages are: definition, development, and installation and operation. Multiview addresses problems associated with the analysis and design activities of IS definition by structuring the tasks of analysts and users, and evaluates potential solutions to IS processing problems through the creation of a framework, which attempts to take account of the different points of view of all stakeholders involved in using a technological system. Multiview enables them to communicate with each other about what is needed and what is proposed.

As with SSM, Multiview attempts to address the organisation as a whole, the people working in the organisation, their human-computer interactions, the function(s) that the information system is to perform, its required technical specification, and the techniques and tools chosen for the problem situation (Avison and Wood-Harper, 1990). Each stage of Multiview can be emphasised, reduced in scale, or even omitted, according to the circumstances of the problem being addressed. During the project, outputs of each stage either become inputs to the following stages or outputs of the methodology, which are: the

social systems, the role-set and people tasks, the human-computer interface and the technical specification, and the necessary inputs and outputs to support these. These include the information to design, implement, operate and maintain a more complete technical IS. These stages are shown in Figure A.3.

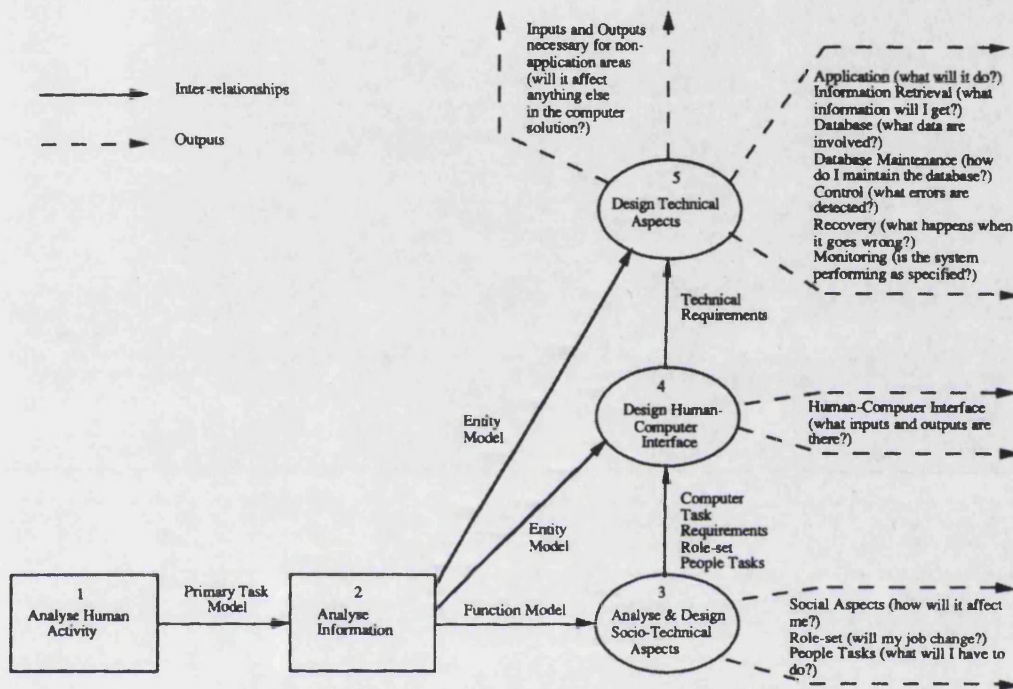


Figure A.3 – The Multiview Framework (Avison and Wood-Harper, 1990: 22)

Another representation of Multiview is shown in Figure A.4, which illustrates a widening focus on, and an increased understanding of, the problem situation and its related technical and human characteristics and needs. Working from the outside in, there is an increasing concentration of focus, an increase in structure and the progressive development of an information system.

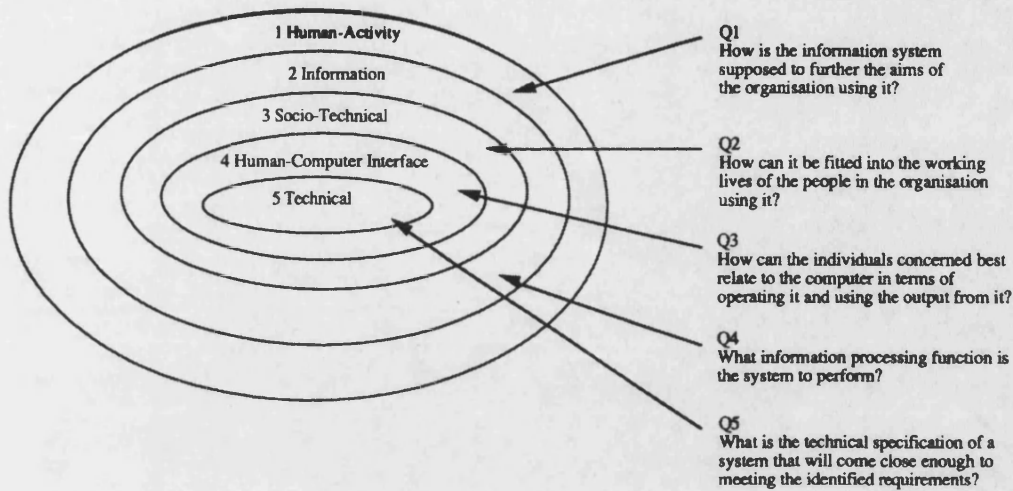


Figure A.4 – The Multiview Methodology (Avison and Wood-Harper, 1990: 24)

Research and practice are intrinsically related. Therefore, developing an information system in practice can be considered to be a research act in which the approach to ISD is interpreted. Avison and Wood-Harper (1995) considered this change as a social process with technical and cultural aspects. Its focus will vary according to the situation and the social context on which it is based – in this case, on the learning paradigm of SSM (Mumford *et al.*, 1985): the systems analyst and the user must adjust the methodology, their role in the paradigm of assumptions, and their reading of the situation. These considerations are illustrated in Figure A.5.

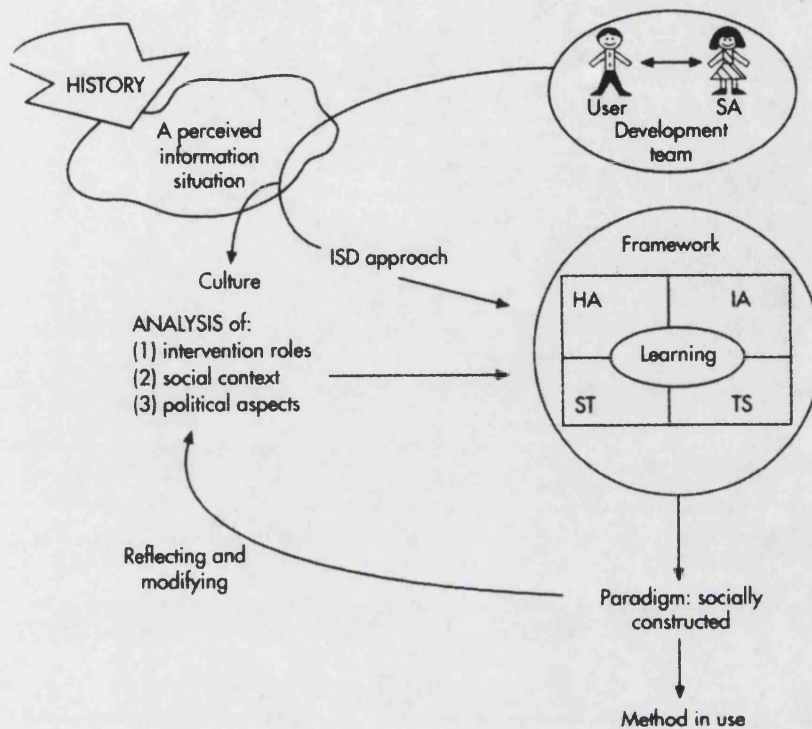


Figure A.5. An Attempt to Depict Multiview in Use in Terms of SSM Nomenclature (Avison and Wood-Harper, 1995: 115, adapted from Checkland and Scholes, 1990)

In Multiview2, the outcomes of IS development consist of three elements: organisational behaviours, work systems, and technical artefacts. These are reflected in the organisational analysis, socio-technical analysis and design, and technical design and construction. IS modelling communicates and enacts the outcomes.

Changes in the content from Multiview to Multiview2 are illustrated in Table A.13.

Part	Change	Rationale
Organisational analysis	<ul style="list-style-type: none"> • Inclusion of strategic assumption surfacing and testing (SAST, Mason and Mitroff, 1989). • Radical change and business process redesign. • Introduction of ethical analysis. • Consideration of non-human stakeholders. • Inclusion of technology foresight and future analysis. 	<ul style="list-style-type: none"> • To strengthen the conceptual analysis of SSM with real-world stakeholder analysis (Vidgen 1994). • IT as business enabler, rapid change in business environments (Wood <i>et al.</i>, 1995). • Stakeholders can have different moral ideals (Wood-Harper <i>et al.</i>, 1996). • To support a symmetrical treatment of social and technological factors (Vidgen and MacMaster, 1996). • Consider the impact of the intervention on stakeholders (Avison <i>et al.</i>, 1994, 1995) and the potential role of technology.
Information modelling	<ul style="list-style-type: none"> • Migration to Object-Oriented Analysis (from structured methods). 	<ul style="list-style-type: none"> • The principles of OOA are more compatible with systems thinking than are the process/data separation and data flow metaphor of structured methods (eg. The notion of systemic transformation and state change).
Socio-technical analysis and design	<ul style="list-style-type: none"> • Ethnographic approaches to supplement ETHICS. 	<ul style="list-style-type: none"> • Ethnographic approaches to socio-technical design (Randall <i>et al.</i>, 1994; Avison and Myers, 1995) aid the analyst in understanding how work is accomplished (Sachs, 1995).
Technical design and construction	<ul style="list-style-type: none"> • Construction of technical artefacts is incorporated within the scope of the methodology.²⁴⁴ 	<ul style="list-style-type: none"> • Prototyping, evolutionary, and rapid development approaches to system development require that analysis, design, and construction be more tightly integrated (Budde <i>et al.</i>, 1992).

Table A.13 – Changes in the Content from Multiview to Multiview2 (Avison *et al.*, 1998, from Avison and Fitzgerald, 2003: 508)

²⁴⁴ Multiview 1 stopped at technical design.

Appendix N

Socially Constructed Reality

Socially constructed reality forms a concept within the sociology of knowledge and the social constructionist strand of postmodernism. Berger and Luckman (1966) popularised the concept and the terminology of “socially constructed reality,” which stress the ongoing mass-building of worldviews by individuals in dialectical interaction with society. Social constructionism examines the ways that individuals and groups create their perceived reality. Social phenomena are created, institutionalised, and made into tradition by humans (Berger and Luckman, 1966). The realities comprise the imagined worlds of human social existence and activity, crystallised by habit into institutions propped up by language conventions, given ongoing legitimation by mythology, religion and philosophy, maintained by therapies and socialisation, and subjectively internalised by upbringing and education to become part of the identity of social citizens.

Berger and Luckman (1966) believe that social order is an ongoing human production, produced by man in the course of his ongoing externalisation, that it is not biologically given or derived from data in its empirical manifestations. Social order is not given in man’s natural environment; it exists only as a product of human activity. Both in its genesis (social order is the result of past human activity) and its existence in any instant of time (social order exists only and insofar as human activity continues to produce it), social order is a human product.

Hacking argues that when something (X) is said to be “socially constructed,” this is shorthand for the following claims:

- In the present state of affairs, X is taken for granted: X appears to be inevitable (Hacking, 1999:12).
- X need not have existed or need not be at all as it is: X, or X as it is at present, is not determined by the nature of things: it is not inevitable (Hacking, 1999: 6).

Latour (1987) uses the ideas of social constructionism to relate supposedly objective facts to processes of social construction to show that human subjectivity imposes itself on those facts we take to be objective, not the other way around.

All human activity is subject to habituation. Any action that is repeated frequently becomes cast into a pattern, which can then be reproduced with an economy of effort and which is apprehended by its performer as that pattern. Habituation further implies that the action in question may be performed again in the future in the same or similar manner. Habituated actions retain their meaningful character for the individual, although the meanings involved become embedded as routines in his general stock of knowledge, taken for granted, and at hand for projects into the future. In terms of the meanings bestowed by man upon his activity, habituation makes it unnecessary for each situation to be defined anew, step by step. A large variety of situations may be subsumed under its predefinitions. The activity to be undertaken in these situations can then be anticipated. These processes of habituation precede institutionalisation.

Institutionalisation occurs whenever there is a reciprocal typification of habituated actions by types of actors. The institutional typifications and the typicality of not only the actions but also the actors in institutions are linked reciprocally (ie. the actions of type X will be performed by actors of type X). Institutions further imply historicity and control. Reciprocal typifications of actions are built up in the course of a shared history. Institutions always have a history, of which they are the products. It is impossible to understand an institution adequately without an understanding of the historical process in which it was produced. Institutions control human conduct by setting up predefined patterns of conduct, which channel it in one direction as opposed to the many other directions that would theoretically be possible. This controlling character is inherent in institutionalisation.

A social world, in the sense of a comprehensive and given reality, confronts the individual in a manner analogous to the reality of the natural world. In this way, the social formations are transmitted to a new generation. In the early phases of socialisation, children are incapable of distinguishing between the objectivity of natural phenomena and the objectivity of the social formations. An institutional world, then, is experienced as

an objective reality. It has a history that antedates the individual's birth and is not accessible to her biographical recollection. This history itself, as the tradition of the existing institutions, has the character of objectivity. The individual's biography is apprehended as an episode located within the objective history of the society. The institutions confront the individual as undeniable facts. The institutions are there, external to her, and persistent in their reality. The process by which the externalised products of human activity attain the character of objectivity is objectification. The institutional world is, therefore, objectivicated human activity.

The relationship between man (the producer) and the social world (his product) is dialectical, as they interact with each other. Externalisation and objectification are moments in the continuing dialectical process of internalisation (by which the objectified social world is retrojected into consciousness in the course of socialisation): society is a human product; society is an objective reality; man is a social product.

Socially constructed practice is located in the shared understandings and actions of the people who undertake it, related to its context and historical development. Many theoretical lenses can be adopted to study socially constructed practice, ie. situated action (Suchman, 1987), Actor Network Theory (ANT) (Latour, 1987; Callon and Law, 1989) (which is described in Section 5.5.3 of this chapter) and Structuration Theory (which is described in Appendix M).

Structuration Theory focuses on the emergent effects of action and structure and the subsequent evolving pattern of behaviours and understandings (Giddens, 1984). Structuration Theory offers an explanation of social practice as the recursive interaction of agency and structure (Barley, 1986; Orlikowski and Robey, 1991; Walsham and Han, 1991; Jones and Nandhakumar, 1993; Walsham, 1993; Jones, 1997; Brooks, 1997; Orlikowski, 1992; 2000; Rose, 1998; Rose and Scheepers, 2001). Agency refers to what human actors choose to do, whereas structure refers to the sets of personal and collective understandings that form the context in which they do it, and at least partly determines what they are able to understand as a viable potential action. Human agency, in Giddens formulation, is the "capacity to make a difference" (Giddens, 1984: 14). He defines structure as:

“Rules and resources recursively implicated in social reproduction, institutionalised features of social systems have structural properties in the sense that relationships are stabilized across time and space... (Structure) exists only as memory traces, the organic basis of human knowledgability. Structure refers, in social analysis, to the structuring properties allowing the “binding” of time space in social systems, the properties which make possible for similar social practices to exist across varying spans of time and space”

(Giddens, 1984: 17).

Social practice, then, can be regarded as the interaction of structure (sets of individual and communal understandings) and action. Giddens recasts the two independent sets of phenomena (dualism) of structure and agency as a “duality” (two concepts which are dependent upon each other and recursively related).

“The structural properties of social systems are both medium and outcome of the practices they recursively organise”

(Giddens, 1984: 25).

Structuration is therefore the process whereby the “duality of structure” evolves and is reproduced over time and space to constitute social practice. Giddens suggests that the duality of structure can be analysed as dimensions including signification, domination and legitimation (structure) and the related concepts of communication, power and sanction (interaction). The social construction of practice can therefore be understood in structurational terms, as the recursive interaction of structure and agency (analysable in terms of the dimensions above), reproduced over time and space and integrated into emergent patterns.

Organisations tend to naturally choose or develop technologies that reflect their own social construction of their operations, and the technologies therefore produce hidden reinforcing effects that tend to support rather than challenge existing practices. They can easily be integrated into the cycle of structure and action, reinforcing the dominant logics rather than changing them. This does not mean the programs are without value, but rather that they will tend to produce small incremental improvements to existing

practices. Challenging insights and radical improvement proposals must therefore come from other directions.

Structuration Theory is explained in more detail in Appendix M.

Appendix O

Findings Arising From The Case Studies in Line with the Literature Review

Name	Role	Organisation
Peter Osborne	Owner/Director	Berkeley Square Gallery
Christopher Davis	Founder/Director	Davis & Co.
William Goodenough	Group Executive Chairman	Design Bridge
Christopher Foyle	Part owner/Director	Foyles
Demetrios Zoppos	Managing Director	G-FX
Alex Fitzgibbons	Founder/Director	Lobster
Jessica Seaton	Founder/CEO	Toast

Table A.14 - Table of Interviewees

Findings in Line with Research		
Finding	Case Organisation(s)	References
<i>The barriers to adoption and implementation of e-business were significant enough to be reasons for not adopting e-business for these case organisations.</i>	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • Presented in Chapters 2 and 3 and in Appendices A and C.
<i>Owner-manager is a passionate advocate of technology.</i>	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • G-FX 	<ul style="list-style-type: none"> • Evidence that this SME owner/manager characteristic is essential for championing e-business adoption is presented in Chapters 2 and 3 and in Appendix C (Kirby and Turner, 1993; Harrison, 1994; Iacovou <i>et al.</i>, 1995; Yap and Thong, 1997; Berg and Karttunen, 1998; Nilsson, 1999; Turban <i>et al.</i>, 2000).
<i>Staff will usually only move on to another firm for a substantial pay rise, not career progression.</i>	<ul style="list-style-type: none"> • Berkeley Square Gallery 	<p>This is in line with the following findings:</p> <ul style="list-style-type: none"> • SMEs generally pay lower wages, as presented in Chapter 2 and Appendix B (Gunningle and Grady, 1984; Kennedy and Healy, 1985; McMahon, 1994). • SMEs generally don't train staff, as presented in Chapter 2 and the comprehensive reference lists provided in Appendices B, E and F (which include: Hitchens and O'Farrell, 1988; Blili and Raymond, 1993; Reynolds <i>et al.</i>, 1994; Bunker and MacGregor, 2000). • People with management potential "do not tend to stay" with the gallery, as they are offered "no opportunity of promotion."

Findings in Line with Research		
Finding	Case Organisation(s)	References
		The gallery is too small to offer an upward career path to ambitious staff – a problem shared by many SMEs, as has been shown in Chapter 2 and Appendix B (Gunnigle and Grady, 1984; McMahon, 1994; Kennedy and Healy, 1985; Bili and Raymond, 1993; Dennis, 2000).
Relied on existing physical infrastructure to deliver products to an online market.	<ul style="list-style-type: none"> Berkeley Square Gallery Toast 	<ul style="list-style-type: none"> (Craig <i>et al.</i>, 2003).
Considered knowledge to be a primary source of competitive advantage.	<ul style="list-style-type: none"> Berkeley Square Gallery Davis & Co. G-FX Lobster 	<ul style="list-style-type: none"> A view supported by the findings comprehensively presented in Chapter 3 – look them up.
Owner-manager likes to micro-manage.	<ul style="list-style-type: none"> Berkeley Square Gallery Lobster 	<ul style="list-style-type: none"> This is in line with evidence presented in Chapter 2 and Appendix B regarding the strong owner influence and centralised management of SMEs (Dandridge, 1971; Nelson and Winter, 1977; 1982; Welch and White, 1981; Oakey, 1985; Raymond, 1985; Miller and Droge, 1986; Miller and Toulouse, 1986; Bekker and Staude, 1988; Bili and Raymond, 1993; Kirby and Turner, 1993; Harrison, 1994; Reynolds <i>et al.</i>, 1994; Iacovou <i>et al.</i>, 1995; Mulhern, 1995; Murphy, 1996; Spender, 1996; Julien <i>et al.</i>, 1997; Yap and Thong, 1997; Bolisani and Scarco, 1999; Bunker and MacGregor, 2000; Dennis, 2000; Smallbone <i>et al.</i>, 2000; Olave and Nato, 2001)
Making technological decisions based on advice from friends and/or the press, not experts.	<ul style="list-style-type: none"> Berkeley Square Gallery Toast 	<p>References and examples in line with evidence in Chapters 2 and 3 and Appendices A, C, E and F are presented for the following aspects of this type of SME owner/manager decision-making:</p> <ul style="list-style-type: none"> Informal and inadequate planning processes occur because of a lack of the owner/manager's recognition of the benefits of doing so (Gunnigle and Brady, 1984; Giaglis <i>et al.</i>, 1998; McMahon, 1994; Reynolds <i>et al.</i>, 1994; Pollard and Hayne, 1998; Chappell and Feindt, 1999; Bunker and MacGregor, 2000; Stauber, 2000; Millar and Besser, 2000; Lee, 2001; Levy <i>et al.</i>, 2001a; 2001b; Raymond, 2001; Tetteh and Burn, 2001; Jeffcoate <i>et al.</i>, 2002). SME owner/managers typically take advice from friends and family rather than from professionals (Dandridge, 1979; Clegg, 1990; Cornford <i>et al.</i>, 1991; Bunker and MacGregor, 2000; Castleman <i>et al.</i>, 2000; Dennis, 2000; Gibb, 2000; Miller and Besser, 2000; Castleman and Coulthard,

Findings in Line with Research		
Finding	Case Organisation(s)	References
		<p>2001; Drakopoulou-Dodd <i>et al.</i>, 2002).</p> <ul style="list-style-type: none"> SME owner-managers having short-range management perspective (Welch and White, 1981; Harrison, 1994; Reynolds <i>et al.</i>, 1994; Giaglis <i>et al.</i>, 1998; Pollard and Hayne, 1998; Bunker and MacGregor, 2000; Tetteh and Burn, 2001; Jeffcoate <i>et al.</i>, 2002). Chapters 1-4 present evidence regarding SMEs seeking out and taking advice from informal, often unprofessional, sources.
Limited computer skills of owner-manager.	<ul style="list-style-type: none"> Berkeley Square Gallery Toast 	<ul style="list-style-type: none"> This is in line with evidence presented in Chapters 2 and 3 and Appendices B, E and F (Roberts and Berry, 1985; Iacovou <i>et al.</i>, 1995; Poon and Swatman, 1996b; 1997a; 1997b, Auger and Gallagher, 1997; Yap and Thong, 1997; Tidd <i>et al.</i>, 1997; Berg and Karttunen, 1998; Zimmerman and Mathiesen, 1998; Purao and Campbell, 1998; Chau and Pederson, 2000; Farhoomand <i>et al.</i>, 2000; Mirchandani and Motwani, 2001; Barry and Milner, 2002; Dixon <i>et al.</i>, 2002; Roberts and Wood, 2002).
Amount of programming and maintenance work underestimated.	<ul style="list-style-type: none"> Berkeley Square Gallery 	<ul style="list-style-type: none"> As we have seen in Chapter 3 and Appendix F, many organisations launch websites without realising how much maintenance and ongoing development they will require (Sriram and Bannerjee, 1994; Murphy, 1996; Berg and Karttunen, 1998; MacGregor <i>et al.</i>, 1998; 2004; St. Pierre <i>et al.</i>, 1999; Ritchie <i>et al.</i>, 1999; Stauber, 2000; Sparkes and Thomas, 2001; Lee, 2001; Porter, 2001). Many SMEs are particularly disadvantaged by their lack of clearly thought out or articulated goals (Pollard and Hayne, 1998; Giaglis <i>et al.</i>, 1998; Kalakota and Robinson, 1999; Bunker and MacGregor, 2000; Evans and Wurster, 2000; Jeffcoate <i>et al.</i>, 2002). In addition, because the internet is a relatively new medium, attitudes towards it within conservative public and commercial arts organisations are imbued with "prejudice and mystique" (Haapalainen, 1999).
Retrospective acknowledgement of need to define goals and strategies before launching online operations.	<ul style="list-style-type: none"> Berkeley Square Gallery 	<ul style="list-style-type: none"> This issue is presented in Chapter 3 and Appendix F, and is in line with the findings of Giaglis <i>et al.</i>, 1998; Pollard and Hayne (1998), Kalakota and Robinson (1999), Bunker and MacGregor (2000), Evans and Wurster (2000) and Jeffcoate <i>et al.</i> (2002).
Many website designs do not take into account either the essential properties or the potential of the	<ul style="list-style-type: none"> Berkeley Square Gallery 	<ul style="list-style-type: none"> As was illustrated by Table 4.2 in Chapter 4, whereby although 73% of UK government services directed towards SMEs have some degree of electronic

Findings in Line with Research		
Finding	Case Organisation(s)	References
<i>medium, and many content features are introduced in electronic form in the same guise as their traditional printed versions, such as brochures.</i>		presence, in practice many of these are simply online equivalents of the paper-based services already available, and consequently offer insufficient additional value to users over their paper-based equivalents.
<i>Evaluating and updating online operations are often overlooked once a site has launched.</i>	<ul style="list-style-type: none"> Berkeley Square Gallery Lobster 	<ul style="list-style-type: none"> This view is in line with evidence presented in Chapter 3 and Appendices E and F (Sriram and Bannerjee, 1994; Murphy, 1996; Lawrence, 1997; Giaglis <i>et al.</i>, 1998; MacGregor <i>et al.</i>, 1998; Zimmerman and Mathiesen, 1998; Pollard and Hayne, 1998; Berg and Karttunen, 1998; Kalakota and Robinson, 1999; Ritchie <i>et al.</i>, 1999; St. Pierre <i>et al.</i>, 1999; Stauber, 2000; Bunker and MacGregor, 2000; Evans and Wurster, 2000; Tetteh and Burn, 2000; 2001; Lee, 2001; Porter, 2001; Sparkes and Thomas, 2001; Jeffcoate <i>et al.</i>, 2002; MacGregor <i>et al.</i>, 1998; 2004).
<i>The benefit of working more flexibly as a result of e-business adoption and implementation.</i>	<ul style="list-style-type: none"> Davis & Co. Foyles Lobster Toast 	<ul style="list-style-type: none"> The benefit of working more flexibly as a result of e-business adoption and implementation is explored in Chapters 2 and 3 and in Appendices A, B and C, in line with the findings of a number of researchers (who include: Sterne, 1996; Guthrie and Austin, 1996; Auger and Gallagher, 1997; Ghosh, 1998; Currie, 1998; Watson, <i>et al.</i>, 1998; Evans and Wurster, 1999; Fraser <i>et al.</i>, 2000; Timmers, 2000; Vescovi, 2000; Poon and Joseph, 2000; 2001; Reimenschneider and Mykytyn, 2000; Porter, 2001; Rayport and Jaworski, 2001). While technology is the enabler, flexible working is really about evaluating working practices in the light of these technologies, and changing those practices to gain advantage. Flexible working with internet and mobile technologies enables people to work from home or at any other location while remaining in touch with customers and colleagues via technology, such as WAP, messaging services, voiceover IP and internet-enabled call centres, a laptop and mobile phone. Organisations are increasingly turning to flexible working to cut overheads and to meet the demands of an increasingly mobile workforce (Teleworking Association, 2000). Introduced correctly and with the appropriate technology, flexible working can increase flexibility and reduce stress. Teleworking can enable employees to work more flexibly and effectively, and

Findings in Line with Research		
Finding	Case Organisation(s)	References
		<p>companies typically achieve increases in individual productivity. Additional benefits can include lower office and travel overheads, higher morale and increased productivity. A survey of NatWest Bank managers found a 20% increase in productivity on the days when they were teleworking (Teleworking Association, 2000).</p> <ul style="list-style-type: none"> • However, there is a risk with flexible working that people may end up working longer hours, become more stressed, and feel cut off from their colleagues. Some people prefer the social hub of an office and are unsuited to working from home – it is simply not the way they want, or are able, to work. Flexible working should therefore be introduced in a systematic and culturally sensitive way if it is to be effective (Teleworking Association, 2000).
<i>The dual benefits of reduced costs and increased efficiency arising as a result of adopting and implementing e-business.</i>	<ul style="list-style-type: none"> • Davis & Co. • G-FX • Lobster • Foyles 	<ul style="list-style-type: none"> • These issues are explored in Chapters 2 and 3 and in Appendices A and C, in line with the findings of a number of researchers (who include: Raymond and Bergeron, 1996; Abell and Limm, 1996; Angehrn, 1997; Auger and Gallagher, 1997; Coccia, 1997; Kalakota and Whinston, 1997; Poon and Swatman, 1997a; 1997b; 1997c; Shapiro and Varian, 1998; Berg and Karttunen, 1998; Radstaak and Ketelaar, 1998; Gullledge and Sommer, 1998; Currie, 1998; APEC, 1999; Hawkins and Prencipe, 2000; Turban <i>et al.</i>, 2000; Reimenschneider and Mykytyn, 2000; Kaplan and Sawhney, 2000; Poon and Joseph, 2000; 2001; Raymond, 2001; Porter, 2001; Martin, 2001; Europmedia, 2001; Howarth, 2002; Quayle, 2002a; 2002b; DTI, 2002a; 2002b; 2002c).
<i>Recognition of the value of organisational knowledge retention.</i>	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • G-FX • Lobster 	<ul style="list-style-type: none"> • This is line with findings presented in Chapter 3.
<i>The ability to “personalise” and uniquely target products and services to potential and existing clients as a competitive driver of benefits arising from e-business adoption and implementation.</i>	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • G-FX • Lobster • Toast 	<ul style="list-style-type: none"> • This ability is presented in Chapter 3 and Appendix A.
<i>Espoused the benefits of</i>	<ul style="list-style-type: none"> • Berkeley Square 	<ul style="list-style-type: none"> • These benefits were discussed in Chapter 2

Findings in Line with Research		
Finding	Case Organisation(s)	References
<i>SMEs engaging in formal and informal networking.</i>	<ul style="list-style-type: none"> Gallery • Davis & Co. 	<p>(Lei and Slocum, 1992; Möller, 1992; Golden and Dollinger, 1993; Gibb, 1993; Grönroos, 1994; Ozcan, 1995; Webster, 1995; Mowery <i>et al.</i>, 1996; Raymond and Bergeron, 1996; Rosenfeld, 1996; Auger and Gallagher, 1997; Gummesson, 1997; Dean <i>et al.</i>, 1997; Gimeno <i>et al.</i>, 1997; Tikkanen, 1998; Achrol and Kotler, 1999; Jeal and Wroe, 1999; Keeble <i>et al.</i>, 1999; Miles <i>et al.</i>, 1999; Dennis, 2000; Overby and Min, 2000; 2001; Engsbo <i>et al.</i>, 2001; Premaratne, 2001; O'Donnell <i>et al.</i>, 2001; Bar Nir and Smith, 2002).</p> <ul style="list-style-type: none"> • Davis & Co.'s experience confirms the findings of Jarratt (1998), Keeble <i>et al.</i> (1999), Overby and Min (2000) and others, as presented in Chapter 2, concerning alliances and networks providing SMEs with a higher and more stable flow of information and resources. Davis' networking prowess in entering operations in foreign markets supersedes the findings of researchers (Dicht <i>et al.</i>, 1990; Devins, 1994; Hamill and Gregor, 1997; Poon and Swatman, 1997a; Julien <i>et al.</i>, 1997) regarding SMEs facing internal and external obstacles when attempting to do so, and the firm's experience is not in accordance with Bennett (1997; 1998), whose research showed that businesses that trade online felt less physical distance from foreign markets. Findings regarding obtaining foreign representation when conducting businesses abroad are also presented in Chapter 2 (Boter and Holmquist, 1997; Gankema <i>et al.</i>, 1997; Bennett, 1998; Hornby <i>et al.</i>, 2002). • The nature of (formal and informal) networking is described in Chapter 2 (Lei and Slocum, 1992; Möller, 1992; Golden and Dollinger, 1993; Gibb, 1993; Grönroos, 1994; Ozcan, 1995; Webster, 1995; Mowery <i>et al.</i>, 1996; Raymond and Bergeron, 1996; Rosenfeld, 1996; Auger and Gallagher, 1997; Gummesson, 1997; Dean <i>et al.</i>, 1997; Gimeno <i>et al.</i>, 1997; Tikkanen, 1998; Achrol and Kotler, 1999; Jeal and Wroe, 1999; Keeble <i>et al.</i>, 1999; Miles <i>et al.</i>, 1999; Dennis, 2000; Overby and Min, 2000; 2001; Engsbo <i>et al.</i>, 2001; Premaratne, 2001; O'Donnell <i>et al.</i>, 2001; Bar Nir and Smith, 2002).
<i>Using networks and alliances to begin to operate in foreign markets.</i>	<ul style="list-style-type: none"> • Davis & Co. • Design Bridge • G-FX 	<ul style="list-style-type: none"> • The traditional challenges SMEs faced when operating in foreign jurisdictions are examined in Chapter 2 (Dicht <i>et al.</i>, 1990; Devins, 1994; Hamill and Gregory 1997;

Findings in Line with Research		
Finding	Case Organisation(s)	References
		Boter and Holmquist, 1997; Gankema <i>et al.</i> , 1997; Poon and Swatman, 1997a; Julien <i>et al.</i> , 1997; Watson <i>et al.</i> , 1997; Bennett, 1997; 1998; Kandasaami, 1998; Zimmerman and Mathiesen, 1998; Hornby <i>et al.</i> , 2002).
<p>Formal networks can provide a number of advantages over stand-alone organisations, such as:</p> <ul style="list-style-type: none"> • <i>The sharing of financial risk (Jorde and Teece, 1989)</i> • <i>Technical knowledge (Marchewka and Towell, 2000)</i> • <i>Market penetration (Achrol and Kotler, 1999)</i> • <i>Internal efficiency (Datta, 1988)</i> 	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • G-FX 	<ul style="list-style-type: none"> • In Chapter 2, it was shown by researchers that the SMEs that collaborate with business partners gain more benefit from technology adoption and implementation (Möller, 1992; Grönroos, 1994; Raymond and Bergeron, 1996; Gummesson, 1997), as networks, alliances and mentoring can provide SMEs with the assistance many need in order to adopt innovative ideas and practices, as well as to increase the availability of, and enable access to, specific skills and tools (Jeal and Wroe, 1999; Leo and Booth, 2001).
<p>Their dealings with other businesses were informal and did not fall under any form of enforced governance, and thus were not considered to be either networks or alliances.</p>	<ul style="list-style-type: none"> • Design Bridge • Foyles • Lobster • Toast 	<ul style="list-style-type: none"> • In Chapter 2, research was presented that showed that informal alliances and networks provide SMEs with a higher and more stable flow of information and resources (Rosenfeld, 1996; Miles <i>et al.</i>, 1999; Overby and Min, 2001; Premaratne, 2001), and that informal but long-lasting, stable collaborations between organisations can significantly increase their competitiveness (Buratti and Penco, 2001).
<p>Formal networks provide a number of advantages over self-directed SMEs including:</p> <ul style="list-style-type: none"> • <i>Technical knowledge</i> • <i>Assistance in product/service adjustment to suit a larger market</i> • <i>Assistance in business methods to suit business techniques</i> 	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • G-FX 	<ul style="list-style-type: none"> • This issue was addressed in Chapter 2 (Miles <i>et al.</i>, 1999; Marchewka and Towell, 2000; Dennis, 2000) have suggested that formal networks provide advantages over self-directed SMEs.
<p>Oblivious to extant government policies and initiatives to encourage SMEs to adopt and implement e-business.</p>	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • This issue is addressed in some detail in Chapter 4.3 (including: Lei and Slocum, 1992; Möller, 1992; Golden and Dollinger, 1993; Gibb, 1993; Grönroos, 1994; Ozcan, 1995; Webster, 1995; Mowery <i>et al.</i>, 1996; Raymond and Bergeron, 1996; Rosenfeld, 1996; Auger and Gallagher, 1997; Gummesson, 1997; Dean <i>et al.</i>, 1997; Gimeno <i>et al.</i>, 1997; Tikkanen, 1998; Achrol and Kotler, 1999; Jeal and Wroe, 1999; Keeble <i>et al.</i>, 1999; Miles <i>et al.</i>, 1999; Dennis, 2000; Overby and Min, 2000; 2001; Engsbo <i>et al.</i>, 2001; Premaratne,

Findings in Line with Research		
Finding	Case Organisation(s)	References
		2001; O'Donnell et al., 2001; Bar Nir and Smith, 2002).
<i>Clients do not take full advantage of the technology available to them.</i>	<ul style="list-style-type: none"> • Davis & Co. 	<ul style="list-style-type: none"> • Such benefits of e-business adoption and implementation are explored in detail in Chapter 3 and in Appendices A and C.
<i>E-business enables small business operators to exercise new business models in established markets.</i>	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • G-FX • Lobster • Toast 	<ul style="list-style-type: none"> • This is in line with the findings of research presented in Chapters 2 and 3 and in Appendices A and C (including: APEC, 1999; Timmers, 2000; Rayport and Jaworski, 2001).
<i>E-business enables small business operators to compete with larger organisations.</i>	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • Lobster • G-FX • Toast 	<ul style="list-style-type: none"> • This is in line with the findings of research presented in Chapters 2 and 3 and in Appendices A and C (including: Guthrie and Austin, 1996; Watson <i>et al.</i>, 1998; Turban <i>et al.</i>, 2000).
<i>E-business enables small business operators to operate a niche business whilst obtaining access to a wider customer pool than would otherwise be the case.</i>	<ul style="list-style-type: none"> • Davis & Co. • Lobster • Toast 	<ul style="list-style-type: none"> • This is in line with the findings of research presented in Chapters 2 and 3 and in Appendices A and C (including: Sterne, 1996; Abell and Lim, 1996; Coccia, 1997; Kalakota and Whinston, 1997; Lawrence, 1997; Bennett, 1997; 1998; Poon and Swatman, 1997a; 1999a; 1999b; Puhakainen and Brännback, 1998; Kalakota and Robinson, 1999; Kaplan and Sawhney, 2000; Reimenschneider and Mykytyn, 2000; Turban <i>et al.</i>, 2000; Lee, 2001; Phan, 2001; Wilson, 2001; Daniel and Wilson, 2002; Power and Sohal, 2002; Windrum <i>et al.</i>, 2003; Windrum, 2004; Windrum and Berrenger, 2004).
<i>E-business enables stock to be ordered daily.</i>	<ul style="list-style-type: none"> • G-FX • Lobster 	<p>e-Business models leading to the benefits of reduced lead-time and greater efficiency are addressed in Chapter 3 and Appendix A (Abell and Limm, 1996; Raymond and Bergeron 1996; Poon and Swatman, 1997a; 1997b; 1997c; Currie, 1998; Gullledge and Sommer, 1998; Radstaak and Ketelaar, 1996; Hawkins and Prencipe, 2000; Quayle, 2002a; 2002b). Benefits relevant to this point are addressed in Chapter 3 and Appendix A:</p> <ul style="list-style-type: none"> • <i>Lower administration costs</i> - (Abell and Limm, 1996; Poon and Swatman, 1997a; 1997b; 1997c; Radstaak and Ketelaar, 1998; Berg and Karttunen, 1998; Currie, 1998; Hawkins and Prencipe, 2000; Turban <i>et al.</i>, 2002; Howarth, 2002; Quayle, 2002a; 2002b). • <i>Lower production costs</i> - (Abell and Limm, 1996; Raymond and Bergeron, 1996; Angehrn, 1997; Kalakota and Whinston,

Findings in Line with Research		
Finding	Case Organisation(s)	References
		<p>1997; Poon and Swatman, 1997a; 1997b; 1997c; Berg and Karttunen, 1998; Currie, 1998; Gullledge and Sommer, 1998; Shapiro and Varian, 1998; APEC, 1999; Hawkins and Prencipe, 2000; Turban <i>et al.</i>, 2000; Europmedia, 2001; Porter, 2001; Raymond, 2001; Howarth, 2002; Quayle, 2002a; 2002b).</p> <ul style="list-style-type: none"> • <i>Reduced stock</i> - (Kalakota and Whinston, 1997; Currie, 1998; Gullledge and Sommer, 1998; Radstaak and Ketelaar, 1998; Quayle, 2002a; 2002b). • <i>Improved internal efficiency</i> - (McWilliams, 1995; Abell and Lim, 1996; Kalakota and Whinston, 1996; 1997; Auger and Gallagher, 1997; Coccia, 1997; O'Connor and O'Keefe, 1997; Poon and Swatman, 1997c; 1998a; 1998b; 1999a; 1999b; Berg and Karttunen, 1998; Currie, 1998; Gullledge and Sommer, 1998; MacGregor <i>et al.</i>, 1998; Palumbo and Herbig, 1998; Radstaak and Ketelaar, 1998; APEC, 1999; Fraser <i>et al.</i>, 2000; Hawkins and Prencipe, 2000; Kaplan and Sawhney, 2000; Tetteh and Burn, 2000; 2001; Porter, 2001; Chaston and Mangles, 2002; Howarth, 2002; Quayle, 2002a; 2002b). • <i>Improved quality of information</i> - (Abell and Limm, 1996; Kalakota and Whinston, 1996; Auger and Gallagher, 1997; Coccia, 1997; Poon and Swatman, 1997c; 1999a; 1999b; Cohen, 1998; Currie, 1998; Gullledge and Sommer, 1998; Palumbo and Herbig, 1998; Radstaak and Ketelaar, 1998; Kaplan and Sawhney, 2000; Quayle, 2002a).
Increased flexibility and scalability.	<ul style="list-style-type: none"> • Davis & Co. • Foyles • G-FX • Lobster • Toast 	<ul style="list-style-type: none"> • These benefits of adopting and implementing e-business are addressed in Chapter 3 and Appendix A (Currie, 1998; Feinberg and Eastlick, 1997; Kalakota and Whinston, 1997; Ghosh, 1998; Evans and Wurster, 1999; Fraser <i>et al.</i>, 2000; Timmers, 2000; Vescovi, 2000; Porter, 2001; Rayport and Jaworski, 2001). • Scalability and the flexibility to react to and change with market conditions as benefits of SMEs adopting and implementing e-business is addressed in Chapter 3 and Appendices A and B (Iocovou <i>et al.</i>, 1995; Currie, 1998; Chappell and Feindt, 1999; Hadjimanolis, 1999; Feinberg and Eastlick, 1997; Kalakota and Whinston, 1997; Ghosh, 1998; Troye-Walker, 1998a; 1998b; Evans and Wurster, 1999; Fraser <i>et al.</i>, 2000; Smallbone <i>et al.</i>, 2000; Timmers, 2000; Vescovi, 2000; Porter, 2001; Rayport

Findings in Line with Research		
Finding	Case Organisation(s)	References
		<p>and Jaworski, 2001; Olave and Nato, 2001; Quayle, 2002a; 2002b).</p> <ul style="list-style-type: none"> • The benefits of the new business models e-business facilitates are examined in Chapters 2 and 3 and in Appendices A and C. • Scalability and the flexibility to streamline operations and customer fulfilment as benefits of SMEs adopting and implementing e-business is addressed in Chapter 3 and Appendices A and B (Iocovou <i>et al.</i>, 1995; Currie, 1998; Chappell and Feindt, 1999; Hadjimanolis, 1999; Feinberg and Eastlick, 1997; Kalakota and Whinston, 1997; Ghosh, 1998; Troye-Walker, 1998a; 1998b; Evans and Wurster, 1999; Fraser <i>et al.</i>, 2000; Smallbone <i>et al.</i>, 2000; Timmers, 2000; Vescovi, 2000; Porter, 2001; Rayport and Jaworski, 2001; Olave and Nato, 2001; Quayle, 2002a; 2002b).
<i>Fear of security risks a barrier to operating at full e-business potential.</i>	<ul style="list-style-type: none"> • Lobster 	<ul style="list-style-type: none"> • This issue features in Chapter 3 and Appendix E (Aldridge <i>et al.</i>, 1997; Purao and Campbell, 1998; Oxley and Yeung, 2001; Dixon <i>et al.</i>, 2002; Quayle, 2002a; 2002b). • In line with research findings presented in Appendices E and F (Aldridge <i>et al.</i>, 1997; Purao and Campbell, 1998; Ritchie and Brindley, 2000; Oxley and Yeung, 2001; Dixon <i>et al.</i>, 2002; Quayle 2002a; 2002b; MacGregor <i>et al.</i>, 2004).
<i>Short-lived unsuitable alliances established due to lack of knowledge and/or experience.</i>	<ul style="list-style-type: none"> • Berkeley Square Gallery • Lobster 	<ul style="list-style-type: none"> • This disadvantage arising from adopting and implementing e-business is discussed in Chapter 3 and Appendix F (Murphy, 1996; MacGregor <i>et al.</i>, 1998; 2004; Giaglis <i>et al.</i>, 1998; Ritchie <i>et al.</i>, 1999; Kalakota and Robinson, 1999; Tetteh and Burn, 2000; 2001; Stauber, 2000; Bunker and MacGregor, 2000; Evans and Wurster, 2000; Lee, 2001; Lee, 2001; Porter, 2001; Sparkes and Thomas, 2001; Jeffcoate <i>et al.</i>, 2002).
<i>SME, but with overseas branches.</i>	<ul style="list-style-type: none"> • Design Bridge • G-FX 	<ul style="list-style-type: none"> • In Chapter 2, it is explained that organisations categorised under the SME umbrella differ enormously, not only with respect to employee numbers and annual turnover, but also in their business activities, degree of international exposure, customer base(s), sector characteristics, and technological sophistication. As a result, a great variety of organisational structures exist, some of which resemble those of large businesses, and some of which resemble those of micro-businesses (Windrum and de

Findings in Line with Research		
Finding	Case Organisation(s)	References
		<p>Berranger, 2003; Windrum, 2004).</p> <ul style="list-style-type: none"> • Windrum and Berranger (2004) also posit that, the organisational structures of larger SMEs are often more like the specialised, divisional hierarchies that are traditionally associated with large organisations, with specialist middle managers in control of an independent departmental budget (Windrum, 2004). These findings are in line with the experience of Design Bridge, with its overseas branches.
<i>Had to adopt e-business in order to remain competitive.</i>	<ul style="list-style-type: none"> • Berkeley Square Gallery • Design Bridge • Foyles 	<ul style="list-style-type: none"> • This is in line with research presented in Chapters 2 and 3 and Appendices A, B and C.
<i>Market-dependent knowledge-based innovation.</i>	<ul style="list-style-type: none"> • Davis & Co. • Design Bridge • G-FX • Foyles 	<ul style="list-style-type: none"> • In Chapter 3 and Appendix E the issue of knowledge-based innovation being often market-dependent is addressed (Davenport, 1992; Cobbenhagen and Nauwelaers, 1999). An organisation with a knowledge challenge (such as Foyles during this period) could be blindsided by competitors exploiting opportunities of which it is not even aware: it may simply miss the boat strategically (Haynes <i>et al.</i>, 1998).
<i>Chaotic organisational structure.</i>	<ul style="list-style-type: none"> • Foyles 	<ul style="list-style-type: none"> • Chaotic organisational structure as a result of SME owner/manager influence is explored in Chapter 2 and in Appendices B and E (Kirby and Turner, 1993; Benjamin and Levinson, 1993; Iacovou <i>et al.</i>, 1995; Poon and Swatman, 1996a; 1996b; Zimmerman and Mathiesen, 1998; Chappell and Feindt, 1999; Nilsson <i>et al.</i>, 1999; Chau and Pederson, 2000; Van Doren <i>et al.</i>, 2000; Levy and Powell, 2000; 2002; Levy <i>et al.</i>, 2001a).
<i>A lack of investment in technology as a result of an SME owner/manager not understanding the advantage of adopting and implementing it.</i>	<ul style="list-style-type: none"> • Berkeley Square Gallery • Foyles 	<ul style="list-style-type: none"> • This issue is explored in Chapters 2 and 3 and Appendices A, E and F (Ein-Dor and Segev, 1978; Roberts and Berry, 1985; Cheney <i>et al.</i>, 1986; Runge and Earl, 1988; Raymond, 1990b; 1992; 2001; Rothwell, 1991; Davenport, 1992; Kirby and Turner, 1993; Lefebvre and Lefebvre, 1993; Harrison, 1994; Iacovou <i>et al.</i>, 1995; Poon and Swatman, 1996b; 1997b; 1997c; Auger and Gallagher, 1997; Tidd <i>et al.</i>, 1997; Yap and Thong, 1997; Westhead and Storey, 1996; Giaglis <i>et al.</i>, 1998; Pollard and Hayne, 1998; Purao and Campbell, 1998; Berg and Karttunen, 1998; Zimmerman and Mathiesen, 1998; Cobbenhagen and Nauwelaers, 1999; Lefebvre <i>et al.</i>, 1999; Pitt <i>et al.</i>, 1999; Bunker and MacGregor, 2000; Chau and

Findings in Line with Research		
Finding	Case Organisation(s)	References
		Pederson, 2000; Farhoomand <i>et al.</i> , 2000; Hill and Stewart, 2000; Jeffcoate <i>et al.</i> , 2000; 2002; Stauber, 2000; Chau and Hui, 2001; Lee, 2001; Lee and Runge, 2001; Levy <i>et al.</i> , 2001b; Mirchandani and Motwani, 2001; Porter, 2001; Sathye and Beal, 2001; Tetteh and Burn, 2001; Dixon <i>et al.</i> , 2002; Barry and Milner, 2002; Dixon <i>et al.</i> , 2002; Roberts and Wood, 2002).
<i>e-Business enables small operators to operate niche businesses whilst obtaining access to a wider customer pool than would otherwise be the case.</i>	<ul style="list-style-type: none"> • G-FX • Lobster • Toast 	<ul style="list-style-type: none"> • This is in line with the findings of research presented in Chapters 2 and 3 and in Appendices A and C (references include: Sterne, 1996; Abell and Lim, 1996; Coccia, 1997; Kalakota and Whinston, 1997; Lawrence, 1997; Bennett, 1997; Poon and Swatman, 1997a; 1999a; 1999b; Puhakainen and Brännback, 1998; Kalakota and Robinson, 1999; Kaplan and Sawhney, 2000; Reimenschneider and Mykytyn, 2000; Turban <i>et al.</i>, 2000; Lee, 2001; Phan, 2001; Wilson, 2001; Daniel and Wilson, 2002; Power and Sohal, 2002; Windrum <i>et al.</i>, 2003; Windrum, 2004; Windrum and Berrenger, 2004).
<i>Lack of financial and other resources hinders growth.</i>	<ul style="list-style-type: none"> • Toast 	<ul style="list-style-type: none"> • SME growth hindered by a lack of financial (and other) resources is addressed in Chapters 2 and 3, and in Appendices B, E and F (Dandridge, 1979; Welch and White, 1981; DeLone, 1988; Bili and Raymond, 1993; Cragg and King, 1993; Gaskill <i>et al.</i>, 1993; Thong <i>et al.</i>, 1993; Gaskill and Gibbs, 1994; Reynolds <i>et al.</i>, 1994; Tidd <i>et al.</i>, 1997; Thong, 1999; 2001; Raymond, 2001).
<i>Interest in e-business and the internet grows as participants start gaining hands-on experience and realise its potential.</i>	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • Comprehensive references for these findings are presented in Chapter 3 and in Appendices B, C and E. (The comprehensive reference list includes: Cragg and King, 1993; Venkatraman, 1994; Lefebvre and Lefebvre, 1993; Geroski, 1995; Iacovou <i>et al.</i>, 1995; Rogers, 1995; Abell and Lim, 1996; Coccia, 1997; Donckels and Lambrecht, 1997; Eden <i>et al.</i>, 1997; Evans and Wurster, 1997; Lawrence, 1997; Poon and Swatman, 1997b; 1997c; Cobbenhagen and Nauwelaers, 1999; Nilsson <i>et al.</i>, 1999; Kaplan and Sawhney, 2000; Reimenschneider and Mykytyn, 2000; Timmers, 2000; Turban <i>et al.</i>, 2000; Engsbo <i>et al.</i>, 2001; Levy <i>et al.</i>, 2001a; 2001b; Mullins <i>et al.</i>, 2001; Porter, 2001; Raymond, 2001; Rayport and Jaworski, 2001; Sathye and Beal, 2001; Tetteh and Burn, 2001; Daniel and Wilson, 2002; Power and Sohal, 2002; Quayle, 2002a; 2002b; Windrum and Berrenger, 2003;

Findings in Line with Research		
Finding	Case Organisation(s)	References
		Windrum, 2004).
Recognition of the potential strategic opportunities offered by embracing e-business with regard to growing their market share.	<ul style="list-style-type: none"> • Berkeley Square Gallery • Design Bridge • Foyles • Toast 	<ul style="list-style-type: none"> • In line with the explanation provided in Chapter 3, and references listed in Appendices A and C (including: Bekker and Staude, 1988; Devins, 1994; Abell and Limm, 1996; Guthrie and Austin, 1996; Quelch and Klein, 1996; Sterne, 1996; Raymond and Bergeron, 1996; Angehrn, 1997; Bennett, 1997; 1998; Cairncross, 1997; Hamill and Gregory, 1997; Julien <i>et al.</i>, 1997; Kalakota and Whinston, 1997; Lawrence, 1997; Poon and Swatman, 1997a; 1997b; 1997c; Poon and Strom, 1997; Currie, 1998; O'Keefe and McEachern, 1998; Puhakainen and Brännback, 1998; Watson <i>et al.</i>, 1998; Peypoch, 1998; APEC, 1999; Kalakota and Robinson, 1999; Leidner, 1999a; 1999b; Shapiro and Varian, 1999; Hawkins and Prencipe, 2000; Turban <i>et al.</i>, 2000; Vescovi, 2000; Martin and Matlay, 2001; Raymond, 2001; Ritchie and Brindley, 2001; Sparkes and Thomas, 2001; Trappey and Trappey, 2001; Quayle, 2002a; Vrazalic <i>et al.</i>, 2002).
Recognition of the potential strategic opportunities offered by embracing e-business with regard to surpassing competitors.	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • Foyles • GF-X • Lobster • Toast 	<ul style="list-style-type: none"> • In line with Chapter 3, and references listed in Appendices A and C on improved competitiveness and customer services (including: Porter and Millar, 1985; Abell and Lim, 1996; Guthrie and Austin, 1996; Sterne, 1996; Auger and Gallagher, 1997; Coccia, 1997; Feinberg and Eastlick, 1997; Poon and Swatman, 1997a; 1997b; 1997c; 1997d; 1999a; 1999b; Kalakota and Whinston, 1997; McKenna, 1997; Currie, 1998; Ghosh, 1998; Radstaak and Ketelaar, 1998; Watson <i>et al.</i>, 1998; Evans and Wurster, 1999; Fraser <i>et al.</i>, 2000; Kaplan and Sawhney, 2000; Timmers, 2000; Vescovi, 2000; Porter, 2001; Rayport and Jaworski, 2001; DTI, 2002a; 2002c; Daniel and Grimshaw, 2002; Power and Sohal, 2002).
Recognition of the potential strategic opportunities offered by embracing e-business with regard to transforming their organisations.	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • G-FX • Lobster • Toast 	<ul style="list-style-type: none"> • In line with research presented in Chapter 3, and references listed in Appendices A and C.
Recognition of the potential strategic opportunities offered by embracing e-business with regard to personalising	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • Lobster 	<ul style="list-style-type: none"> • In line with research presented in Chapter 3 and references in Appendices A and C on improved relations with business partners and customers (including: Blattberg and Deighton, 1991; McWilliams, 1995; Abell

Findings in Line with Research		
Finding	Case Organisation(s)	References
<i>customer relationships.</i>	<ul style="list-style-type: none"> • Toast 	and Lim, 1996; Quelch and Klein, 1996; Stern, 1996; Kalakota and Whinston, 1996; 1997; Auger and Gallagher, 1997; Cairncross, 1997; Feinberg and Eastlick, 1997; McKenna, 1997; Peppers and Rogers, 1997; Poon and Strom, 1997; Poon and Swatman, 1997a; 1997b; 1997c; Brannback and Puhakainen, 1998a; 1998b; Currie, 1998; Gulledge and Sommer, 1998; O'Keefe and McEachern, 1998; Palumbo and Herbig, 1998; Puhakainen and Brännback, 1998; APEC, 1999; Kalakota and Robinson, 1999; Shapiro and Varian, 1999; Hawkins and Prencipe, 2000; Vescovi, 2000; Porter, 2001; Sparkes and Thomas, 2001; Quayle, 2002a; 2002b).
Receiving the following benefits as a result of e-business adoption and implementation: <ul style="list-style-type: none"> • Costs. • Relationships with business partners. • Internal efficiency. • Quality of information as a result of e-business adoption and implementation. 	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • As detailed comprehensively in Chapters 2 and 3 and in Appendices A, B and C (Fuller, 1992; 2000; Goldman <i>et al.</i>, 1995; Mouggayer, 1998; Currie, 1998; Drucker, 1998; Ghosh, 1998; Evens and Wurster, 1999; Violino, 2000; Porter, 2001).
Recognition of and support from senior management considered to be crucial to successful e-business SME adoption and implementation.	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • This attribute is explored in greater detail in Chapters 2 and 3 and in Appendix C.
Recognition and employment of effective strategies to launch, adapt and maintain online operations considered to be crucial to successful e-business SME adoption and implementation.	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • This attribute is explored in greater detail in Chapters 2 and 3 and in Appendix C.

Findings in Line with Research		
Finding	Case Organisation(s)	References
<i>Relevant analysis of the strategic opportunities e-business facilitates considered to be crucial to successful e-business SME adoption and implementation.</i>	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • This attribute is explored in greater detail in Chapters 2 and 3 and in Appendix C.
<i>Comprehensive integration of e-business into the organisations' core activities (which in turn provide opportunities for further transformation) considered to be crucial to successful e-business SME adoption and implementation.</i>	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • This attribute is explored in greater detail in Chapters 2 and 3 and in Appendix C.
<i>Formal planning processes resulted in a more focused approach being adopted.</i>	<ul style="list-style-type: none"> • Foyles • GF-X • Lobster • Toast 	<ul style="list-style-type: none"> • These organisations gained competitive intelligence and ideas by investigating formally their competitors' websites. • The planning process provided a "roadmap." • It enabled them to better exploit their e-business potential, as planning had enabled them to feel that they "knew what to do." This is in line with findings regarding strategic organisational and management attributes presented in Chapters 2 and 3 and in Appendices A, C, E and F.
<i>Tactically, when the case organisations examined in this research looked to begin trading online, they aimed to provide additional channels to market.</i>	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • In line with findings presented in Chapter 2 and in Appendices A and C (Devins, 1994; Guthrie and Austin, 1996; Quelch and Klein, 1996; Sterne, 1996; Hamill and Gregory, 1997; Julien <i>et al.</i>, 1997; Bennett, 1997; 1998; Cairncross, 1997; Kalakota and Whinston, 1997; Lawrence, 1997; Poon and Swatman, 1997a; 1997b; Currie, 1998; O'Keefe and McEachern, 1998; Puhakainen and Brännback, 1998; Watson <i>et al.</i>, 1998; Kalakota and Robinson, 1999; Turban <i>et al.</i>, 2000; Vescovi, 2000; Raymond, 2001; Ritchie and Brindley, 2001; Sparkes and Thomas, 2001; Quayle, 2002a).
<i>Tactically, when the case organisations examined in this research looked to begin trading online, they aimed to increase agility,</i>	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • In line with findings presented in Chapter 3 and in Appendices A and C (Porter and Millar, 1985; Guthrie and Austin, 1996; Sterne, 1996; Feinberg and Eastlick, 1997; Kalakota and Whinston, 1997; McKenna,

Findings in Line with Research		
Finding	Case Organisation(s)	References
<i>responsiveness, and/or the ability to react to changing market conditions (which would in turn increase market share).</i>		1997; Currie, 1998; Ghosh, 1998; Radstaak and Ketelaar, 1998; Watson, <i>et al.</i> , 1998; Evans and Wurster, 1999; Fraser <i>et al.</i> , 2000; Timmers, 2000; Vescovi, 2000; Porter, 2001; Rayport and Jaworski, 2001).
<i>Tactically, when the case organisations examined in this research looked to begin trading online, they aimed to achieve competitive advantage.</i>	• All	• In line with findings presented in Chapter 3 and in Appendices A and C.
<i>Tactically, when the case organisations examined in this research looked to begin trading online, they aimed to transform relationships with customers, suppliers and business partners.</i>	• All	• In line with findings presented in Chapter 3 and in Appendices A and C (Blattberg and Deighton, 1991; McWilliams, 1995; Abell and Lim, 1996; Kalakota and Whinston, 1996; 1997; Quelch and Klein, 1996; Stern, 1996; Auger and Gallagher, 1997; Cairncross, 1997; Feinberg and Eastlick, 1997; McKenna, 1997; Peppers and Rogers, 1997; Poon and Strom, 1997; Poon and Swatman, 1997a; 1997b; 1997c; O'Keefe and McEachern, 1998; Palumbo and Herbig, 1998; Brännback and Puhakainen, 1998a; 1998b; Puhakainen and Brännback, 1998; Currie, 1998; Gullett and Sommer, 1998; APEC, 1999; Kalakota and Robinson, 1999; Shapiro and Varian, 1999; Hawkins and Prencipe, 2000; Vescovi, 2000; Porter, 2001; Sparkes and Thomas, 2001; Quayle, 2002a; 2002b).
<i>Tactically, when the case organisations examined in this research looked to begin trading online, they aimed to redesign their business operations through innovating their organisations.</i>	• All	• In line with findings presented in Chapter 3 and in Appendices A and C (among them: Timmers, 2000; Rayport and Jaworski, 2001).
<i>Tactically, when the case organisations examined in this research looked to begin trading online, they aimed to reduce overheads and costs per transaction.</i>	• All	• In line with findings presented in Chapter 3 and in Appendices A and C (McWilliams, 1995; Abell and Limm, 1996; Raymond and Bergeron, 1996; Angehrn, 1997; Kalakota and Whinston, 1997; Auger and Gallagher, 1997; Coccia, 1997; O'Connor and O'Keefe, 1997; Berg and Karttunen, 1998; Currie, 1998; Radstaak and Ketelaar, 1998; Gullett and Sommer, 1998; Shapiro and Varian, 1998; MacGregor <i>et al.</i> , 1998; APEC, 1999; Hawkins and Prencipe, 2000; Poon and Swatman, 1997a; 1997b; 1997c; Palumbo and Herbig, 1998; APEC, 1999; Fraser <i>et al.</i> , 2000; Turban <i>et al.</i> , 2000; Hawkins and Prencipe, 2000; Kaplan and Sawhney,

Findings in Line with Research		
Finding	Case Organisation(s)	References
		2000; Porter, 2001; Europmedia, 2001; Porter, 2001; Tetteh and Burn, 2000; 2001; Quayle, 2002a; 2002b; Raymond, 2001; Howarth, 2002; Chaston and Mangles, 2002).
<i>The data arising from these case organisations indicates that financial resources are not the leading factor in motivating or inhibiting an SME's adoption of e-business.</i>	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • In line with findings presented in Appendix C (Howard, 1977; Geroski, 1995; Iacovou <i>et al.</i>, 1995; Eden <i>et al.</i>, 1997; Coccia, 1997; O'Connor and O'Keefe, 1997; Tidd <i>et al.</i>, 1997; Drucker, 1998; Poon and Swatman, 1998a; 1998b; Nilsson, 1999; Premkumar and Roberts, 1999; Kaplan and Sawhney, 2000; Turban <i>et al.</i>, 2000; Porter, 2001; Quayle, 2002a; 2002b; Chaston and Mangles, 2002; Raisinghani and Frank, 2003).
<i>Technology acquisition was customer oriented, in that they each sought a customer relationship management solution that consolidated information for better customer support and future sales growth.</i>	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • In line with findings presented in Chapter 3 and Appendices A, B and C (Abell and Lim, 1996; Auger and Gallagher, 1997; Bennett, 1997; 1998; Caldeira and Ward, 2001; 2002; Coccia, 1997; Coombs <i>et al.</i>, 1987; Daniel and Grimshaw, 2002; DTI, 2002a; 2002b; 2002c; Iacovou <i>et al.</i>, 1995; Kalakota and Robinson, 1999; Kalakota and Whinston, 1997; Kaplan and Sawhney, 2000; Kirby and Turner, 1993; Lawrence, 1997; Lee, 2001; Lefebvre and Lefebvre, 1993; Levy <i>et al.</i>, 2001a; 2001b; MacGregor <i>et al.</i>, 1998; Martin, 2001; Nilsson, 1999; Parker and Swatman, 1997; Phan, 2001; Poon and Swatman, 1997a; 1999a; 1999b; Power and Sohal, 2002; Premkumar and Roberts, 1999; Puhakainen and Brännback, 1998; Quayle, 2002a; 2002b; Raisch, 2001; Raymond, 2001; Reimenschneider and Mykytyn, 2000; Rothwell, 1992; Sterne, 1996; Tidd <i>et al.</i>, 1997; Turban <i>et al.</i>, 2000; Webster, 1995; Wilson, 2001; Windrum <i>et al.</i>, 2003; Windrum, 2004; Windrum and Berrenger, 2004; Yap <i>et al.</i>, 1992; Yap and Thong, 1997).
<i>The barrier of e-Business not fitting (seamlessly) with their products/services was experienced.</i>	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. 	<ul style="list-style-type: none"> • A comprehensive list of references of barriers to e-business adoption by SMEs is presented in Appendix E. A similarly comprehensive list of references of the disadvantages of adopting and implementing e-business is presented in Appendix F (Abell and Limm, 1996; Bakos and Brynjolfsson, 2000; Caldiera and Ward, 2001; 2002; Chau and Pederson, 2000; Coombs <i>et al.</i>, 1987; Cragg and King, 1993; Kirby and Turner, 1993; Dixon <i>et al.</i>, 2002; Eid <i>et al.</i>, 2002; Farhoomand <i>et al.</i>, 2000; Iacovou <i>et al.</i>,

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Finding	Case Organisation(s)	References
		1995; Kendall <i>et al.</i> , 2001; Kulmala <i>et al.</i> , 2002; Mehrtens <i>et al.</i> , 2001; Poon and Swatman, 1999a; 1996b; Quayle, 2003; Rogers, 1995; Tambini, 1999; Yap <i>et al.</i> , 1992; Yap and Thong, 1997).
<i>A lack of appropriate business models was experienced.</i>	<ul style="list-style-type: none"> • Berkeley Square Gallery • Toast 	<ul style="list-style-type: none"> • A comprehensive list of references of barriers to e-business adoption by SMEs is presented in Appendix E. A similarly comprehensive list of references of the disadvantages of adopting and implementing e-business is presented in Appendix F (Clarke, 2000; Drew, 2002; Engsbo <i>et al.</i>, 2001; Kotha <i>et al.</i>, 2001; Porter, 2001).
<i>Problems/issues with obtaining approval/raising funds for the investment and adoption costs were experienced.</i>	<ul style="list-style-type: none"> • Berkeley Square Gallery • Design Bridge • Lobster 	<ul style="list-style-type: none"> • A comprehensive list of references of barriers to e-business adoption by SMEs is presented in Appendix E. A similarly comprehensive list of references of the disadvantages of adopting and implementing e-business is presented in Appendix F (Auger and Gallagher, 1997; Barry and Milner, 2002; Chappell and Feindt, 1999; Chau and Pederson, 2000; Dandridge, 1979; DeLone, 1981; 1988; DFAT, 1999; Dixon <i>et al.</i>, 2002; Drucker, 1998; 1999a; 1999b; Eden <i>et al.</i>, 1997; Geroski, 1995; Golden and Griffin, 1999; 2000; Howard, 1977; Iacovou <i>et al.</i>, 1995; Owens and Beynon-Davies, 2001; Porter, 2001; Poon and Swatman, 1996b; Purao and Campbell, 1998; Quayle, 2002a; 2002b; 2003; Ratnasingam, 2000; Roberts and Wood, 2002; SETEL, 2002; Thong, 1999; Tidd <i>et al.</i>, 1997; Welch and White, 1981).
<i>Problems with recognising, sourcing and allocating the relevant resources and skills were experienced.</i>	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • Foyles • Lobster • Toast 	<ul style="list-style-type: none"> • A comprehensive list of references of barriers to e-business adoption by SMEs is presented in Appendix E. A similarly comprehensive list of references of the disadvantages of adopting and implementing e-business is presented in Appendix F (Bunker and MacGregor, 2000; Chau and Hui, 2001; Chau and Pederson, 2000; Cheney <i>et al.</i>, 1986; Cobbenhagen and Nauwelaers, 1999; Davenport, 1992; Dixon <i>et al.</i>, 2002; Ein-Dor and Segev, 1978; Giaglis <i>et al.</i>, 1998; Harrison, 1994; Hill and Stewart, 2000; Iacovou <i>et al.</i>, 1995; Jeffcoate <i>et al.</i>, 2000; 2002; Kirby and Turner, 1993; Lee, 2001; Lee and Runge, 2001; Lefebvre and Lefebvre, 1993; Lefebvre <i>et al.</i>, 1999; Levy <i>et al.</i>, 2001b; Pitt <i>et al.</i>, 1999; Pollard and Hayne, 1998; Poon and Swatman, 1996b; 1997b; 1997c; Porter, 2001; Purao and

Findings in Line with Research		
Finding	Case Organisation(s)	References
		Campbell, 1998; Raymond, 1990b; 1992; 2001; Rothwell, 1991; Runge and Earl, 1988; Sathye and Beal, 2001; Stauber, 2000; Tetteh and Burn, 2001; Westhead and Storey, 1996; Yap and Thong, 1997).
<i>The culture of the company was a barrier to e-business adoption and implementation.</i>	<ul style="list-style-type: none"> • Berkeley Square Gallery • Foyles 	<ul style="list-style-type: none"> • A comprehensive list of references of barriers to e-business adoption by SMEs is presented in Appendix E. A similarly comprehensive list of references of the disadvantages of adopting and implementing e-business is presented in Appendix F (Abell and Limm, 1996; Bakos and Brynjolfsson, 2000; Caldiera and Ward, 2001; 2002; Chau and Pederson, 2000; Coombs <i>et al.</i>, 1987; Cragg and King, 1993; Dixon <i>et al.</i>, 2002; Farhoomand <i>et al.</i>, 2000; Iacovou <i>et al.</i>, 1995; Kirby and Turner, 1993; Kulmala <i>et al.</i>, 2002; Mehrtens <i>et al.</i>, 2001; Nilsson, 1999; Poon and Swatman, 1999a; 1996b; Quayle, 2003; Rogers, 1995; Yap <i>et al.</i>, 1992; Yap and Thong, 1997).
<i>Channel conflict issues were experienced.</i>	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • Foyles • Lobster • Toast 	<ul style="list-style-type: none"> • A comprehensive list of references of barriers to e-business adoption by SMEs is presented in Appendix E. A similarly comprehensive list of references of the disadvantages of adopting and implementing e-business is presented in Appendix F (Abell and Limm, 1996; Bakos and Brynjolfsson, 2000; Blattberg and Deighton, 1991; Brännback and Puhakainen, 1998a; 1998b; Chau and Pederson, 2000; Dixon <i>et al.</i>, 2002; Eid <i>et al.</i>, 2002; Farhoomand <i>et al.</i>, 2000; Iacovou <i>et al.</i>, 1995; Kalakota and Robinson, 1999; Kendall <i>et al.</i>, 2001; Lawrence, 1997; Lee, 2001; MacGregor <i>et al.</i>, 1998; 2004; Mehrtens <i>et al.</i>, 2001; Peppers and Rogers, 1997; Poon and Swatman, 1999a; 1996b; Quayle, 2003; Raymond, 2001; Rogers, 1995; Shapiro and Varian, 1999; Stauber, 2000; Tambini, 1999; Tetteh and Burn, 2000; 2001; Yap and Thong, 1997; Zimmerman and Mathiesen, 1998).
<i>Lack of technical, operational and/or business management skills were a hindrance to e-business adoption and implementation.</i>	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • Lobster 	<ul style="list-style-type: none"> • A comprehensive list of references of barriers to e-business adoption by SMEs is presented in Appendix E. A similarly comprehensive list of references of the disadvantages of adopting and implementing e-business is presented in Appendix F (Abell and Limm, 1996; Bakos and Brynjolfsson, 2000; Bunker and MacGregor, 2000; Chau and Pederson, 2000; Dixon <i>et al.</i>, 2002; Evans and Wurster, 2000; Farhoomand <i>et al.</i>, 2000;

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Finding	Case Organisation(s)	References
		Giaglis <i>et al.</i> , 1998; Iacovou <i>et al.</i> , 1995; Jeffcoate <i>et al.</i> , 2002; Kalakota and Robinson, 1999; Mehrrens <i>et al.</i> , 2001; Pollard and Hayne, 1998; Poon and Swatman, 1999a; 1996b; Quayle, 2003; Rogers, 1995).
Uncertainty about adequate levels of acceptance by suppliers and/or consumers were experienced.	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • Lobster 	<ul style="list-style-type: none"> • A comprehensive list of references of barriers to e-business adoption by SMEs is presented in Appendix E. A similarly comprehensive list of references of the disadvantages of adopting and implementing e-business is presented in Appendix F (Abell and Limm, 1996; Bakos and Brynjolfsson, 2000; Blattberg and Deighton, 1991; Brännback and Puhakainen, 1998a; 1998b; Caldiera and Ward, 2001; 2002; Coombs <i>et al.</i>, 1987; Cragg and King, 1993; Dixon <i>et al.</i>, 2002; Kalakota and Robinson, 1999; Kirby and Turner, 1993; Kulmala <i>et al.</i>, 2002; Lawrence, 1997; Lee, 2001; Levy <i>et al.</i>, 2001a; 2001b; Peppers and Rogers, 1997; Poon and Swatman, 1997b; 1997c; Porter, 2001; Puhakainen and Brännback, 1998; Raymond, 2001; Rogers, 1995; Shapiro and Varian, 1999; Stauber, 2000; Tetteh and Burn, 2001; Webster, 1995; Yap <i>et al.</i>, 1992; Yap and Thong, 1997).
e-Business didn't fit with the way their customers perceived their business.	<ul style="list-style-type: none"> • Berkeley Square Gallery • Foyles 	<ul style="list-style-type: none"> • A comprehensive list of references of barriers to e-business adoption by SMEs is presented in Appendix E. A similarly comprehensive list of references of the disadvantages of adopting and implementing e-business is presented in Appendix F (Abell and Limm, 1996; Bakos and Brynjolfsson, 2000; Blattberg and Deighton, 1991; Caldiera and Ward, 2001; 2002; Coombs <i>et al.</i>, 1987; Cragg and King, 1993; Dixon <i>et al.</i>, 2002; Kalakota and Robinson, 1999; Kirby and Turner, 1993; Peppers and Rogers, 1997; Poon and Swatman, 1997b; 1997c; Porter, 2001; Puhakainen and Brännback, 1998; Raymond, 2001; Stauber, 2000; Tetteh and Burn, 2001; Webster, 1995; Yap <i>et al.</i>, 1992; Yap and Thong, 1997).
The advantage(s) of using e-business couldn't be seen.	<ul style="list-style-type: none"> • Design Bridge 	<ul style="list-style-type: none"> • A comprehensive list of references of barriers to e-business adoption by SMEs is presented in Appendix E. A similarly comprehensive list of references of the disadvantages of adopting and implementing e-business is presented in Appendix F (Blattberg and Deighton, 1991; Brännback and Puhakainen, 1998a; 1998b; Kalakota and Robinson, 1999; Lawrence,

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Finding	Case Organisation(s)	References
		1997; Lee, 2001; Levy <i>et al.</i> , 2001a; 2001b; Peppers and Rogers, 1997; Poon and Swatman, 1997b; 1997c; Porter, 2001; Puhakainen and Brännback, 1998; Raymond, 2001; Shapiro and Varian, 1999; Stauber, 2000; Tetteh and Burn, 2001; Webster, 1995).
Customer education was needed.	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • G-FX • Lobster 	<ul style="list-style-type: none"> • A comprehensive list of references of barriers to e-business adoption by SMEs is presented in Appendix E. A similarly comprehensive list of references of the disadvantages of adopting and implementing e-business is presented in Appendix F (Blattberg and Deighton, 1991; Brännback and Puhakainen, 1998a; 1998b; Kalakota and Robinson, 1999; Peppers and Rogers, 1997; Raymond, 2001; Shapiro and Varian, 1999; Stauber, 2000).
Development and operational issues such as disintermediation was experienced by the case organisations.	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • Design Bridge • G-FX • Lobster 	<ul style="list-style-type: none"> • In line with the findings of research presented in Appendices E and F (Blattberg and Deighton, 1991; Webster, 1995; Lawrence, 1997; Peppers and Rogers, 1997; Poon and Swatman, 1997b; 1997c; Puhakainen and Brännback, 1998; Kalakota and Robinson, 1999; Stauber, 2000; Lee, 2001; Levy <i>et al.</i>, 2001a; 2001b; Porter, 2001; Raymond, 2001; Tetteh and Burn, 2001).
Resistance at various levels (such as suppliers declining to provide products to purely online operations, supplier scepticism and reluctance to deliver directly to customers, a general lack of acceptance by suppliers and/or existing or potential customers, and channel conflicts).	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • Design Bridge • Lobster 	<ul style="list-style-type: none"> • In line with references presented in Appendix E (Clarke, 2000; Engsbo <i>et al.</i>, 2001; Kotha <i>et al.</i>, 2001; Porter, 2001; Drew, 2002).
Difficulties with the implementation of business strategies (a lack of clear linkage between the organisation's business skills with the organisation's business strategies and the technology adopted).	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • Design Bridge • G-FX • Lobster 	<ul style="list-style-type: none"> • In line with the findings of research presented in Chapter 2 and in Appendices E and F (Iacovou <i>et al.</i>, 1995; Poon and Swatman, 1996b; Tidd <i>et al.</i>, 1997; Eden <i>et al.</i>, 1997; Auger and Gallagher, 1997; Chappell and Feindt, 1999; DFAT, 1999; Drucker, 1998; 1999a; 1999b; Purao and Campbell, 1998; Thong, 1999; Golden and Griffin, 1999; 2000; Chau and Pederson, 2000; Ratnasingam, 2000; Owens and Beynon-Davies, 2001; Porter, 2001; Barry and Milner, 2002; Dixon <i>et al.</i>, 2002; Roberts and Wood, 2002; SETEL, 2002; Quayle, 2002a; 2002b; 2003).
Lack of breadth in	<ul style="list-style-type: none"> • Berkeley Square 	<ul style="list-style-type: none"> • In line with the list of research references

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Finding	Case Organisation(s)	References
<i>business skills and a lack of awareness of the range of other skills necessary to run an e-business.</i>	<ul style="list-style-type: none"> Gallery Design Bridge Toast 	presented in Appendices E and F (Iacovou <i>et al.</i> , 1995; Poon and Swatman, 1996b; 1997a; 1997b; Auger and Gallagher, 1997; Tidd <i>et al.</i> , 1997; Yap and Thong, 1997; Berg and Karttunen, 1998; Purao and Campbell, 1998; Zimmerman and Mathiesen, 1998; Chau and Pederson, 2000; Farhoomand <i>et al.</i> , 2000; Mirchandani and Motwani, 2001; Barry and Milner, 2002; Dixon <i>et al.</i> , 2002; Roberts and Wood, 2002).
<i>Operational issues, which varied according to each case organisation's. Technical difficulties arose in developing, implementing and operating the websites and systems. As a result, some of the case organisations (eg. Berkeley Square Gallery and Lobster) failed to maintain a continual program of website and system integration/innovation.</i>	<ul style="list-style-type: none"> Berkeley Square Gallery Lobster (outsourced core functions to obtain best practice levels of performance) G-FX (considered it essential to keep core functions in-house) 	<ul style="list-style-type: none"> In line with research findings presented in Chapter 3 and the list of references presented in Appendices E and F (Murphy, 1996; Lawrence, 1997; MacGregor <i>et al.</i>, 1998; 2004; Zimmerman and Mathiesen, 1998; Berg and Karttunen, 1998; Ritchie <i>et al.</i>, 1999; Stauber, 2000; Tetteh and Burn, 2000; 2001; Lee, 2001; Porter, 2001; Sparkes and Thomas, 2001).
<i>The costs required to attract customers exceeded expectations.</i>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> In line with research findings presented in Chapter 3 and the list of references presented in Appendices E and F (Murphy, 1996; MacGregor <i>et al.</i>, 1998; Ritchie <i>et al.</i>, 1999; Stauber, 2000; Lee, 2001; Porter, 2001; Sparkes and Thomas, 2001).
<i>The requirement for ongoing funding for maintenance, expansion, and to cover operational losses.</i>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> In line with research findings presented in Chapter 3 and the list of references presented in Appendices E and F (Berg and Karttunen, 1998; MacGregor <i>et al.</i>, 1998; 2004; Sparkes and Thomas, 2001).
<i>The necessity to revise and expand the initial business models and strategies employed.</i>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> In line with findings presented in Chapter 3 and in Appendices E and F (Giaglis <i>et al.</i>, 1998; Pollard and Hayne, 1998; Jeffcoate and Robinson, 1999; Bunker and MacGregor, 2000; Evens and Wurster, 2000).
<i>Unreliable strategic partners.</i>	<ul style="list-style-type: none"> Berkeley Square Gallery Lobster 	<ul style="list-style-type: none"> In line with findings presented in Chapter 3 and in Appendices E and F (Blattberg and Deighton, 1991; Peppers and Rogers, 1997; Brannback and Puhakainen, 1998a; 1998b; Kalakota and Robinson, 1999; Shapiro and Vaian, 1999; Stauber, 2000; Raymond, 2001).
<i>Operating costs (although many of these costs were not technology investment costs per se, but rather human resource issues,</i>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> In line with findings presented in Chapter 3 and in Appendices E and F (Murphy, 1996; MacGregor <i>et al.</i>, 1998; Ritchie <i>et al.</i>, 1999; Stauber, 2000; Lee, 2001; Porter, 2001; Sparkes and Thomas, 2001).

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<i>such as staff training/re-training, and the costs of acquiring employees with new skills).</i>		Sparkes and Thomas, 2001).
<i>Initially experienced difficulty locating IT providers they felt could trust to help them translate their businesses online / elected to take back design and maintenance to some extent, because online operations became an integral part of their business.</i>	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • G-FX 	<ul style="list-style-type: none"> • These findings are consistent with those of Ballantine <i>et al.</i> (1998) and Billi and Raymond (1993), as presented in Chapter 2.
<i>The lack of assessment methodologies to gauge the costs of e-business relative to its performance.</i>	<ul style="list-style-type: none"> • Berkeley Square Gallery • Design Bridge • Foyles • Lobster • Toast 	<ul style="list-style-type: none"> • In line with findings presented in Chapter 3 and in Appendices E and F (Poon and Swatman, 1996b; 1997b; 1997c; Giaglis <i>et al.</i>, 1998; Pollard and Hayne, 1998; Purao and Campbell, 1998; Cobbenhagen and Nauwelares, 1999; Lefebvre <i>et al.</i>, 1999; Pitt <i>et al.</i>, 1999; Stauber, 2000; Bunker and MacGregor, 2000; Chau and Pederson, 2000; Hill and Stewart, 2000; Jeffcoate <i>et al.</i>, 2000; 2002; Chau and Hui, 2001; Lee, 2001; Lee and Runge, 2001; Levy <i>et al.</i>, 2001b; Porter, 2001; Sathye and Beal, 2001; Tetteh and Burn, 2001; Raymond, 2001; Dixon <i>et al.</i>, 2002).
<i>Determining ways to add value as margins grow slimmer.</i>	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • In line with findings presented in Chapter 3 and in Appendices E and F (Murphy, 1996; MacGregor <i>et al.</i>, 1998; Ritchie <i>et al.</i>, 1999; Stauber, 2000; Lee, 2001; Sparkes and Thomas, 2001; Porter, 2001).
<i>The emergence of new forms of delivery.</i>	<ul style="list-style-type: none"> • Davis & Co. • Foyles • G-FX • Lobster 	<ul style="list-style-type: none"> • In line with findings presented in Chapter 3 and in Appendices E and F (Coombs <i>et al.</i>, 1987; Yap <i>et al.</i>, 1992; Cragg and King, 1993; Kirby and Turner, 1993; Rogers, 1995; Abell and Limm, 1996; Yap and Thong, 1997; Bakos and Brynjolfsson, 2000; Caldiera and Ward, 2001; 2002; Dixon <i>et al.</i>, 2002; Kulmala <i>et al.</i>, 2002).
<i>Complacency.</i>	<ul style="list-style-type: none"> • Berkeley Square Gallery • Davis & Co. • Toast 	<ul style="list-style-type: none"> • In line with research findings presented in Chapter 3 and the list of references presented in Appendices E and F (Poon and Swatman, 1996b; 1997b; 1997c; Westhead and Storey, 1996; Yap and Thong, 1997; Pollard and Hayne, 1998; Giaglis <i>et al.</i>, 1998; Purao and Campbell, 1998; Purao and Campbell, 1998; Cobbenhagen and Nauwelares, 1999; Lefebvre <i>et al.</i>, 1999; Pitt <i>et al.</i>, 1999; Bunker and MacGregor, 2000; Chau and Pederson, 2000; Hill and Stewart, 2000;

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Finding	Case Organisation(s)	References
		Stauber, 2000; Jeffcoate <i>et al.</i> , 2000; 2002; Lee, 2001; Lee and Runge, 2001; Levy <i>et al.</i> , 2001b; Chau and Hui, 2001; Porter, 2001; Raymond, 2001; Sathye and Beal, 2001; Tetteh and Burn, 2001; Dixon <i>et al.</i> , 2002).
<i>Staff resistance to change.</i>	<ul style="list-style-type: none"> Berkeley Square Gallery Foyles 	<ul style="list-style-type: none"> In line with research findings presented in Chapter 3 and the list of references presented in Appendices E and F (Lee, 2001; MacGregor <i>et al.</i>, 2004).
<i>Powerful trading partners seem to be accepted as technology leaders more readily than were governments.</i>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> In Chapter 3, examples of EDI and VAN platforms were offered as examples of this scenario. EDI was widely implemented by SMEs, but was usually facilitated, accessed and utilised by larger organisations due to its high implementation costs. Many e-business solutions that connect to the system(s) of larger organisations occur as a result of pressure from the larger (and often more powerful) corporate partner to do so (Webster, 1995; Parker and Swatman, 1997). In some cases, SMEs are forced to become interdependent (eg. an SME supplier to a major corporation is pressured to install EDI in order to maintain its business with that organisation) (Webster, 1995). SMEs are typically in a poor power position in relation to their larger counterparts (Webster, 1995).
<i>Fewer government interventions were recommended by the case organisation principals in the e-business area than in other areas where government provided other business support.</i>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> This is consistent with the findings presented in Chapters 2, 3 and 4 and in Appendices A, C, E and F, possibly because they were unfamiliar with government e-business initiatives and contributions (Eindor and Segev, 1978; Welch and White, 1981; Pahl, 1984; Weber, 1985; Oakey, 1985; Raymond, 1985; 1989; 1990b; Cheney <i>et al.</i>, 1986; Clegg, 1990; Cornford <i>et al.</i>, 1991; Granovetter, 1992; Reynolds <i>et al.</i>, 1994; Mulhern, 1995; Thompson and McHugh, 1995; Murphy, 1996; Westhead and Storey, 1996; Chen and Williams, 1998; Bunker and MacGregor, 2000; Gibb, 2000; Smallbone <i>et al.</i>, 2000; Castleman <i>et al.</i>, 2000; Castleman and Coulthard, 2001; Curran and Blackburn, 2001; Thong, 2001; Tatnall and Burgess, 2001).
<i>The tendency of SMEs to prefer existing sources of advice rather than government-sponsored advisors.</i>	<ul style="list-style-type: none"> All 	<ul style="list-style-type: none"> This suggests that even considerable specific SME e-business adoption and implementation support efforts will not necessarily gain great adherence from time-strapped SMEs who are in the process of adoption and implementation of e-business and, at the very least, are somewhat

Findings in Line with Research		
Finding	Case Organisation(s)	References
		mistrustful of government. Section 4.3 of Chapter 4, entitled <i>Why Aren't SMEs Accessing the Help that's Available?</i> explains this issue in some detail.
<i>The participation rate of SME owner/managers in the suggested workshop(s) would (likely) be higher than the rate of respondents to questionnaires.</i>	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • It was shown in Chapters 1 and 4 that government departments and agencies employ a range of feedback techniques to ascertain the needs of the SME community. Such feedback is obtained mainly from large-scale multiple-choice surveys. These have a number of disadvantages. For instance, checkbox ticks determine the SBS and Business Link service satisfaction levels. This approach is likely to bring about skewed results, as on the one hand, these agencies serve only those SMEs that approach them (statistically a very small proportion); on the other, the SME owner/manager might be being polite and marking up – customers cannot always gauge what a service should be delivering (and therefore what they should expect), and respondents in such scenarios tend to mark up, rather than down. Multiple choice questionnaire responses also have a number of additional disadvantages: <ul style="list-style-type: none"> ○ A very low response rate. ○ Answers that are shaped by the multiple-choice format. An additional problem with multiple-choice questionnaires is that the questions are often formulated by government (or their agencies) to meet targets and satisfaction objectives (SBS, 2004a; 2004b).
<i>Further research is considered to be needed in order to test the hypothesis of my proposed workshop(s) in an attempt to generate more appropriate policies for SMEs.</i>	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • A goal directly in line with those stated by the SBS, the FSB, the DTI and the EU. Evidence for this is presented in Chapter 5, and also to the following relevant references: SBS, 2003c; FSB, 2002a; DTI, 1999; 2001; 2002c; European Commission, 2002a; 2002b.

Table A.15 – Findings in Line with Research

Appendix P

Findings Arising From The Case Studies Not in Line with the Literature Review

Findings Not in Line with Research		
Findings	Case Organisation(s)	References
<i>The firm has a proven track record of dealing with computer contracts, both for customers and for suppliers, and assists others.</i>	<ul style="list-style-type: none"> • Davis & Co. • G-FX (although the company was a start-up, its CEOs and senior managers had) 	<ul style="list-style-type: none"> • This is not in line with the usual experience of SMEs, according to the findings of research presented in Chapters 2 and 3.
<i>The level of growth experienced by the case organisations is uncharacteristic of the SME sector as a whole.</i>	<ul style="list-style-type: none"> • All 	<ul style="list-style-type: none"> • In line with the explanation tendered in Chapter 2 that SMEs are less likely to expand than large businesses (Churchill and Lewis, 1983; Disney <i>et al.</i>, 2000; Dale and Morgan, 2001; SBS, 2004b). It was also presented in that chapter that most job creation in the UK SME sector comes from start-ups rather than from the expansion of existing businesses (DeLone, 1981; 1988; Cooley <i>et al.</i>, 1987; Martin, 1989; DTI, 1993a; 1993b). However, it was also noted that some researchers (among them: Kim and Lee, 1998; Kennedy and Healy, 1985) found that the "greater volatility" of SMEs translates to higher gains, losses and closures than for larger organisations. This volatility is illustrated by small businesses being responsible for around 66% of UK job losses (SBS, 2004b).
<i>These case study principals also felt that many of the systems and practices they needed to operate effectively online were already in place before making the decision to launch online operations. They believed that, as a result, they would be subject to fewer operating costs than their competitors (this, however, has not proved to be the case in any of the case organisations).</i>	<ul style="list-style-type: none"> • Berkeley Square Gallery • Design Bridge • Foyles • Toast 	<ul style="list-style-type: none"> • This outcome of adopting and implementing e-business is featured in Appendix F (Murphy, 1996; MacGregor <i>et al.</i>, 1998; Ritchie <i>et al.</i>, 1999; Stauber, 2000; Lee, 2001; Porter, 2001; Sparkes and Thomas, 2001).

Findings Not in Line with Research		
Findings	Case Organisation(s)	References
<i>Staff will usually only move on to another firm for a substantial pay rise, not career progression.</i>	<ul style="list-style-type: none"> Berkeley Square Gallery 	<p>This is in line with the following findings:</p> <ul style="list-style-type: none"> SMEs generally pay lower wages, as presented in Chapter 2 and Appendix B (Gunningle and Grady, 1984; Kennedy and Healy, 1985; McMahon, 1994). SMEs generally don't train staff, as presented in Chapter 2 and the comprehensive reference lists provided in Appendices B, E and F (which include: Hitchens and O'Farrell, 1988; Bili and Raymond, 1993; Reynolds <i>et al.</i>, 1994; Bunker and MacGregor, 2000). People with management potential "do not tend to stay" with the gallery, as they are offered "no opportunity of promotion." The gallery is too small to offer an upward career path to ambitious staff – a problem shared by many SMEs, as has been shown in Chapter 2 and Appendix B (Gunningle and Grady, 1984; McMahon, 1994; Kennedy and Healy, 1985; Bili and Raymond, 1993; Dennis, 2000).

Table A.16 – Findings Not in Line with Research

Acronyms and Abbreviations

BAH – Booz | Allen | Hamilton

B2B – business-to-business – commercial activity between two or more organisations, or the use of ICT to facilitate payment management, inventory management and distribution management. The B2B model has become the most significant form of e-procurement, in terms of growth, volume and financial impact of the e-business models (Addo *et al.*, 2003). The B2B sector provides the most opportunity for exploitation, especially in the supply chain, where B2B activity is concentrated.

B2C – business-to-consumer – commercial activity between businesses and consumers, or the use of e-business to enable customer information interaction, personal finance management, purchasing products and the dissemination of after-sales information (Rayport and Jaworski, 2001).

BADA – The British Antique Dealers' Association

BAMF – The British Art Market Federation

BLO – Business Link Operator

BT – British Telecom

C2B – consumers-to-business – the banding together of consumers who present themselves as a buyer group to businesses (Rayport and Jaworski, 2001).

C2C – consumer-to consumer – electronic exchanges between and among consumers (eg. auctions mediated by third parties such as eBay.com).

CAD – Computer-Aided Design

CBI – Confederation of British Industry

CBIS – Computer-based Information Systems

CBR – Case-Based Reasoning

CINOA – The Confédération Internationale des Négociants en Oeuvres d'Art

CIS – Community Innovation Survey

COP – Case Organisation Principal

CREA – Capital Risque pour les Entreprises d'Amorçage – provides seed capital to cover part of the operating costs of an organisation during the start-up phase.

CURDS – Centre for Urban and Regional Development Studies

DEEDS – Digital Economy Policies Exchange & Development for SMEs

DEFRA – Department for Environment, Food and Rural Affairs

DFAT – Department of Foreign Affairs and Trade

DTI – Department of Trade and Industry

EBPG – e-Business Policy Group

e-Business – those business activities related to the business operations of an organisation over the internet. e-Business encompasses all commercial activities. The definition of e-business that was agreed by the Organisation for Economic Co-operation and Development (OECD) and the EU is the method by which the order is placed which determines whether a transaction is e-business, not the payment or delivery channels. Shifting business activities from paper-based, local, face-to-face and manual processes to electronic, dispersed, mediated and automatic processes is the essence of e-business, whether in dealing with customers or suppliers (Wilkins *et al.*, 1999). e-Business activities include, but are not limited to:

- Website
- Email order confirmation
- Intranet
- Email
- E-procurement
- Web catalogues
- Staff remote online ERP via web
- Trading exchanges
- Internet auctions
- B2C
- Online ordering on our ERP
- View orders on ERP online

e-Commerce – those business activities related to the actual buying and selling of goods and services among organisations over the internet. e-Commerce has been defined as “the buying and selling of information, products and services via computer networks” (Kalakota and Whinston, 1996: 1) or the application of ICTs with the aim of increasing the effectiveness of the business relationships between trading partners (Kalakota and Whinston, 1997). e-Commerce systems can be divided according to whether or not it is internally and externally integrated (Kalakota and Whinston, 1996). Internal integration refers to processes and systems within an organisation, while external integration refers to the integration of processes and systems with other organisational partners. Types of external integration have previously included EDI systems, but the advent of the internet has created new systems for B2B and B2C e-business.

EAI – Enterprise application integration systems – allow disparate computer systems of different firms to communicate with each other and share relevant business information.

e-distribution – a critical component of the supply chain for most organisations.

EDI – Electronic Data Interchange – the computer-to-computer exchange of data (eg. Invoices) in a structured format that enables the automatic processing of data without manual intervention. EDI is based on a trust relationship between an organisation and its partners or between an organisation and a value-added network (VAN) provider that handles the access, security, and other issues related to EDI transmissions. Certain inherent characteristics of EDI discourage unauthorised access into the network by non-EDI partners, including the stringent data formatting requirements for specific industries and the secure, dedicated nature of EDI transmissions between specific trusted partners.

EIMS – European Innovation Monetary System

e-Government – the use by government agencies of ITs that have the ability to transform relations with citizens, businesses and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions (World Bank, 2002).

e-marketplace – the arena within which businesses conduct internet-mediated B2B trade. Within this arena, suppliers can advertise and market their products and services.

e-procurement – Purchasing in the e-marketplace – The e-procurement process involves the following steps:

- *Search* – such as the ability to search online for appropriate suppliers, contacts, brochures, etc;
- *Qualify* – such as online research of company background, credit history, comparisons with competitors, etc;
- *Negotiate* – such as negotiating the price, credit terms, quality, timing, etc;
- *Purchase* – such as ordering the product, initiating the purchase order and entering the information into the system;
- *Invoicing* – such as receiving the invoice and matching the purchase order, entering the information into the financial and production systems;
- *Shipping* – such as the shipping and delivery of goods, entering the information into the shipper's tracking system; and
- *Remittance payment* – such as receiving goods, verifying and correcting invoice, sending payment, and entering the record into the system, and providing online after-sales support (Laudon and Traver, 2001).

ERDF – European Regional Development Funds

ESF – European Social Funds

EU – European Union

FP5 – Fifth Framework Programme

FP6 – Sixth Framework Programme

FEAG – The Federation of European Art Galleries

FSB – Federation for Small Business

G8GIS – G8 Global Information Society

G2B – Government to Business – the interaction between government and business enterprises.

G2C – Government to Consumer – the interaction between government and citizens.

G2G – Government to Government – the interaction between inter-governmental agencies.

GF-X – Global Freight Exchange

HMSO – Her Majesty’s Stationery Office

IAP – Information Age Partnership

IASTD – International Association of Science and Technology for Development

ICT – Information and Communication Technologies

IEI – Internet Economy Indicators

IFLN – International Freight Logistics Network

IFPDA – International Fine Print Dealers Association

Intra-business – the use of ICTs to share information internally within an organisation

IMT – Innovation Management Technique

IP – Intellectual Property

IR – Inland Revenue

IS – Information Systems – An information system has been described as “a system to collect, process, store, transmit, and display information” (Avison and Wood-Harper, 1990: 3).

IT – Information Technology

JCESB – Joint Committee on Enterprise and Small Business

JEV – Joint European Venture – Trans-national joint ventures within the European Union that provide funding for SMEs

LAs – Local Authorities

LAPADA – The Association of Art and Antique Dealers

LFG – Local Futures Group

LSP – Local Strategic Partnership

M&A – Mergers and Acquisitions

MIEC – Ministry of Industry, Employment and Communications

NOIE – The National Office for the Information Economy

OECD – Organisation for Economic Co-operation and Development

ONS – Office for National Statistics

OofE – Office of the e-Envoy

NRC – National Research Council

RDA – Regional Development Agency

RIS – Regional Innovation Strategy

RITTS – Regional Innovation and Technology Transfer Infrastructures and Strategies

RTT – Regional Technology Transfer Projects

SBC – Small Business Council

SBS – Small Business Service

SDP – Strategic Data Planning

SenU – Social Enterprise Unit

SETEL – Small Enterprise Telecommunications Centre

SIS – Strategic Information Systems

SISP – Strategic Information Systems Planning

SLAD – Society of London Art Dealers

SME – Small- and Medium-Sized Enterprises

SSM – Soft Systems Methodology

TIP – Technological Infrastructure Policy

TUC – Trades Union Congress

UK – United Kingdom

VAN – Value Added Network

References

- Abell, W. and Limm, L. (1996). *Business Use of the Internet in New Zealand: An Exploratory Study*. <http://www.scu.edu.au/sponsored/ausweb96> (Accessed 21 June, 2002).
- Accenture. (2001). *e-government leadership: Rhetoric vs Reality – Closing the Gap*. http://www.accenture.com/xd/xd.asp?it=enweb&xd=industries%5Cgovernment%5Cgove_study.xml (Accessed 31 January 2003)
- Achrol, R.S. and Kotler, P. (1999). "Marketing in the Network Economy" in *Journal of Marketing*. 63, pp.146–163.
- Acs, Z.J. (1999). "Public policies to support new technology-based firms" in *Science and Public Policy*. 26, pp.247–257.
- Acs, Z.J. and Audretsch, D.B. (1991). "Innovation and technological change: an overview" in Acs, Z. and Audretsch, D.B. (Eds.), *Innovation and technological change: an international comparison*. University of Michigan Press, Ann Arbor.
- Addo, B.A., Chen, M.M. and Leu, Y.-Y. (2003). "B2B e-commerce in the United States, Europe, and Japan: a comparative study" in *Journal of the Academy of Business and Economics*. March. http://www.findarticles.com/p/articles/mi_m0OGT/is_1_2/ai_113563640 (Accessed 6 July 2004).
- Alavi, M. and Carlson, P. (1992). "A review of MIS research and disciplinary development" in *Journal of Management Information Systems*. 8(4), pp.45–62.
- Aldridge A., White, M. and Forcht K. (1997). "Security Considerations of Doing Business via the Internet: Cautions to be Considered" in *Internet Research-Electronic Networking Applications and Policy*. 7(1), pp.9–15.
- Almus, M. and Nerlinger, E.A. (1999). "Growth of new technology-based firms: which factors matter?" in *Small Business Economics*. 13, pp.141–154.
- Alter, S. (2001). "Recognising the relevance of IS research and broadening the appeal and applicability of future publications" in *Communications of the Association for Information Systems*. 6(3), March.
- Amidon, D. (1993). "Knowledge Innovation: The Common Language" in *Journal of Technology Studies*. Epsilon Pi Tau, Fall, 1993.
- Amidon, D.M. and Mahdjoubi, D. (1999). "Atlas of Knowledge Innovation: Beyond Business Planning" in *Year 2000 Handbook of Business Strategy: A Comprehensive Resource Guide to Strategic Management*. Faulkner & Gray. <http://www.entovation.com/whatsnew/atlas1.htm> (Accessed 21 June, 2002).
- Anderson/Growth Plus. (2001). *Not Just Peanuts*. <http://www.notjustpeanuts.com/introduction.htm> (Accessed 4 October 2003).
- Anderson Consulting. (1999). *eEurope Takes Off*. Anderson Consulting, London.

-
- Angehrn, A.A. (1997). "Designing Mature Internet Business Strategies: The ICDT Model" in *European Management Journal*. 15(4), pp.361-369.
- Antonelli, C. (1999). *The microeconomics of technological systems*. Oxford University Press, Oxford.
- APEC (Asia Pacific Economic Cooperation). (1999). "SME Electronic Commerce Study (TEL 05/97T)" in *Final Report*. Telecommunications Working Group, Business Facilitation Steering Group.
- Appelbaum, Ralph. (1995). *Anthropology, history, and the changing role of the museum*. Lecture delivered at the International Conference on Anthropology and the Museum, Taiwan Museum, Taipei. <http://www.raany.com/lectures.html> (Accessed 13 July 1998).
- Argyris, C., Putnam, R. and Smith, D. (1985). *Action Science: Concepts, Methods and Skills for Research and Intervention*. Jossey-Bass, San Francisco, CA.
- Argyris, C. and Schon, D.A. (1991). "Participatory Action Research and Action Science Compared" in Whyte, W.F. (Ed.), *Participatory Action Research*. Sage, Newbury Park, CA.
- Arora, A. and Gambardella, A. (1994). "The Changing Technology of Technological Change: General and Abstract Knowledge and the Division of Innovative Labour" in *Research Policy*. 23, pp.523-532.
- Arundel, A., Demandt, E., Steinmueller, W. E. and Malo, S. (1997). *Should SMEs patent more? Results of a survey and interview study of Dutch small and medium-sized enterprises*. Maastricht: MERIT.
- Atkinson, J. and Hurstfield, J. (2004). *Small Business Service Annual Survey of Small Businesses: UK 2003*. Institute of Employment Studies. Small Business Service, Brighton. www.sbs.gov.uk/content/analytical/sbsannualsmesurvey2003.pdf (Accessed 29 July 2004).
- Attewell, P. and Rule, J. (1991). "Survey and other Methodologies Applied to IT Research: Experiences from a Comparative Study of Business Computing" in Kraemer, K. (Ed.), *The Information Systems Research Challenge: Survey Research Methods*. Harvard Business School Research Colloquium, Boston, MA.
- Audretsch, D., van Leeuwen, G., Menekveld, B. and Thurik, R. (2001). "Market Dynamics in the Netherlands: Competition Policy and the Role of Small Firms" in *International Journal of Industrial Organisation*. 19, pp.795-821.
- Auger, P. and Gallagher, J.M. (1997). "Factors Affecting Adoption of an Internet-based Sales Presence for Small Businesses" in *The Information Society*. 13(1), pp.55-74.
- Avgerou, C. (2000). "IT and organisational change: an institutional perspective" in *Information, Technology & People*. 13(4), pp.234-262.
- Avgerou, C. and Lebre La Rovere, R. (2003). *Information Systems and the Economics of Innovation*. Edward Elgar: Cheltenham, UK.
- Avison, D.E. (1993). "Research in information systems development and the discipline of information systems" in *Proceedings of the 4th Australian Conference on Information Systems*, University of Queensland, Brisbane.
- Avison, D., Baskerville, R. and Myers, M. (2001). "Controlling action research projects" in *Information, Technology & People*. 14(1), 2001, pp.28-45.
-

-
- Avison, D. and Fitzgerald, G. (2003). *Information Systems Development: Methodologies, Techniques and Tools*. McGraw-Hill, London.
- Avison, D., Lau, F., Myers, M. and Nielsen, P.A. (1997). "Action Research" in *Communications of the ACM*. 42(1), pp.94-7.
- Avison, D.E. and Myers, M.D. (1995). "Information Systems and Anthropology: an anthropological perspective on IT and organisational culture" in *Information Technology & People*. 8(3), pp.43-56.
- Avison, D.E., Powell, P., Keen, P., Klein, J.H. and Ward, S. (1995). "Addressing the need for flexibility in information systems" in *Journal of Management Systems*. 7(2), pp.43-60.
- Avison, D.E. and Wood-Harper, A.T. (1998). "A further exploration into information systems development: the evolution of Multiview2" in *Information Technology and People*. 11(2), pp.124-139.
- Avison, D.E. and Wood-Harper, A.T. (1995). "Experience of Using Multiview: Some Reflections" in Stowell, F. (Ed.), *Information Systems Provision: The Contribution of Soft Systems Methodology*. McGraw-Hill, London, pp.102-117.
- Avison, D.E. and Wood-Harper, A.T. (1991a). "Information Systems Development Research: An Exploration of Ideas in Practice" in *Computer Journal*. 34(2), pp.98-112.
- Avison, D.E. and Wood-Harper, A.T. (1991b). "Conclusions from action research: the multiview experience" in Jackson, M.C. et al. (Eds.), *Systems Thinking in Europe*. Plenum Press, New York, NY.
- Avison, D.E. and Wood-Harper, A.T. (1990). *Multiview: an Exploration in Information Systems Development*. McGraw-Hill, Maidenhead.
- Avison, D.E., Wood-Harper, A.T., Vidgen, R. and Wood, J.R.G. (1998). "A further exploration into information systems development: the evolution of Multiview2" in *Information Technology and People*, 11(2), pp.124-139.
- Babbie, E. (1989). *The Practice of Social Research*. 5th Edition. Wadsworth, Belmont.
- Baburoglu, O.N. and Ravn, I. (1992). "Normative action research" in *Organisation Studies*. 13(1), pp.19-34.
- Bakos, Y. and Brynjolfsson, E. (2000). "Bundling and Competition on the Internet" in *Marketing Science*. 19(1), pp.63-82.
- Ballintine, J., Levy, M., and Powell, P. (1998). "Evaluating information systems in small and medium-sized enterprises: Issues and evidence" in *European Journal of Information Systems*. 7(4), pp.241-251.
- Balthazard, P. and Chang, K.E. (1997). *Electronic Commerce and the World Wide Web Part 1: Conceptual Foundations*. http://www.uncg.edu/~cekoh/ec_internet/report1.html (Accessed 2 April 2001).
- Bank of England. (2003). *Finance for Small Firms – A Tenth Report*. London. Bank of England.
- Barclays Bank. (2003). *Barclays Business Formation Survey in Barclays Small Business Survey Start-ups and Closures Quarter Two 2003*.
-

http://www.businesspark.barclays.com/bulletins/bulletin_10/index.htm (Accessed 29 December 2003).

Barley, S.R. (1986). Technology as an Occasion for Structuring: Evidence from Observation of CT Scanners" in *Administrative Science Quarterly*. 31, pp.78-108.

Barnes, M. and Haskel, J. (2003). *Role of Small Firms in Job Creation and Destruction*. Working Paper EBP03(09). London ONS.

Barney, J. (1991). "Firm resources and sustainable competitive advantage" in *Journal of Management*. 17(1), pp.99-120.

BarNir, A. and Smith, K.A. (2002). "Interfirm Alliances in the Small Business: The Role of Social Networks" in *Journal of Small Business Management*. 40(3), pp.219-232.

Barrenechea, Mark J. (2001). *E-Business or Out of Business*. McGraw-Hill, New York.

Barry, H. and Milner, B. (2002). "SMEs and e-business: A Departure from the Traditional Prioritisation of Training?" in *Journal of European Industrial Training*. 25(7), pp.316-326.

Barry, M. and Fourie, C. (2001). "Wicked Problems, Soft Systems and Cadastral Systems in Periods of Uncertainty" in *Proceedings of CONSAS 2001*, March, Cape Town, South Africa.

Bartelsman, E., Scarpetta, S. and Schivardi, F. (2001). *Comparative Analysis of Firm Demographics and Survival: micro-level evidence for OECD countries*. OECD, Paris.

Baskerville, R. (1999). "Investigating Information Systems with Action Research" in *Communications of the Association for Information Systems*. 2(19), October 1999.
http://cis.gsu.edu/~rbaskerv/CAIS_2_10/CAIS_2_19.html (Accessed 2 April 2001).

Baskerville, R. (1997). "Distinguishing Action Research from Participative Case Studies" in *Journal of Systems and Information Technology*. 1(1), pp.25-45.

Baskerville, R. and Pries-Heje, J. (1999). "Grounded Action Research: A Method For Understanding IT in Practice" in *Accounting, Management and Information Technology*. 9, pp. 1-23.

Baskerville, R. and Wood-Harper, A.T. (1998). "Diversity in information systems action research methods" in *European Journal of Information Systems*. 7(2), pp.90-107.

Baskerville, R. and Wood-Harper, A.T. (1996). "A critical perspective on action research as a method for information systems research" in *Journal of Information Technology*. 11, pp.235-246.

Basu, S. (2001). "Electronic management of relationship: The trial and tribulation of CRM" in J.R. Brooks, Jr. (Ed.), *Marketing advances in pedagogy, process, and philosophy*. Houston, TX: Society for Marketing Advances, pp.293-296.

Bearman, D. (1992). "Use of Advanced Digital Technology in Public Places" presented at *Archives and Museum Informatics (AMI) 1992*. <http://www.archimuse.com> (Accessed 16 September 1999).

Bekker, F. and Staude, G. (1988). *Starting and Managing A Small Business*. Juta & Co.

Bell, A. and La Valle, I. (2003). *Combining Self-employment and a Family Life*. Joseph Rowntree Foundation, York

-
- Benbasat, I., Goldstein, D.K. and Mead, M. (1987). "The Case Research Strategy in Studies of Information Systems" in *MIS Quarterly*. 11(3), pp.369-386.
- Benbasat, I. and Weber, R. (1996). "Rethinking 'diversity' in information systems research" in *Information Systems Research*. 7(4), pp.389-399.
- Benbasat, I. and Zmud, R.W. (2003). "The Identity Crisis within the IS Discipline: Defining and Communicating the Discipline's Core Properties" in *Management Information Systems Quarterly*. June 2003, 27(2), (2003), pp.183-194.
- Benbasat, I. and Zmud, R.W. (1999). "Empirical research in Information Systems: the Practice of Relevance" in *MIS Quarterly*. 23(1), pp.3-16.
- Benjamin, R.I. and Levinson, E. (1993). "A framework for IT-enabled change" in *Sloan Management Review*. 34(4), pp.23-33.
- Benjamin, R. and Wigand, R. (1995). "Electronic markets and Virtual Value Chains on the Information Superhighway" in *Sloan Management Review*. Winter, 1995. 36(2), pp.62-72.
- Bennett, R. (1998). "Using the World Wide Web for International Marketing: Internet Use and Perceptions of Export Barriers Among German and British businesses" in *Journal of Marketing Communications*. 4, pp.27-43.
- Bennett, R. (1997). "Export Marketing and the Internet" in *International Marketing Review*. 14(5), pp.324-244.
- Bennett, R.J. and Robson P. (2003a). "Business Link: Use, satisfaction and the influence of local governance regime" in *Policy Studies*. 24, pp.163-186.
- Bennett, R.J. and Robson, P.J.A. (2003b). "The role of trust and contract in the supply of business advice: a comparison of private, public, business association and social network suppliers" in *Cambridge Journal of Economics*, 28, pp.471-488.
- Bennett, R.J. and Robson, P.J.A. (2003c). "Changing use of external advice and government supports by SMEs in the 1990s" in *Regional Studies*, 37, pp.795-811
- Bennett, R. and Robson, P. (2003d). "External Advice and Business Link" in Cosh, A. and Hughes, A. (Eds.), *Enterprise Challenge Policy and Performance in the British SME Sector 1999-2002*. University of Cambridge, Cambridge Centre for Business Research.
- Berg, P.O. (1979). *Emotional Structures in Organisations: A Study of the Process of Change in a Swedish Company*. Studentlitteratur, Lund.
- Berg, V. and Karttunen, H. (1998). *SMEs as the users of the Internet*. PK-Verkkokaveri, Helsinki.
- Berger, P.L. and Luckman, T. (1966). *The Social Construction of Reality: A Treatise on the Sociology of Knowledge*. Doubleday, New York.
- Bergeron, R. (1992). "Planning of Information Systems to Gain a Competitive Edge" in *Journal of Small Business Management*. 32, pp.21-25.
- Bergquist, W. (1993). *The Postmodern Organisation*. Jossey-Bass, San Francisco.
-

-
- Berthon, P., Hulbert, J.M. and Pitt, L.F. (1999). "To Serve or Create? Strategic Orientations Toward Customers and Innovation" in *California Management Review*. 10/1/99.
- Biemans, W.G. (1992). *Managing Information within Networks*. Routledge, Holland.
- Bifulco, F. (1997). "Entrepreneurial Behaviour in the International Development of Small Firms" in Donckels, R. and Miettinen, A. (Eds.), *Entrepreneurship and SME Research: On its Way to the Next Millennium*. Ashgate Publishing, Aldershot, pp.149-161.
- Birley, S. and Westhead, P. (1990). "Growth and Performance contrasts between 'types' of small Firms" in *Strategic Management Journal*. 11(7), pp.535-558.
- Blackburn, R. and Athayde, R. (2000). "Making the Connection: The Effectiveness of Internet Training in Small Businesses" in *Education and Training*. 42(4/5).
- Blackburn, R. and McLure, R. (1998). *The Use of ICTs in Small Business Service Firms*. Kingston Business School, Kingston.
- Blattberg, R.C. and Deighton, J. (1991). "Interactive Marketing: Exploiting the Age of Addressability" in *Sloan Management Review*. 33(1), pp.5-14.
- Blau, P.M., Heyderbrand, W.V. and Stauffer, R.W. (1966). "The Structure of Small Bureaucracies" in *American Social Review*. 31(2), pp.179-191.
- Blili, S. and Raymond, L. (1993). "Information Technology: Threats and Opportunities for Small and Medium Sized Enterprises" in *International Journal of Information Management*. 13(6), pp.439-448.
- Bloch, M., Pigneur, Y. and Segev, A. (1996). *On the Road of Electronic Commerce: A Business Value Framework, Gaining Competitive Advantage and Some Research Issues*. <http://is-2.stern.nyu.edu/~mbloch/docs/roadtoec/ec.htm> (Accessed 8 April 2001).
- Bloomfield, B.P. and Vurdubakis, T. (1994). "Boundary disputes: Negotiating the boundary between the technical and the social in the development of IT systems" in *Information Technology & People*. 7(1), pp.9-24.
- Bode, S. and Burn, J. (2001). "Consultancy engagement and e-business development: A case analysis of Australian SMEs" in Smithson, S., Gricar, J., Podlogar, M. and Avgerinou, S. (Eds.), *9th European Conference on Information Systems*. Bled, Slovenia, pp.568-578.
- Boland, R.J. (1987). "The In-formation of Information Systems," in Boland, R.J. and Hirschheim, R. (Eds.), *Critical Issues in Information Systems Research*. Wiley, Chichester, pp.363-379.
- Boland, R.J. (1985). "Phenomenology: a preferred approach to research on IS" in Mumford, E., Hirschheim, R., Fitzgerald, G. and Wood-Harper, T. (Eds.), *Research Methods in Information Systems*. Elsevier, Amsterdam, pp.363-79.
- Bolisani, E. and Scarso, E. (1999). "Information technology management: a knowledge-based perspective" in *Technovation*. No. 19, pp.209-217.
- Bolton, J. (1971). *The Bolton Report: Small Firms: Report of the Committee of Inquiry on Small Firms*. HMSO, London.
- Booz | Allen | Hamilton. (2002). *International e-Economy Benchmarking: The World's Most Effective Policies for the e-Economy*. 19 November 2002. IAP. London.
-

-
- Booz | Allen | Hamilton. (1997). "The way forward in electronic commerce for SMEs" in *G7 Global Marketing for SMEs First Annual Conference*. Bonn, 7-9 April, 1997.
- Boter, H., Hjalmarsson, D. and Lundstrom, A. (1999). *Outline of a Contemporary Small Business Policy*. Swedish Foundation for Small Business Research.
- Boter, H. and Holmquist, C. (1997). "The Impact of Size, Industry and Nation on Internationalisation in Small and Medium-Sized Enterprises" in Donckels, R. and Miettinen, A. (Eds.). *Entrepreneurship and SME Research: On its Way to the Next Millennium*. Ashgate Publishing, Aldershot, pp.163-183.
- Boter, H. and Lundstrom, A. (2001). *Support Services to SMEs: Analysis of support actors and SME characteristics*. RENT XV. Research in Entrepreneurship and Small Business, Turku Business Research and Development Centre, Finland.
- Braa, K. and Vidgen, R. (1999). "Interpretation, intervention, and reduction in the organisational laboratory: a framework for in-context information systems research" in *Accounting, Management and Information Technologies*. 9(1), pp.25-47.
- Braa, K. and Vidgen, R. (1997). "An IS Research Framework for the Organisational Laboratory" in Kyng, M. and Mathiassen, L. (Eds.), *Computers in Context: Joining Forces in Design*. MIT Press, Cambridge, MA.
- Brännback, M. (1997). "Is the Internet changing the dominant logic of marketing?" in *European Management Journal*. 15(6), pp.698-707.
- Brännback, M. and Puhakainen, J. (1998a). "Web marketing: Has the distinction between products and services become obsolete?" in *Journal of Market-Focused Management*. 3(1), pp.47-58.
- Brännback, M. and Puhakainen, J. (1998b). "The Diffusion of Internet Business and the Renaissance of Conventional Wisdom" in *TUCS Technical Report 215*. Turku Centre for Computer Science.
- Breen, J., Bergin-Seers, S., Burgess, S., Campbell, G., Mahmood, M. and Sims, R. (2004). "Formulating Policy on E-Commerce and Trade for SMEs in the Asia Pacific Region: An APEC Study" in Corbitt, B.J. and Al-Qirim, N.A.Y. (Eds.), *e-Business, e-Government & Small and Medium-Sized Enterprises: Opportunities and Challenges*. IDEA Group Publishing, Hershey, pp.134-155.
- Bridge, S., O'Neill, K. and Cromie, S. (1998). *Understanding Enterprise, Entrepreneurship and Small Business*, Macmillan Business.
- Brigham, E.F. and Smith, K.V. (1967). "The Cost of Capital to the Small Firm" in *The Engineering Economist*. 13(1), pp.1-26.
- Brock, J.K-U. (2000). "Information and communication technology in the small firm" in Carter, S. and Jones-Evans, D. (Eds.), *Enterprise and Small Business: Principles, Practice and Policy*. Prentice Hall, pp.384-408.
- Brooks, L. (1997). "Structuration theory and new technology: analysing organisationally situated computer-aided design" in *Information Systems Journal*. 7, pp.133-151.
- Brown, J. and Duguid, P. (2000). *The Social Life of Information*. Harvard Business School Press, Boston, MA.
-

-
- Bryant, G. (2002). "Out of the internet jungle: Companies that survived the tech wreck had sensible plans and understanding investors" in *Business Review Weekly*, July 18-24, 2000, pp.66-68.
- Bunker D.J. and MacGregor R.C. (2000). "Successful Generation of Information Technology (IT). Requirements for Small/Medium Enterprises (SMEs). Cases from Regional Australia" in *Proceedings of SMEs in a Global e-business economy*. Wollongong, Australia, pp.72-84.
- Buratti, N. and Penco, L. (2001). "Assisted technology transfer to SMEs: Lessons from an exemplary case" in *Technovations*. 21(1), pp.35-43.
- Burgess, R.G. (1984). *In the Field: An Introduction to Field Research*. George Allen and Unwin, London.
- Burn, J. and Ash, C. (2004). "A Dynamic Planning Model for e-Business Implementation" in *Proceedings of the 15th Information Resources Management Association (IRMA) Conference*, New Orleans, USA, 23-26 May, pp.557-560.
- Burns, R. (1994). *Introduction to Research Methods in Education*. 2nd Ed., Longman Cheshire, Melbourne.
- Burrell, G. and Morgan, G. (1979). *Sociological Paradigms and Organisation Analysis*. Heinemann Books, London.
- Business Link (2002). *London E-business Survey*. Business Link, London.
- Business Planning and Research International (2000). *Smaller Businesses and Regulation Research Report*. Milton Keynes, The Institute of Chartered Accountants in England and Wales.
- Cabinet Office Performance and Innovation Unit (1999). *E-commerce@itsbest.uk*. Performance and Innovation Unit. London. <http://www.lic.gov.uk/publications/responses/ecommerce.html> (Accessed 3 July 2001).
- Cairncross, F. (1997). *The death of distance: How the communications revolution will change our lives*. Harvard Business School Press, Boston.
- Calabrese, G., Rolfo, S. and Salvador, E. (2003). "SMEs and Innovation: The Role of the Regional Industrial Policy in Italy" presented at *Reinventing Regions in the Global Economy: Regional Studies Association*. Pisa, 12-15th April.
- Caldeira, M.M. and Ward, J.M. (2002). "Understanding the successful adoption and use of IS/IT in SMEs - an explanation from Portuguese manufacturing industries" in *Information Systems Journal*. 12(2), pp.121-152.
- Caldeira, M.M. and Ward, J.M. (2001). "Using resource-based theory to interpret the successful adoption and use of information systems and technology in manufacturing SMEs" in Smithson, S., Gricar, J., Podlogar, M. and Avgerinou, S. (Eds.), *Global Co-operation in the New Millennium: 9th European Conference on Information Systems*. Bled, Slovenia, pp.1159-1169.
- Callon, M. and Law, J. (1989). "On the Construction of Socio-technical Networks" in *Knowledge and Society*. 8, pp.57-83.
- Campbell, A. and Luchs, K. (1997). "Understanding competencies" in Campbell, A. and Luchs, K. (Eds.), *Core Competency-based Strategy*. Thomson, London.
-

- Carrier, C. (1999). "The training and development needs of owner-managers of small business with export potential" in *Newspaper of Small Business Management*. 37(4), October 1999, pp.30-41.
- Carter, N.M. (1990). "Small firm adaptation: responses of physicians' organisations to regulatory and competitive uncertainty" in *Academy of Management Journal*. 33(2), pp.307-333.
- Cashman, T. (1995). "Computer-mediated communication in small organisations: the role and impact of information technology in facilitating small enterprise communication" in *European doctoral programme in entrepreneurship and small business management*, pp.1-12.
- Castleman, T., Cavill, M. and Terrill, L. (2002). "An integrated information strategy for eCommerce for export: enhancing networking in an international business context" in *15th Bled Electronic Commerce Conference, e-Reality: Constructing the e-Economy*, Bled, Slovenia, June 17-19. pp.522-536.
- Castleman, T. and Cavill, M. (2001). "Voices of Experience: Developing Export Capability through eCommerce in Australian SMEs" in O'Keefe, B., Loebbecke, C., Gricar, J., Pucihar, A. and Lenart, G. (Eds.), *Proceedings of the 14th Electronic Commerce Conference*. Bled, Slovenia, Vol. I, pp.575-590.
- Castleman, T. and Coulthard, D. (2003). "Small businesses as social formations: diverse rationalities and the context of eBusiness adoption" in Al-Qirim, N.A.Y. (Ed.), *Electronic Business in Small to Medium-Sized Enterprises: Frameworks, Issues and Implications*. IDEA Group Publishing, Hershey.
- Castleman, T. and Coulthard, D. (2001) "On the fringe: barriers to participation in the new economy in regional areas" in *People and Place*. 9(2), pp.29-39.
- Castleman, T., Coulthard, D. and Hewett, B., (2000). "Riding on the Internet's back: Can rural communities use information technologies for economic development?" in *Proceedings of ACIS 2000*, Australasian Conference on Information Systems, Brisbane, December.
- Castrogiovanni, G.J. and Justis, R.T. (2002). "Strategic and Contextual Influences on Firm Growth: An Empirical Study of Franchisors" in *Journal of Small Business Management*. 40(2), April, pp.98-108.
- Cavaye, A.L.M. (1996). "Case study research: a multi-faceted research approach for IS" in *Information Systems Journal*. 6(3), pp.227-242.
- CBI. (2000). *SME Trends Report*. CBI, London, July, pp.10-12.
- Cerveny, R.P. and Sanders, G.L. (1986). "Implementation and structural variables" in *Information Management*. 11, pp.91-198.
- Chang, L.J. and Powell, P. (1998). "Towards a framework for business process re-engineering in small and medium-sized enterprises" in *Information Systems Journal*. 8, pp.199-215.
- Chambers, T. and Parker, C. (1999). *Factors motivating and inhibiting the use of Web Commerce by Rural small businesses*. School of Management Information Systems, Deakin University, Australia. http://mis.deakin.edu.au/research/working_paper.htm (Accessed 31 January 2000).
- Chapman, P., James-Moore, M., Szczygiel, M. and Thompson D. (2000). "Building Internet Capabilities in SMEs" in *Logistics Information Management*. 13(6), pp.353-360.

-
- Chappell, C. and Feindt, S. (1999). *Analysis of E-commerce practice in SMEs. Esprit Knowledge and Information Transfer on Electronic Commerce (KITE) Project*.
<http://158.169.51.200/ecommerce/sme/reports.html> (Accessed 31 January 2000).
- Chappell, C., Feindt S. and Jeffcoate, J. (1999). *Gazelles and Gophers: SME Recommendations for Successful Internet Business*. November 1999. Available at: <http://kite.tsa.de> (Accessed 31 January 2000).
- Chaston, I. and Mangles, T. (2002). "E-commerce in Small UK Manufacturing Firms: A Pilot Study on Competencies" in *Journal of Marketing Management*. 9(3-4), pp.341-360.
- Chau, P.Y.C. (1994). "Selection of Packaged Software in Small Business" in *European Journal of Information Systems*. 3, pp.292-302.
- Chau, P.Y.K. and Hui, K.L. (2001). "Determinants of Small Business EDI Adoption: An Empirical Investigation" in *Journal of Organisational Computing and E-business*. 11(4), pp.229-252.
- Chau, S. and Pedersen, S.G. (2000). "Small is Beautiful: The Emergence of New Micro Business Utilising Electronic Commerce" in *Proceedings of the Australian Conference on Information Systems 2000*, Brisbane, Australia, pp.1-8.
- Checkland, P. (2001a). "Soft Systems Methodology" in Rosenhead, J. and Mingers, J. (Eds.), *Rational Analysis for a Problematic World Revisited: Problem Structuring Methods for Complexity, Uncertainty and Conflict*. (2nd Edn.) John Wiley & Sons, Chichester, pp.61-89.
- Checkland, P. (2001b). "Soft Systems Methodology in Action: Participative Creation of an Information Strategy for an Acute Hospital" in Rosenhead, J. and Mingers, J. (Eds.), *Rational Analysis for a Problematic World Revisited: Problem Structuring Methods for Complexity, Uncertainty and Conflict*. (2nd Edn.) John Wiley & Sons, Ltd, Chichester, pp.91-113.
- Checkland, P.B. (1999a). *Soft Systems Methodology: a 30-year retrospective*. John Wiley, Chichester.
- Checkland, P.B. (1999b). "Systems Thinking" in Galliers, R.D. and Currie, W.K. (Eds.), *Rethinking Management Information Systems: An Interdisciplinary Perspective*, Oxford University Press, Oxford, pp.45-56.
- Checkland, P. (1995). "Soft Systems Methodology and its Relevance to the Development of Information Systems" in Stowell, F. (Ed.), *Information Systems Provision: The Contribution of Soft Systems Methodology*, McGraw-Hill, London, pp.1-17.
- Checkland, P. (1991). "From Framework through Experience to Learning: the essential nature of Action Research" in Nissen, H-E., Klein, H.K. and Hirschheim, R. (Eds.), *Information Systems Research: Contemporary Approaches and Emergent Traditions*. Elsevier Science, North Holland.
- Checkland, P. (1981). *Systems Thinking, Systems Practice*. John Wiley, Chichester.
- Checkland, P. and Holwell, S. (1998). *Information, Systems and Information Systems: Making sense of the field*. John Wiley & Sons, Chichester.
- Checkland, P.B. and Scholes, J. (1990a). *Information, Systems and Information Systems: Making Sense of the Field*. Wiley, Chichester.
- Checkland, P. and Scholes, J. (1990b). *Soft Systems Methodology in Action*. Wiley, Chichester.
-

-
- Chell, E., Hedberg-Jalonen, N. and Miettinen, A. (1997). "Are Types of Business Owner-Managers Universal? A Cross Country Study of the UK, New Zealand and Finland" in Donckels, R. and Miettinen, A. (Eds.), *Entrepreneurship and SME Research: On its Way to the Next Millennium*. Ashgate Publishing, Aldershot, pp.3-18.
- Chen, X.D. and Fu, L.S. (2001). "IT Adoption in Manufacturing Industries: Differences by Company Size and Industrial Sectors - the Case of Chinese Mechanical Industries" in *Technovation*. 21(10), October, 2001, pp.649-660.
- Chen, J.-C. and Williams, B.C. (1998). "The Impact of EDI on SMEs: Summary of Eight British Case Studies" in *Journal of Small Business Management*. 36(4), October, pp.68-72.
- Cheney, P.H., Mann, R.I., and Amoroso, D.L. (1986). "Organisational Factors Affecting the Success of End-User Computing" in *Journal of Management Information Systems*. 3(1), pp.65-80.
- Chiasson, M. and Dexter, A.S. (2001). "System development conflict during the use of an information systems prototyping method of action research" in *Information Technology and People*. 14(1), 2001, pp.91-108.
- Chong, S., Pervan, G. P. and Bauer, C. (2001). "Implementation Success of Internet-based Electronic Commerce for Small- and Medium-sized Enterprises in Australia" in O'Keefe, B., Loebbecke, C., Gricar, J., Pucihar, A. and Lenart, G. (Eds.), *14th Electronic Commerce Conference*. Bled, Slovenia, pp.243-259.
- Christensen, C.M. (1997). *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. Harvard Business School Press. Boston, Massachusetts.
- Chua, W.F. (1986). "Radical developments in accounting thought" in *Accounting Review*. 61, pp.583-598.
- Chung, C.-W. and Tang, M. (1999). "Computer based information systems (CBIS) adoption in small businesses: Hong Kong experience and success factors" in *Global Information Technology Management*. 2.
- Churchill, N. and Lewis, V. (1983). "The five stages of small business growth" in *Harvard Business Review*. May-June, pp.30-50.
- Ciborra, C. (2002). *The labyrinths of information: challenging the wisdom of systems*. Oxford University Press, Oxford.
- Ciborra, C. (Ed.), (2000). *From control to drift: the dynamics of corporate information infrastructures*. Oxford University Press, Oxford.
- Ciborra, C. (1999). "Notes on improvisation and time in organisations" in *Accounting, Management & Information Technology*. 9, pp.77-94.
- Ciborra, C. (1994). "From Thinking to Tinkering: The Grass Roots of IT and Strategy" in Ciborra, C. and Jelassi, T. (Eds.), *Strategic Information Systems, a European Perspective*. Wiley, Chichester. pp.3-24.
- Clarke, R. (2000). *Appropriate Research for Electronic Commerce*.
<http://www.anu.edu.au/people/Roger.Clarke/EC/ResMeth.html> (Accessed 18 March 2003).
-

-
- Clarke III, I. and Flaherty, T.B. (2004). "Challenges of Transforming a Traditional Brick-and-Mortar Store into a Bricks-and-Clicks Model: A Small Business Case Study" in *Journal of Electronic Commerce in Organisations*. 2(4), Oct-Dec 2004, pp.75-89.
- Clegg, S. (1990). *Modern Organisations*. Sage Publications, London.
- Cochran, A.B. (1981). "Small Business Mortality Rates: A review of the Literature" in *Journal of Small Business Management*. 19(4), pp.50-59.
- Cobbenhagen, J. and Nauwelaers, C. (1996). *Building Regional Innovation Strategies*, MERIT (Mastricht Economic Research Institute on Innovation and Technology), The Netherlands.
- Coccia, S.M. (1997). "Using the Internet to level the playing field" in *Medical Marketing and Media*. 32(1), pp.30-36.
- Cohen, D. (1998). "Towards a Knowledge Context" in *California Management Review*. 40(3), pp.22-39.
- Cohen, W. and Levinthal, D. (1990). "Absorptive capacity: A new perspective on learning and innovation" in *Administrative Science Quarterly*. 35, pp.128-152.
- Connor, K. (1991). "A historical comparison of resource-based theory and five schools of thought within industrial organisation economics: Do we have a new theory of the firm?" in *Journal of Management*. 17(1), pp.121-154.
- Connor, K. and Prahalad, C. (1996). "A resource-based theory of the firm: Knowledge versus opportunism" in *Organisation Science*. 7(5), pp.477-501.
- Cooke, P. and Morgan, K. (1994). "The creative milieau: a regional perspective on innovation" in Dogson, M. and Rothwell, R. (Eds.), *The handbook of industrial innovation*. Edward Elgar, Aldershot.
- Cooke, P. and Pavitt, K. (1997). *The Associational Economy: firms, regions and innovation*. Oxford University Press, Oxford.
- Cooley, P.L., Walz, D.T. and Walz, D.B. (1987). "A Research Agenda for Computers and Small Business" in *American Journal of Small Business*. 11(3), pp.31-42.
- Coombs, R., Saviotti, P. and Walsh, V. (1987). *Economics and Technical Change*. Macmillan, London.
- Corbitt, B. and Kong, W. (2000). "Issues Affecting the Implementation of Electronic Commerce in SMEs in Singapore" in *Proceedings, 13th Bled Electronic Commerce Conference, Bled, Slovenia*. pp.474-494.
- Cornford, T., Whitley, E.A., and Poulymenakou, A. (1991). *Knowledge acquisition for SMESPRIT: A knowledge-based system to advise small and medium-sized enterprises about their use of information technology*. Working Paper Series, LSE Department of Information Systems, London.
- Cosh, A. and Hughes, A. (2003). *Enterprise Challenge Policy and Performance in the British SME Sector 1999-2002*. University of Cambridge, Cambridge Centre for Business Research.
- Countryside Agency (2003). *The State of the Countryside*. Cheltenham, The Countryside Agency.
- Coveney, P. and Moore, K. (1997). "A Typology of Angels: A Better Way of Examining the Informal Investment Phenomena" in Donckels, R. and Miettinen, A. (Eds.), *Entrepreneurship and SME Research: On its Way to the Next Millennium*. Ashgate Publishing, Aldershot, pp.65-80.
-

-
- Cragg, P.B. (2002). "Benchmarking information technology practices in small firms" in *European Journal of Information Systems*. 11(4), p.267.
- Cragg, P. (1999). *Adoption of the Internet by Small Firms*.
<http://www.scu.edu.au/sponsored/ausweb/ausweb96/business/cragg> (Accessed 19 October 2000).
- Cragg, P. B. and King, M. (1993). "Small-Firm Computing: Motivators and Inhibitors" in *MIS Quarterly*, March, pp.47-59.
- Cragg, P.B. and Zinatelli, N. (1995). "The evolution of information systems in small firms" in *Information & Management*. 29(1), pp.1-8.
- Craig, C.S., Douglas, S.P. and Flaherty, T.B. (2003). "The Internet and international consumer markets" in *Journal of Internet Commerce*, 2(1), pp.107-123.
- Cropper, S. (1996). "Collaborative Working and the Issue of Sustainability" in Huxham C. (Ed). *Creating Collaborative Advantage*. Sage, London, pp.80-100.
- Culkin, N. and Smith, D. (2000). "An Emotional Business: A Guide to Understanding the Motivations of Small Business Decision Takers" in *Qualitative Market Research: An International Journal*. 3(3), pp.145-157.
- CURDS – Centre for Urban and Regional Development Studies. (2002). *How do Innovating Small and Medium-Sized Enterprises Use Business Support Services?* Newcastle, University of Newcastle-upon-Tyne.
- Curran, J. and Blackburn, R.A. (2001). *Researching the Small Enterprise*. Sage Publications, London.
- Curran, J. and Blackburn, R.A. (1994). *Small Firms and Local Economic Networks*. Paul Chapman Publishing.
- Currie, W. (1998). "Electronic Commerce: the new paradigm for business?" in *UKAIS Conference Proceedings*. University of Lincoln, McGraw-Hill, pp.14-24
- Cyber Dialogue, (1998). *Small Business Survey*. www.cyberdialogue.com (Accessed 18 August 2002).
- Dacin, M.T., Ventresca, M.J. and Beal. B.D. (1999). "The embeddedness of organisations: Dialogue and directions" in *Journal of Management*. 25, pp.317-356.
- Daft, R.L. (1998). *Organisation Theory and Design*. 6th ed., West Publishing Co., New York.
- Dahlberg, T., Rossi, M., Saarinen, T. and Sinerva, M. (2001). *Efficient EC solutions for different types of networks*. Working Paper Series, Helsinki School of Economics, Finland.
- Dahlstrand, A.L. (1999). "Technology-based SMEs in the Goteborg Region: Their Origin and Interaction with Universities and Large Firms" in *Regional Studies*. 33(4), pp.379-389.
- Dale, I. and Morgan, A. (2001). *Job Creation – the Role of New and Small Firms*. Small Business Service, Sheffield.
- Damanpour, F. (2001). "E-business Evolution: Perspective and Strategy" in *Managerial Finance*. 27(7), pp.16-33.
-

-
- Damanpour, F. (1991). "Organisational innovation: a meta-analysis of effects of determinants and operators" in *Academy of Management Journal*. 34(3), pp.555-590.
- Damsgaard, J. and Lyytinen, K. (2001). "The Role of Intermediating Institutions in the Diffusion of Electronic Data Interchange (EDI): How Industry Associations Intervened in Denmark, Finland, and Hong Kong" in *The Information Society*. 17(3), pp.195-210.
- Dandridge, T.C. (1979). "Children are not "Little Grown-Ups": Small Business needs its own organisational theory" in *Journal of Small Business Management*. 17(2). pp.53-57.
- Dandridge, T. and Levenburg, N. M. (2000). "High-tech Potential? An Exploratory Study of Very Small Firms' Usage of the Internet" in *International Small Business Journal*. 18(2), pp.81-91.
- Daniel, E. and Wilson, H. (2002). "Adoption intentions and benefits realised: a study of E-commerce in UK SMEs" in *Journal of Small Business and Enterprise Development*. 9(4), pp.331-348.
- Daniel, E.M. and Grimshaw, D.J. (2002). "An exploratory comparison of electronic commerce adoption in large and small enterprises" in *Journal of Information Technology*. 17, pp.133-147.
- Dardis, P. (1998). *SME – e-Business: Practical Marketing Strategies for SMEs Using the Internet*. Adapt, Kratos, Enterprise Ireland "Netlink."
- Darke, P., Shanks, G. and Broadbent, M. (1998). "Successfully completing case study research: combining rigour, relevance and pragmatism" in *Information Systems Journal*. 8(4), pp.273-289.
- Datta, D.K. (1988). "International Joint Ventures: A Framework for Analysis" in *Journal of General Management*. 14(2 - Winter), pp.78-91.
- Davenport, T.H. (1992). *Process Innovation: Reengineering Work Through Information Technology*. Harvard Business School Press. Cambridge, Massachusetts.
- Davenport, T.H. and Markus, M.L. (1999). "Rigor vs. Relevance Revisited: Response to Benbasat and Zmud" in *MIS Quarterly*. 23(1), pp.19-23.
- Davies, T. (2002). *Press Release: Support for Small-to-Medium-Sized Businesses in their use of Electronic Commerce*. 27 March 2002. E-Commerce Innovation Centre, University of Cardiff. www.ecommerce.ac.uk/press1.html (Accessed 18 August 2002).
- Davis, R., Buchanan-Oliver, M. and Brodie, R. (1999). "Relationship marketing in electronic commerce environments" in *Journal of Information Technology*. 14(4). pp.319-331.
- Day, J.D., Mang, P.Y., Richter, A. and Roberts, J. (2001). "The Innovative Organisation" in *The McKinsey Quarterly*, Number 2.
- Day, J., Dean, A.A. and Reynolds, P.L. (1998). "Relationship Marketing: Its Key Role in Entrepreneurship" in *Long Range Planning*. 31, pp.828-837.
- Deakins, D. (1999). *Entrepreneurship and Small Firms*, McGraw-Hill.
- Dean, J., Holmes, S. and Smith, S. (1997). "Understanding Business Networks: Evidence from Manufacturing and Service Sectors in Australia" in *Journal of Small Business Management*. 35(1), pp.79-84.
-

-
- DeBerranger, P., Tucker, D. and Jones, L. (2001). "Internet diffusion in creative micro-businesses: identifying change agent characteristics as critical success factors" in *Journal of Organisational Computing and Electronic Commerce*. 11(3). pp.197-214.
- DeCovny, S. (1998). "Electronic Commerce Comes of Age" in *The Journal of Business Strategy*. 19(6), pp.38-44.
- DEEDS – Digital Economy Policies Exchange and Development for SMEs. (2003). *Mission Statement*. <http://www.deeds-ist.org/HTML/home.htm> (Accessed 15 October 2003).
- Deetz, S. (1996). "Describing differences in approach to organisation science: Rethinking Burrell and Morgan and their legacy" in *Organisational Science*. 7(2), pp.191-207.
- DEFRA. (2000). *Our Countryside: The Future – A fair deal for Rural England*. (Rural White Paper). www.defra.gov.uk/rural/ruralwp/whitepaper/foreword.htm (Accessed: 7 October 2004).
- DeLone, W.H. (1988). "Determinants of Success for Computer Usage in Small Business" in *MIS Quarterly*. 12(1), pp.51-61.
- DeLone, W.H. (1981). "Company Size and the Characteristics of Computer Use" in *MIS Quarterly*. 5(4), pp.65-77.
- Delmar, F. (2005). "Measuring Growth, Methodological Considerations and Empirical Results" in Donckels, R. and Miettinen, A. (Eds.), *Entrepreneurship and SME Research: On its Way to the Next Millennium*. Ashgate Publishing, Aldershot, pp.199-215.
- DeMarco, D. (1999). *Innovative Management Network*. 6(23), March 31, 1999.
- Dennis, C. (2000). "Networking for Marketing Advantage" in *Management Decision*. 38(4), pp.287-292.
- Denzin, N. (1970). "Strategies of multiple triangulation" in Denzin, N. (Ed.), *The research act in sociology: a theoretical introduction to sociological method*. New York, McGraw-Hill, pp.297-313.
- DeSanctis, G. (2003). "The Social Life of Information Systems Research: A Response to Benbasat and Zmud's Call for Returning to the IT Artifact" in *Journal of the Association for Information Systems*. 4(16), November, 2003.
- Deschoolmeester, D. and Van Hee, J. (2000). "SMEs and the Internet: On the Strategic Drivers Influencing the Use of the Internet in SMEs" in *Proceedings, 13th Bled Electronic Commerce Conference, Bled, Slovenia*. pp.754-769.
- Devins, D. (1994). "Segmenting the SME Market: Survey Indicators" presented at the 17th ISBA National Conference, Sheffield, November 1994, pp.353-62.
- DFAT (Department of Foreign Affairs and Trade). (1999). *Driving Forces on the New Silk Road*. Canberra, Australia.
- Dhillon, G. and Caldeira, M. (2000). "Interpreting the adoption and use of EDI in the Portuguese clothing and textile industry" in *Information Management & Computer Security*. 8, pp.184-188.
- Dicht, E., Koeglmayr, H. and Mueller, S. (1990). "International Orientation as a Precondition for Export Success" in *Journal for International Business Studies*. 21(1), pp.23-40.
-

-
- Dietz, S. (1999). "Telling Stories: Procedural Authorship and Extracting Meaning from Museum Databases" at Archives and Museum Informatics (AMI) *Museums and the Web 1999*, New Orleans, Louisiana, March 11-14, 1999. <http://archimuse.com/mw99/papers/dietz.html> (accessed 16 September 1999).
- Disney, R., Haskel, J. and Heden, Y. (2000). *Restructuring and productivity growth in UK manufacturing*. CEPR Discussion Paper Series, No. 2463.
- Dixon, T. and Marston, A. (2002). *London's Information Economy: The Impact of e-business on the City Office Market*. College of Estate Management. www.cem.ac.uk (Accessed: 27 August 2003).
- Dixon, T., Thompson, B. and McAllister, P. (2002). *The Value of ICT for SMEs in the UK: A Critical Literature Review. A Report for Small Business Service research programme*. May 12, 2003. Small Business Service, College of Estate Management, Reading. <http://www.sbs.gov.uk/content/research/> (Accessed March 26, 2003).
- Dodgson, M. and Bessant, J. (1996). *Effective innovation policy: a new approach*. Thomson, London.
- Domke-Damonte, D. and Levsen, V.B. (2002). "The Effect of Internet Usage on Cooperation and Performance in Small Hotels" in *SAM Advanced Management Journal*. Summer, pp.31-38.
- Donckels, R. and Lambrecht, J. (1997). "The Network Position of Small Businesses: An Explanatory Model" in *Journal of Small Business Management*. 35(2), pp.13-28.
- Donckels, R. and Miettinen, A. (1997). *Entrepreneurship and SME Research: On its Way to the Next Millennium*. Ashgate Publishing, Aldershot.
- Donovan, K. (1997). "The Best of Intentions: Public Access, the Web and the Evolution of Museum Automation" in D. Bearman and J. Trant (Eds.), *Museums and the Web, Selected Papers from Museums and the Web 97*. Archives and Museum Informatics, Pittsburgh. <http://www.archimuse.com/mw97/speak/donovan.htm> (Accessed 15 July 1998).
- Dou, H. and Dou Jr, J.-M. (1999). "Innovation management technology: Experimental approach for small firms in a deprived environment" in *International Journal of Information Management*. 19, pp.401-412.
- Drakopoulou-Dodd, S., Jack, S. and Anderson, A.R. (2002). "Scottish Entrepreneurial Networks in the International Context" in *International Small Business Journal*. 20(2), pp.213-219.
- Drew, S. (2002). "e-Business Research Practice: Towards an Agenda" in *Electronic Journal of Business Research Methods*. 2(1). <http://www.ejbrm.com> (Accessed 15 November 2003).
- Drucker, P.F. (1999a). *Management Challenges for the 21st Century*. Butterworth-Heinemann.
- Drucker, P. (1999b). *Innovation and Entrepreneurship*, Butterworth-Heinemann.
- Drucker, P.F. (1998). "The Discipline of Innovation" in *Harvard Business Review*, November-December, Product Number: 3480.
- Drucker, P. (1974). *Management: Tasks, responsibilities, practices*. Harper & Row, New York.
- DTI – Department of Trade and Industry. (2004). *A government action plan for small business. Making the UK the best place in the world to start and grow a business: The evidence base*. www.sbs.gov.uk/content/7-strategies/sbs_evidence.pdf (Accessed 12 March 2003).
-

-
- DTI (2003a). *The Strategy: Prosperity for All*. <http://dti.gov.uk/about/dti-strategy.pdf> (Accessed 29 December 2003).
- DTI. (2002a). *UK Competitiveness Indicators*. DTI, London.
- DTI (2002b). *Cross Cutting Review of Government Services*. The Stationery Office, Norwich.
- DTI (2002c). *Business in the Information Age: Business Benchmarking Study 2002*. Department of Trade and Industry.
- DTI. (2001). *Business in the Information Age: International Benchmarking Report*. www.publications.parliament.uk/pa/cm200203/cmselect/cmwelaf/95/9504.htm (Accessed 3 April 2002).
- DTI (2000a). *Business in the Information Age: Business Benchmarking Study 2000*. Department of Trade and Industry.
- DTI. (2000b). *Opportunity for All in a World of Change*. <http://www.dti.gov.uk/opportunityforall/> (Accessed 3 April 2002).
- DTI. (1999). *Our information age: The Government's vision*. <http://www.number-10.gov.uk> (Accessed 12 December 2000).
- DTI. (1998). *Our Competitive Future: building the knowledge driven economy*. (CM4176). <http://www.dti.gov.uk/comp/competitive/> (Accessed 12 December 2000).
- DTI. (1997a). *Competitiveness through Partnerships with People*. <http://www.dti.gov.uk/mbp/bpgt/m9m000002/m9m0000021.html> (Accessed 8 June 2002).
- DTI. (1997b). *Technology Foresight*, http://www.britishcouncil.org/science/pubs/briefsht/technology/tech_foresight.htm (Accessed 5 July 2002).
- DTI. (1993a). *White Paper on Growth, Competitiveness and Employment*, (1993). DTI. <http://www.dti.gov.uk/> (Accessed 16 December 2002).
- DTI. (1993b). *White Paper: Realising Our Potential: A Strategy for Science, Engineering and Technology*. <http://www.dti.gov.uk/> (Accessed 16 December 2002).
- Dyer, J.H. (1996). "How Chrysler created an American keiretsu" in *Harvard Business Review*. 74(4).
- Duhan, S., Levy, M. and Powell, P. (2001). "Information systems strategies in knowledge-based SMEs: the role of core competencies" in *European Journal of Information Systems*. 10, pp.25-40.
- Dykman, C. (2004). "A Virtual Community: A Strategic Initiative and Competitive Advantage for Small Businesses Engaged in E-Commerce" in *Proceedings of the 15th Information Resources Management Association (IRMA) Conference*, New Orleans, USA, 23-26 May, pp.825-828.
- Earl, M.J. (1996). *Management Strategies for Information Technology*. Prentice-Hall Press, New York.
- Earl, M.J. (1993). "Experiences in Strategic Information Systems Planning" in *MIS Quarterly*. 17(1), pp.1-24.
-

-
- Earl, M.J. (1989). *Management Strategies for Information Technology*. Prentice-Hall, New York.
- Earl, M. and Feeny, D. (1994). "Is your CIO adding value?" in *Sloan Management Review*. 35(3), pp.11-20.
- Eden, L. Levitas, E. and Martinez, R. (1997). "The Production, Transfer and Spillover of Technology: Comparing Large and Small Multinationals as Technology Producers" in *Small Business Economics*. 9(1), pp.53-66.
- Eder, L. and Igbaria, M. (1999). "An Examination of Intranet Adopters and Non-Adopters" in *Proceedings of the 30th Annual Meeting of the Decision Sciences Institute*. November 20-23, New Orleans, LA.
- Ehn, P., Meggerle, T., Steen, O. and Svedmar, M. (1995). "What kind of car is this sales support system? On styles, artifacts and quality-in-use" in Kyng, M. and Mathiassen, L. (Eds.), *Proceedings of the Third Decennial Conference on Computers in Context: Joining Forces in Design*. August 14-18, Aarhus University, Denmark.
- Eid, R., Trueman, M. and Ahmed, A.M. (2002). "A Cross-Industry Review of B2B Critical Success Factors" in *Internet Research: Electronic Networking Applications and Policy*. 12(2), pp.110-123.
- Ein-Dor, P. and Segev, E. (1978). "Organisational Context and the Success of Management Information Systems" in *Management Science*. 24(10), pp.1064-1077.
- Ein-Dor, P.E., Segev, E., Blumenthal, D. and Miller, I. (1984). "Perceived importance, investment and success of MIS, or the MIS Zoo" in *Systems Objectives Solutions*. 4, pp.61-67.
- Eisenhardt, K.M. (1998). "Time pacing: Competing in markets that won't Stand Still" in *Harvard Business Review*. 76(2) (March-April), pp.84-95.
- Eisenhardt, K.M. (1989). "Building Theories from Case Study Research" in *Academy of Management Review*. 14(4), pp.532-550.
- El Namaki, M.S. (1990). "Small Business: the myths and the reality" in *Long Range Planning*. 23.
- Engsbo, M., Saarinen, T., Salmi, H. and Scupola, A. (2001). "A Framework of Adoption of E-Commerce in Networks of SMEs" in Bjørnstad Solveig, MR.EE., Mørch Anders I., Opdahl A.L. (Eds.), *Proceedings of the 24th Information Systems Research Seminar in Scandinavia*. pp.291-304.
- European Commission. (2003a). *Commission Recommendation of 6 May 2003 Concerning the Definition of Micro, Small and Medium-Sized Enterprises*. C(2003)1422. Commission of the European Communities, Brussels.
- The European Commission (2003b). *SME Definition*.
http://europa.eu.int/comm/enterprise/enterprise_policy/sme_definition/index_en.htm
(Accessed December 15, 2003).
- European Commission. (2002a). *Final benchmarking report on national and regional policies in support of e-business for SMEs*. Enterprise DG, 28 June 2002, Commission of the European Communities, Brussels.
- European Commission. (2002b). *European Conference on benchmarking national and regional policies in support of e-business for SMEs*. 20 June, 2002.
-

<http://europa.eu.int/comm/enterprise/ict/policy/benchmarking.htm> (Accessed 3 December 2003).

European Commission. (2002c). *eEurope 2002: Helping SMEs to Go Digital*. 13.3.2001. (COM(2001)136). <http://www.europa.eu.int/comm/enterprise/ict/policy/benchmarking.htm> (Accessed 15 October 2003).

European Commission. (2002d). *eEurope 2005: An information society for all: An Action Plan to be presented in view of the Sevilla European Council*. 21/22 June 2002. 28.5.2002. (COM(2002)263).

European Commission. (2002e). *Helping SMEs to Go Digital*. 13.3.2001. (COM(2001)136). <http://www.europa.eu.int/comm/enterprise/ict/policy/benchmarking.htm> (Accessed 15 October 2003).

European Commission (2001a). *The Commission Innovation in a knowledge-driven economy*, adopted in September 2000. (COM(2000)567).

European Commission. (2001b). *Building an Innovation Economy in Europe: A review of 12 studies of innovation policy and practice in today's Europe*. http://www.cordis.lu/innovation-policy/studies/ca_study1.htm (Accessed 15 October 2003).

European Commission (2001c). *Commission Staff Working Paper, 2001: Innovation Scoreboard*. Brussels, 14.9.2001. SEC(2001)1414.

European Commission (2001d). *Access to Capital*. <http://europa.eu.int/comm/enterprise/financing/index.htm> (Accessed 15 September 2001).

European Commission (2001e). *Community Innovation Survey. CORDIS. Promotion of Innovation and Encouragement of SME Participation (2001)*. <http://www.cordis.lu/innovation-smes/src/cis2.htm> (Accessed 8 June 2002) and <http://www.cordis.lu/finance/src/crea.htm> (Accessed 21 March 2002).

European Commission (2001f). *Innovation and SME Programme*. <http://www.cordis.lu/innovation-smes/home.html> (Accessed 13 January 2001).

European Commission (2001g). *Fourth Multiannual Programme for SMEs 2001-2004*, http://europa.eu.int/comm/enterprise_policy/mult_entr_programme/4th-programme.htm (Accessed 12 August 2002).

European Commission (2000a). *Italian Proposal for the International Network for SMEs (INSME)*, DSTI/IND (2000)6.

European Commission. (2000b). *Statistics on innovation in Europe*, 2000 Edition. http://www.cordis.lu/innovation-policy/studies/gen_study5.htm (Accessed 15 September 2001).

European Commission. (2000c). *The Integrated Programme for SMEs: A General Framework for all Community Actions in Favour of SMEs*. <http://europa.eu.int/ISPO/ecommerce/sme/policy.html> (Accessed 13 January 2001).

European Commission. (2000d). *SME Survey Results: Examining Mobile Behaviour, Needs and Concerns*. SMESPRIT Report 1.1. *A review of current activities in the domain*. SMESPRIT Consortium.

European Commission. (2000e). *SMESPRIT Report 1.2. A review of IT strategies within the SME sector*. SMESPRIT Consortium.

European Commission. (2000f). *"COMPETE": The Network for Microelectronics Assembly - Packaging - Interconnection*. <http://www.compete.tm.fr/> (Accessed 2 May 2000).

European Commission. (2000g). *Brite-Euram Program*. http://europa.eu.int/comm/research/brite-eu/impact2001/index_en.html (Accessed 3 October 2001).

European Commission. (2000h). *The Bologna Charter on SME Policies*, (2000). http://www.mimmc.ro/bcsme/bologna/bologna_charter.htm (Accessed 8 April 2002).

European Commission. (1998). *Fifth framework programme of the European Community for research, technological development and demonstration activities* (1998-2002). <http://europa.eu.int/comm/research/fp5.html> (Accessed 12 August 2002).

European Commission. (1997a). *Innovation, 1997: Regional Innovation Strategies*. European Community Web site, Cordis, Activities, <http://www.cordis.lu> (Accessed 13 January 2001).

European Commission. (1997b). *Innovation, 1997: 21 New RITTS Projects Selected*, European Community Web site, Cordis, Activities, <http://www.cordis.lu> (Accessed 13 January 2001).

European Commission. (1996a). *Green Paper on Innovation*, EC, Luxembourg.

European Commission. (1996b). *Action Plan for Innovation in Europe*, European Community.

European Commission. (1996c). *RITTS & RIS Guide Book*, EC DG XVI, Luxembourg.

European Commission. (1996d). *Systems Engineering in Software-Intensive SMEs (SISMEs) Final Report*. DGIII Industry Programme for Research and Technology Development in Information Technologies (1994-1998).

European Commission. (1996e). *Third Multiannual Programme for SMEs 1997-2000*, http://europa.eu.int/comm/enterprise/policy/mult_entr_programme/3rd-programme.htm (Accessed 30 September 2001).

European Commission. (1995). *Green Paper on Innovation*, EC, Luxembourg.

European Commission. (1994). *Regional Technology Plan Guide Book*. EC DGXIII/DG XVI, Luxembourg.

European Commission. (1993). *White Paper on Growth, Competitiveness and Employment*. EC, Luxembourg.

European Parliament. (2001). http://www.europarl.eu.int/dg4/factsheets/en/4_14_0.htm (Accessed 15 November 2001).

Euròpemedià. (2001). "Italian B2B slow to take off" in *News Brief*. <http://www.nua.ie/surveys> (Accessed 15 November 2001).

Evans, G., Bohrer, J. and Richards, G. (2000). "Small is beautiful? ICT and Tourism SMEs: A comparative European Survey" in *Information Technology and Tourism*. 3, pp.139-153.

Evans, P.B. and Wurster, T.S. (2000). "Talking strategically about e-business" in *Perspectives*. <http://www.bcg.com> (Accessed 12 August 2002).

-
- Evans, P.B. and Wurster, T.S. (1999). "Getting Real About Virtual Commerce" in *Harvard Business Review*. 77(6 - November-December), pp.84-95.
- Evans, P.B. and Wurster, T.S. (1997). "Strategy and the New Economics of Information" in *Harvard Business Review*. Sept-Oct, pp.70-82.
- Fallon, M. and Moran, P. (2000). "Information Communications Technology (ICT) and manufacturing SMEs" in *2000 Small Business and Enterprise Development Conference*. University of Manchester, pp.100-109.
- Farhoomand, A.F., Tuunainen, V.K. and Yee, L.W. (2000). "Barriers to Global E-business: A Cross-Country Study of Hong Kong and Finland" in *Journal of Organisational Computing and E-business*. 10(1), pp.23-48.
- Fariselli, P. (1999). "The Role of Electronic Commerce" in *Proceedings from the G8 Global Marketplace for SMEs Seminar*, Dallas. <http://europa.eu.int/ISPO/ecommerce/g8/workshops/invencom.html>
- Fariselli, P., Oughton, C., Picory, C. and Sugden, R. (1999). "Electronic commerce and the future for SMEs in a global market-place: Networking and public policies" in *Small Business Economics*. 12, pp.261-275.
- Federation of Small Business. (2002a). *Small firms reluctant to make full use of the web*. <http://www.fsb.org.uk/news.asp?REC=P/2002/18> (Accessed 12 October 2002).
- Federation of Small Businesses (2002b). *Lifting the Barriers to Growth in UK Small Businesses*. FBS. <http://www.fsb.org.uk/policy/lbg2002/default.asp> (Accessed: 27 August 2003).
- Feeny, D. and Willcocks, L. (1998a). "Core IS capabilities for exploiting information technology" in *Sloan Management Review*. 39(3), pp.9-12.
- Feeny, D. and Willcocks, L. (1998b). "Re-design the IS function around core capabilities" in *Long Range Planning*. 31(3), pp.354-367.
- Feinberg, R.A. and Eastlick, M.A. (1997). "Direct Marketing in the USA: past failures and future promises" in *International Journal of Retail & Distribution Management*. 25(8), pp.256-261.
- Feindt, S., Jeffcoate, J. and Chappell, C. (2002). "Identifying success factors for rapid growth in SME E-commerce" in *Small Business Economics*. 19(1), pp.51-62.
- Feindt, S., Jeffcoate, J., Chappell C. and Gaboardi, E. (2001). "Critical Success Factors for eBusiness for SMEs" in *Proceedings of the Conference on e-Business and e-Work*, Venice, October 17-19.
- Feindt, S., Chappell C. and Jeffcoate, J. (1999). "Gazelles and Gophers: SME Recommendations for Successful Internet Business" in *Proceedings of the Information Society Technologies Conference*, Helsinki, November 22-24.
- Feyerabend, P. (1993). *Against Method*. Verso, London.
- Finegan, A.D. (1994). "Soft Systems Methodology: An Alternative Approach to Knowledge Elicitation in Complex and Poorly Defined Systems" in *Complexity International*. 1, Paper ID: finega01, www.csu.edu.au/ci/vol01/finega01/ (Accessed 11 July 2003).
-

-
- Fink, D. (1998). "Guidelines for the successful adoption of information technology in small and medium enterprises" in *International Journal of Information Management*. 18(4), pp.243-253.
- Fink, E. (1995). Introduction to Imaging: Issues in Constructing an Image Database. The Getty Information Institute Imaging Initiative, The Getty Information Institute, 1995. www.ahip.getty.edu/intro_imaging/22~Con.html (accessed 16 September 1999).
- Fink, D. and Tjarka, F. (1994). "Information Systems Contribution to Business Performance: A Study of Information Systems Executives' Attitudes" in *Australian Journal of Information Systems*. 2(1), pp.29-38.
- Fitzpatrick, D. (1998). "Regional Development and the Information Society" in Timmers, P., Stanford-Smith, B. and Kidd, P.T. (Eds.), *Electronic Commerce: Opening Up New Opportunities for Business*. European Commission - Information Society Directorate-General. Report of the "G8 Global Marketplace for SMEs Regional Conference" in Manchester, 8th September 1998.
- Flash Eurobarometer (2002). *Attitudes of Entrepreneurship in Europe and the United States*. European Commission, Paris. Flash Eurobarometer 134.
- Fletcher Advisory (2001). *Analysis Document: SME Broadband User Research*. http://www.btinterface.co.uk/reports/report_pdfs/sme_broadband.pdf (Accessed: 27 August 2003).
- Fletcher Research. (2001). *UK Online Retail: from Minority to Mainstream*. Forrester Research. <http://www.forrester.com/ER/Research/Report/Summary/0,1338,13729,00.html> (Accessed 4 May 2001).
- Fliegel, F.C. and Kivlin, J.E. (1966). "Attributes of Innovations as Factors of Diffusion" in *American Journal of Sociology*. 72, pp.235-248.
- Flood, R.L. and Jackson, M.C. (Eds.), (1991). *Critical Systems Thinking: Directed Readings*. Wiley, Chichester.
- Flyvbjerg, B. (1991). Traffic planning in the 90s for environment, health, and sustainability. *Miljø, og Teknologi: Nordisk Tidsskrift for Miljø, teknik, -forvaltning og -politik*. 6(1), pp. 28-32.
- Forrester Research. (2000a). *The Truth About the Digital Divide*. Forrester Research. <http://www.forrester.com/ER/Research/Brief/0,01317,9208,00.html> (Accessed 4 May 2001).
- Forrester Research. (2000b). *UK Online Retail: From Minority to Mainstream*. Forrester Research, London. <http://www.forrester.com/ER/Research/Brief.html> (Accessed 4 May 2001).
- Fraser, J., Fraser, N. and McDonald, F. (2000). "The strategic challenge of electronic commerce" in *Supply Chain Management: An International Journal*. 5(1), pp.7-14.
- Fredriksen, H.D. and Rose, J. (2003). "The social construction of the software operation: Reinforcing effects in metrics programs" in *Scandinavian Journal of Information Systems*. 15, pp.23-37.
- Fuller, T. (2000). "The Small Business Guide to the Internet: A Practical Approach to Going Online" in *International Small Business Journal*. 19(1), pp.105-107.
- Fuller, H. (1992). "Information technology and Business Networks; Navigation Systems, Theory and Practice" in *22nd Small Business Seminar*. Sept, pp.1-15.
-

-
- Fuller, E.C. and Southern, A. (1999). "Small Firms and Communication Technologies: Policy Issues and Some Words of Warning" in *Environment and Planning C: Government and Policy*. 17, pp.287-302.
- G8GIS – G8 Global Information Society. (1999). *A Global Marketplace for SMEs*. <http://www.g7.utoronto.ca> and <http://europa.eu.int/ISPO/ecommerce/g8/g8pp.html> (Accessed: March 26, 2003.)
- Gable, G. (1994). "Integrating Case Study and Survey Research Methods: An Example in Information Systems" in *European Journal of Information Systems*. 3(2), pp.112-126.
- Gable, G.G. (1992a). "The Case Study Methodology: An Example in Information Systems" in *Proceedings of the XI Conference of the South East Asian Computer Confederation*.
- Gable, G.G. (1992b). *Using Case Studies to Strengthen Survey Research: An Example in Information Systems*. Working Paper, National University of Singapore.
- Gable, G.G. and Raman, K.S. (1992). *Government Initiatives for IT Adoption in Small Businesses: Experiences of the Singapore Small Enterprise Computerisation Program*. International Information Systems, Harvard Business Journal Professional Publishing.
- Galliers, R.D. (2003). "Change as Crisis or Growth? Towards a Trans-disciplinary View of Information Systems as a Field of Study: A Response to Benbasat and Zmud's Call for Returning to the IT Artifact" in *Journal of the Association for Information Systems*. 4(13), November, 2003.
- Galliers, R.D. (1996). "Reflections on information systems research: Twelve points of debate" in Stowell, F. and Mingers, J. (Eds.), *Information Systems: an Emerging Discipline?* McGraw-Hill, London.
- Galliers, R.D. (1995a). "A Manifesto for Information Management Research" in *British Journal of Management*. 6, Special Issue, S45-S52 (December 1995).
- Galliers, R.D. (1995b). "Re-Orienting Information Systems Strategy: Integrating Information Systems into the Business" in Stowell, F. (Ed.), *Information Systems Provision: The Contribution of Soft Systems Methodology*, McGraw-Hill, London, pp.51-74.
- Galliers, R.D. (1994). "Relevance and Rigour in Information Systems Research: Some Personal Reflections on Issues Facing the Information Systems Research Community" in *Proceedings of TC8AUS IFIP Information Systems Working Conference*. Gold Coast, Queensland, Australia, 8-11 May, pp.111-119.
- Galliers, R.D. (1993a). "Towards a flexible information architecture: integrating business strategies, information strategies and business process redesign" in *Journal of Information Systems*. 3(3), July, pp.199-213.
- Galliers, R.D. (1993b). "Information systems and business re-engineering" in *IFORS Conference, Lisbon*, 11-16 July.
- Galliers, R.D. (1993c). "IT Strategies: Beyond Competitive Advantage" in *Journal of Strategic Information Systems*. 2(4), pp.283-291.
- Galliers, R.D. (1993d). "Research issues in information systems" in *Journal of Information Technology*. 8, pp.92-98.
-

-
- Galliers, R.D. (1992a). "Choosing Information Systems Research Approaches" in Galliers, R.D. (Ed.), *Information Systems Research – Issues, Methods and Practical Guidelines*. Blackwell Scientific Publications, Oxford.
- Galliers, R.D. (1992b). "Soft systems, scenarios, and the planning and development of information systems" in *Systemist*. 14(3), pp.146-59.
- Galliers, R.D. (1992d). *Information Systems Research – Issues, Methods and Practical Guidelines*. Blackwell Scientific Publications, Oxford.
- Galliers, R.D. (1991b). "Strategic information systems planning: myths, reality and guidelines for successful implementation" in *European Journal of Information Systems*. 1(1), January, pp.55-64.
- Galliers, R.D. (1991c). "Choosing Appropriate Information Systems Research Approaches: A Revised Taxonomy" in Nissen, H-E., Klein, H.K. and Hirschheim, R. (Eds.), *Information Systems Research: Contemporary Approaches and Emergent Traditions*, pp.327-345. Elsevier Science, North Holland.
- Galliers, R.D. (1984a). "In Search of a Paradigm for Information Systems Research" in Mumford, E., Hirschheim, R., Fitzgerald, G. and Wood-Harper, T. (Eds.), *Research Methods in Information Systems: Proceedings of the IFIP WG 8.2 Colloquium*, Manchester Business School, 1-3 September, 1984, pp.281-297.
- Galliers, R.D. and Land, F.F. (1987). "Choosing Appropriate Information Systems Research Methodologies" in *Communications of the ACM*. November 1987, 30(11), pp.900-902.
- Galliers, R.D. and Newell, S. (2001). "Electronic Commerce and Strategic Change Within Organisations: Lessons from Two Cases" in *Journal of Global Information Management*. July-September, 2001, pp.15-22.
- Galliers, R.D., Whittaker, B.D., Clegg, J.D. and Mouthon, M. (1981). "Improving Employment Prospects for Mentally Handicapped People in Camden: A Systems Study" in *Journal of Applied Systems Analysis*. 8, pp.101-112.
- Galliers, R.D. and Wiggins, A. (2002). "Internet Retailing in the United Kingdom" in Elliot, S. (Ed.), *Electronic Commerce: B2C Strategies and Models*. John Wiley & Sons, Oxford, pp.179-215.
- Gankema, H.G.J., Snuif, H.R. and van Dijken, K.A. (1997). "The Internationalisation Process of Small and Medium Sized Enterprises: An Evaluation of the Stage Theory" in Donckels, R. and Miettinen, A. (Eds.), *Entrepreneurship and SME Research: On its Way to the Next Millennium*. Ashgate Publishing, Aldershot, pp.185-197.
- Gaskill, L.R., Van Auken, H.E. and Kim, H. (1993). "The Impact of Operational Planning on Small Business Retail Performance" in *Journal of Small Business Strategy*. 5(1), pp.21-35.
- Gaskill, L.R. and Gibbs, R.M. (1994). "Going Away to College and Wider Urban Job Opportunities Take Highly Educated Youth Away for Rural Areas" in *Rural Development Perspectives*. 10(3), pp.35-44.
- Geeraerts, D. (1984). "The effect of ownership on the organisation structure in small firms" in *Administrative Science Quarterly*. pp.232-237.
-

-
- Gemuenden, H.G. (1999). "An Exchange on Definitions of Innovation" in *Innovative Management Network*. 6(21), March 29, 1999. <http://www.innovation.cc/discussion-papers/definition.htm> (Accessed 16 June 2003).
- Geroski, P. (1995). "Markets for Technology, Knowledge, Innovation and Appropriability" in Stoneman, P. (Ed.), *Handbook of the Economics of Innovation and Technological Change*. Blackwell, Oxford.
- Gerrard, R. (1998). "With All This IT, Are We Doing Our Job Better?" at *Archives and Museum Informatics (AMI) Museums and the Web 1998*. Toronto, Canada, April 22-25, 1998. http://archimuse.com/mw98/papers/gerrard/gerrard_paper.html (Accessed 16 September 1999).
- Gerwin, D. (1990). "A theory of innovation processes for computer-aided manufacturing technology" in *IEEE Transactions on Engineering Management Journal*. 35(2), pp.90-100.
- Ghosh, S. (1998). "Making Business Sense of the Internet" in *Harvard Business Review*. 76(2), (March-April), pp.126-136.
- Giaglas, G., Klein, S. and O'Keefe, R. (1999). "Disintermediation, Reintermediation or Cybermediation? The Future of Intermediaries in Electronic Marketplaces" in *12th Bled e-business Conference*.
- Gibb, A. (2000). "SME policy, academic research and growth of ignorance, mythical concepts, myths, assumptions, rituals and confusions" in *International Small Business Journal*. 18(3), pp.13-35.
- Gibb, A. (1993). "Small Business Development in Central and Eastern Europe – Opportunity for a Rethink" in *Journal of Business Venturing*. 8, pp.461-486.
- Gibbons, M.T. (1987). "Introduction: the Politics of Interpretation" in Gibbons, M.T. (Ed.), *Interpreting Politics*. New York University Press, New York, pp.1-31.
- Gibson, B. and Cassar, G. (2002). "Planning Behaviour Variables in Small Firms" in *Journal of Small Business Management*. 40(3), pp.171-186.
- Giddens, A. (1984). *The Constitution of Society*. Polity Press, Cambridge.
- Gimeno, J., Folta, T.B., Cooper, A.C. and Woo, C.Y. (1997) "Survival of the fittest? Entrepreneurial human capital and the persistence of underperforming firms" in *Administrative Science Quarterly*. 42, pp.750-783.
- Ginzberg, M.J. (1981a). "Key Recurrent Issues in the MIS Implementation Process" in *MIS Quarterly*. June, pp.47-59.
- Ginzberg, M.J. (1981b). "Early diagnosis of MIS implementation failure: Promising results and unanswered questions" in *Management Science*. 27(4), pp.459-478.
- Gladwell, M. (1997). "Just ask for it: The real key to technological innovation" in *The New Yorker*. April 7, 1997, pp.45-49.
- Glaser, B.G. and Strauss, A.L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Aldine, Chicago.
-

-
- Glazer, R. (1991). "Marketing in an information-intensive environment: Strategic implications of knowledge as an asset" in *Journal of Marketing*. 55(4), pp.1-19.
- Goffman, E. (1989). "On Fieldwork" in *Journal of Contemporary Ethnography*. 24(2), pp.123-132.
- Golden, P.A. and Dollinger, M. (1993). "Cooperative Alliances and Competitive Strategies in Small Manufacturing Firms" in *Entrepreneurship Theory and Practice*. Summer, pp.43-56.
- Golden, W. and Griffin, M. (2000). "The World Wide Web: Saviour of Small Firms" in *Proceedings, 13th Bled Electronic Commerce Conference, Bled, Slovenia*. pp.495-509.
- Golden, W. and Griffin, M. (1999). *A Survey of Internet commerce in small and medium sized enterprises*. <http://www.is.nuigalway.ie/wgolden/survey/default.htm> (Accessed 6 March 2002).
- Golden, W., Hughes, M. and Gallagher, P. (2003). "On-Line Retailing: What Drives Success? Evidence from Ireland" in *Journal of End User Computing*. 15(3), July-Sept, 2003.
- Goldman, S., Nagel, R. and Preiss, K. (1995). *Agile Competitors and Virtual Organisations*. John Wiley & Sons, Oxford.
- Granovetter, M. (1992). "Economic Institutions as Social Constructions: A Framework for Analysis" in *Acta Sociologica*. 35, pp.3-11.
- Granovetter, M. (1985). "Economic Action and Social Structure: The Problem of Embeddedness" in *American Journal of Sociology*. 91(3). pp.481-510.
- Gray, D. and Van Akkeren, J. (2003). "E-Commerce Experiences in the Real Estate Industry: A Preliminary Study in Regional Queensland" in *Australian Journal of Information Systems*. 10(2), pp.49-59.
- Gray, G. (1998). *Enterprise and Culture*. Routledge Research. OECD Small and Medium Enterprise Outlook, OECD, Paris.
- Griffen, M. and Golden, W. (1998). *A survey of Internet Commerce in Small and Medium Sized Enterprises*. Galway, Ireland: National University of Ireland.
http://www.nuigalway.ie/acc/staff/wgolden/survey/survey_report.htm
- Grönroos, C. (1994). "From Marketing Mix to Relationship Marketing: Toward a Paradigm Shift in Marketing" in *Management Decision*. 32(2), pp.4-32.
- Grover, V., Teng, J. and Cheon, M. (1998). "Towards a theoretically-based contingency model of information systems outsourcing" in Willcocks, L. and Lacity, M. (Eds.), *Strategic Sourcing of Information Systems*, Wiley, Chichester, pp.79-101.
- Guay, D. and Ettwein, J. (1998). "Internet Commerce Basics" in *Electronic Markets*. 8(1), pp.12-15.
- Guba, E. (1990). "The alternative paradigm dialog" in Guba, E. (Ed.), *The Paradigm Dialog*. Sage Publications, CA.
- Gulati, R. (1995). "Does familiarity breed trust? The implications of repeated ties for contractual choice in alliances" in *Academy of Management Journal*. 38(1). pp.85-112.
- Gulati, R. and Garguilo, M. (1999). "Where do interorganisational networks come from?" in *American Journal of Sociology*. 104(5). pp.1439-93.
-

-
- Gulledge, T. and Sommer, R. (1998). *Electronic commerce resource: an industry university partnership*. ECRC Research Paper. Fairfax, USA.
- Gummesson, E. (1991) *Qualitative Methods in Management Research*. Newbury Park, Sage.
- Gummesson, E. (1997). "In Search of Marketing Equilibrium: Relationship Marketing Versus Hypercompetition" in *Journal of Marketing Management*. 31(1), pp.10-16.
- Gunnigle, P. and Brady, T. (1984). "The Management of Industrial Relations in the Small Firm" in *Employee Relations*. 6(5), pp.21-24.
- Guthrie, R. and Austin, L. (1996). "Competitive Implications of the Internet" in *Information Systems Management*. 13(3), pp.90-92.
- Hacking, I. (1999). *The Social Construction of What?* Harvard University Press, Boston.
- Hadjimonolis, A. (1999). "Barriers to Innovation for SMEs in a Small Less Developed Country (Cyprus)" in *Technovation*. 19(9), pp.561-570.
- Hagel III, J. and Rayport, J.F. (1997). "The Coming Battle for Customer Information" in *Harvard Business Review*. 75(1), pp.53-65.
- Hamel, J. (1993). *Case study method*. Sage Publications, Beverly Hills.
- Hamel, G. and Prahalad, C. (1996). *Competing for the Future*. Harvard Business School Press, Boston.
- Hammer, M. (2001). "The Superefficient Company" in *Harvard Business Review*. 9/1/01, Product Number: R0108E.
- Hammer, M. (1990). "Re-engineering work: don't automate, obliterate" in *Harvard Business Review*. 68(4), July-August, pp.104-12.
- Hamill, J. and Gregory, K. (1997). "Internet Marketing in the Internationalisation of UK SMEs" in *Journal of Marketing Management*. 13, pp.9-28
- Hanseth, O. and Braa, K. (2000). "Who's in Control: Designers, Managers – or Technology? Infrastructures at Norsk Hydro" in Ciborra, C. (Ed.), (2000). *From control to drift: the dynamics of corporate information infrastructures*. Oxford University Press, Oxford, pp.125-147.
- Hanseth, O. and Braa, K. (1998). "Technology as Traitor. SAP infrastructure in global organisations" in *Proceedings of the 19th Annual International Conference on Information Systems (ICIS)*. Helsinki, Finland, 1998. pp.188-196.
- Harding, R. (2002). *Global Entrepreneurship Monitor (GEM) Report*. London Business School, London.
- Hardless, C. (1999). *E-business education for SMEs*. Informatik som Vetenskap, Viktoria Institute, Sweden.
- Hargadon, Andrew and Sutton, Robert I. (2000). "Building an Innovation Factory" in *Harvard Business Review*, May-June 2000, Product Number: R00304.
- Harrison, B. (1994). "The small firms myth" in *California Management Review*, 36.
-

-
- Hastings, C. (1993). *The New Organisation: Growing the Culture of Organisational Networking*. McGraw-Hill.
- Hawkins, P., Winter, J. and Hunter, J. (1995). *Skills for Graduates in the 21st Century*. Report Commissioned from the Whiteway Research, University of Cambridge, Association of Graduate Recruiters, Cambridge.
- Hawkins, R. and Prencipe, A. (2000). *Business-to-Business E-Commerce in the UK: A Synthesis of Sector Reports Commissioned by the Department of Trade and Industry*. DTI, London.
- Haynes, P.J., Becherer, R.C. and Helms, M.M. (1998). "Small and mid-sized businesses and Internet use: unrealised potential?" in *Internet Research: Electronic Networking Applications and Policy*, 8, pp.229-235.
- Hegge, B. (2002). *SMEs and European Integration: Internationalisation Strategies*. Routledge, London.
- Heikkila, J., Saarinen, T. and Saaksjarvi, M. (1991). "Success of software packages in small business: An exploratory study" in *European Journal of Information Systems*, 1, pp.159-169.
- Henderson, J.C. and Venkatraman, N. (1993). "Strategic Alignment: Leveraging Information Technology for Transforming Organisations" in *IBM Systems Journal*, 32(1), pp.4-16.
- Henry-Crawford, S.-M. (2003). *E-business Developments in UK SMEs: The road to the Emerald City*. Small Business Research Centre, Kingston University, Kingston.
www.sbaer.uca.edu/research/2003/icsb/pages/tx.htm (Accessed 29 November 2003).
- Hermann, G. (1999). "Exploring Narrative: Telling Stories and Making Connections" at *Archives and Museum Informatics (AMI) Museums and the Web 1999*, New Orleans, Louisiana, USA, March 11-14, 1999. <http://www.archimuse.com/mw99/papers/hermann/hermann.html> (accessed 16 September 1999).
- Hill, R. and Stewart, J. (2000). "Human Resource Development in Small Organisations" in *Journal of European Industrial Training*, 24(2/3/4), pp.105-117.
- Him, L.T.W. and Subramaniam, R. (2004). "E-Commerce as a Business Enabler for Small and Medium Size Enterprises: Issues and Perspectives from Singapore" in Corbitt, B.J. and Al-Qirim, N.A.Y. (Eds.), *e-Business, e-Government & Small and Medium-Sized Enterprises: Opportunities and Challenges*. IDEA Group Publishing, Hershey, pp.65-90.
- Hindle, T., Checkland, P.B., Mumford, M. and Worthington, D. (1995). "Developing a Methodology for Multidisciplinary Action Research: A Case Study" in *Journal of the OR Society* 46(4), pp.453-464
- Hirakubo, N. and Friedman, H.H. (2002). "Dot-Bombs: Lessons from the Dot-Com Debacle" in *Journal of Internet Commerce*, 1(2), pp.89-102.
- Hirschheim, R.A. (1992). "Information Systems Epistemology: An Historical Perspective" in Galliers, R. (Ed.), *Information Systems Research – Issues, Methods and Practical Guidelines*. Blackwell Scientific Publications, Oxford.
- Hirschheim, R., Klein, H.K. and Lyytinen, K. (1995). *Information System Development and Data Modelling: Conceptual & Philosophical Foundations*, Cambridge University Press, Cambridge.
-

-
- Hitchens, D. and O'Farrell, P. (1988). "The Comparative Performance of Small Manufacturing Located in the Mid-West and Northern Ireland" in *The Economic and Social Review*. 19(3), pp.429-438.
- HM Treasury, Inland Revenue. (2001a). *Designs for Innovation: A consultative note*. <http://www.hm-treasury.gov.uk/mediastore/otherfiles/ACF525.pdf> (Accessed 1 June 2002).
- HM Treasury, Inland Revenue. (2001b). *Increasing innovation*. <http://www.hm-treasury.gov.uk> (Accessed 1 June 2002).
- HM Treasury (2001c). *The Cross Cutting Review of Government Services for Small Business*. http://www.hm-treasury.gov.uk/Spending_Review/spend_ccr/spend_ccr_business.cfm (Accessed 7 October 2004).
- Hoffer J.A., George J.F. and Valacich, J.S. (1996). *Modern systems analysis and design*. The Benjamin/Cummings Publishing Company, Inc. Menlo Park, CA.
- Hoffman, D.L. and Novak, T.P. (1997). "A New Marketing Paradigm for Electronic Commerce" in *The Information Society*. 13(1), pp.43-54.
- Holwell, S. (1992). "SSM information approach: a critique" in *Systemist*. 14(3), pp.93-8.
- Hornby, G., Goulding, P. and Poon, S. (2002). "Perceptions of Export Barriers and Cultural Issues: the SME e-Commerce Experience" in *Journal of Electronic Commerce Research*. 3(4), pp.213-226.
- Howard, N., William G. and Guile, Bruce R. (1992). *Profiting from Innovation*. New York, NY, The Free Press.
- Howard, J.A. (1977). *Consumer Behaviour: Application of Theory*. McGraw-Hill, New York.
- Howarth, B. (2002). "Get 'e' or get out: Smaller companies are reluctant to take up e-commerce, and it will be to their cost" in *Business Review Weekly*. July 18-24, 2000, pp.64-65.
- Huang, C.D., Hart, P. and Wiley, M. (2004). "Factors Characterising IT Use in SMEs: An Exploratory Study" in *Proceedings of the 15th Information Resources Management Association (IRMA) Conference*. New Orleans, USA, 23-26 May, pp.1229-1230.
- Hult, M. and Lennung, S. (1980). "Towards a definition of action research: a note and bibliography" in *Journal of Management Studies*. No. 17, pp.241-250.
- Huse, F.E. (1980). *Organisational Development and Change*. West Publishing Co., St. Paul, MN.
- Hyland, T. and Matlay, H. (1997). "Small Businesses, Training needs and VET Provisions" in *Journal of Education and Work*. 10(2).
- Iacob, M-E., Boekhoudt, P. and Ebeling, F. (2004). "Helping SMEs to Engage in Electronic Commerce: The Dutch Way" in Corbitt, B.J. and Al-Qirim, N.A.Y. (Eds.), *e-Business, e-Government & Small and Medium-Sized Enterprises: Opportunities and Challenges*. IDEA Group Publishing, Hershey, pp.46-64.
- Iacovou, C.L., Benbasat, I. and Dexter, A.S. (1995). "Electronic Data Interchange and Small Organisations: Adoption and Impact of Technology" in *MIS Quarterly*. 19(4), pp.465-485.
-

-
- Ibbotson, P., Devaney, C. and Fahy, M. (2001). *The Impact of Electronic Commerce on the Business Growth Strategies of Irish Entrepreneurial Firms*. 2nd edition. University of Strathclyde Press, Glasgow, Scotland.
- IDC Research. (2001). "Major Growth Forecast" in *News Brief*, 17 October. <http://nua.ie/surveys> (Accessed 14 April 2002).
- IEI – The Internet Economy Indicators (2003). *Facts & Figures: The Internet and Business*. <http://www.internetindicators.com/facts.html> (Accessed 4 June 2003).
- Igbaria, M., Zinatelli, N. and Cavaye, A. L. M. (1998). "Analysis of information technology success in small firms in New Zealand" in *International Journal of Information Management*. 18, pp.103-119.
- Igbaria, M., Zinatelli, N., Cragg, P. and Cavaye, A. L. M. (1997). "Personal computing acceptance factors in small firms: A structural equation model" in *MIS Quarterly*. 21, pp.279-305.
- Ihlström, C. and Nilsson, M. (2000a). "SMEBIZ: Transforming t-Business to e-Business" in *Proceedings of the 23rd Information Systems Research Seminar in Scandinavia*, Sweden, pp.835-844. http://www.hh.se/ide/publications/publ.files00/smebiz_iris.pdf (Accessed 13 January 2001).
- Ihlström, Carina and Nilsson, Malin. (2000b). *SMEBIZ: Setting the Stage*. http://www.hh.se/ide/publications/publ.files00/smebiz_stage.pdf (Accessed 13 January 2001).
- Inland Revenue (2003). *Customer Service Standards*. <http://inlandrevenue.gov.uk/pdfs/cssn.htm> (Accessed 3 March 2004).
- Inland Revenue (2001). *The Carter Review of Payroll Services*. November, 2001. www.inlandrevenue.gov.uk/pbr2001/index.htm (Accessed: 7 October 2004).
- ICA – Institute of Chartered Accountants (2003). *Enterprise Survey UK Business Growth Plans and Barriers*. ICAEW, London.
- Irani, Z., Ezingard, J-N., Grieve, R.J. and Race, P. (1999). "A case study strategy as part of an information systems research methodology: a critique" in *International Journal of Computer Applications in Technology*. 12(2/3/4/5), pp.190-198.
- Irwin, D. (2000). *Enhancing the competitiveness of small businesses in the global economy: Enhancing the competitiveness of small businesses through innovation*. OECD. <http://www.sbs.gov.uk/content/pdf/oecd.pdf> (Accessed 3 August 2002).
- Jarratt, D.G. (1998). "A Strategic Classification of Business Alliances: A Qualitative Perspective Built from a Study of Small and Medium-sized Enterprises" in *Qualitative Market Research: An International Journal*. 1(1), pp.39-49.
- Jarvenpaa, S.L. and Tiller, E.H. (2000). "Integrating market, technology and policy opportunities in e-business strategy" in *Journal of Strategic Information Systems*. 8(3), September, pp.235-249.
- Jeal, B. and Wroe, J. (1999). *Innovation and Industry: The SME Standpoint*. Australian Department of Industry, Tourism and Resources. <http://isr.gov.au/industry/summit/reference/submissions/73-JealWroe.pdf> (Accessed 3 March 2000).
- Jeffcoate, J., Chappell, C. and Feindt, S. (2004). "Assessing the impact of electronic commerce on SMEs in value chains: a qualitative approach to Electronic Commerce" in Al-Qirim, N. (Ed.),
-

-
- Small-to-Medium-sized Enterprises: Frameworks, Issues and Implications*. Idea Group Publishing, Hershey, pp.180-198.
- Jeffcoate, J., Chappell, C. and Feindt, S. (2002). "Best practice in SME Adoption of E-commerce" in *Benchmarking: an International Journal, Electronic Commerce: a Best Practice Perspective*. 9(2), pp.122-132.
- Jeffcoate, J., Chappell C. and Feindt, S. (2000). "Attitudes Towards Process Improvement Amongst SMEs Involved in E-commerce" in *Journal of Knowledge and Process Management: Special Issue on 'The Business Process Phenomenon: Into the Era of E-business'*. 7(3), July-September, pp.187-195.
- Jennex, M.E., Amoroso, D. and Adelakun, O. (2004). "B2B E-Commerce Infrastructure Success Factors for Small Companies in Developing Economies" in Corbitt, B.J. and Al-Qirim, N.A.Y. (Eds.), *e-Business, e-Government & Small and Medium-Sized Enterprises: Opportunities and Challenges*. IDEA Group Publishing, Hershey, pp.185-205.
- Johannisson, B. and Monsted, M. (1997). "Contextualising Entrepreneurial Networking – The case of Scandinavia" in *International Studies of Management Organisation*. 27(3), 1997, pp.109-136.
- Johansson, U. (2003). *Regional Development in Sweden: October 2003*. Svenska Kommunförbundet. http://www.lf.svekom.se/tru/RSO/Regional_development_in_Sweden.pdf (Accessed December 14, 2003).
- JCESB – Joint Committee on Enterprise and Small Business (1999). *The Impact of E-commerce on Small and Medium Sized Enterprises*. Stationery Office, Dublin, Ireland.
- Jones, M. (1997). "Structuration and IS" in Currie, W.L. and Galliers, R.D. (Eds.) *Re-Thinking Management Information Systems*. Oxford University Press, Oxford.
- Jones, M. and Nandhakumar, J. (1993). "Structured development? A structurational analysis of the development of an executive information system" in Avison, D.E., Kendall, J.E., and DeGross, J.I. (Eds.). *Human, Organisational and Social Dimensions of Information System Development*. North Holland Press, Amsterdam.
- Jonsson, S. (1991). "Action Research" in Nissen, H-E., Klein, H.K. and Hirschheim, R. (Eds.), *Information Systems Research: Contemporary Approaches and Emergent Traditions*. Elsevier Science Publishers, North Holland.
- Jorde, T. and Teece, D. (1989). "Competition and Cooperation: Striking the Right Balance" in *Californian Management Review*. 31, pp.25-38.
- Julien, P., Joyal, A., Deshaies, L. and Ramangalahy, C. (1997). "A Typology of Strategic Behaviour among Small and Medium-sized Exporting Businesses: A Case Study" in *International Small Business Journal*. 14(2), pp.33-50.
- Jutla, D.N. (2004). "Building Infrastructure for SME Adoption of E-Business: The Canadian Experience" in Corbitt, B.J. and Al-Qirim, N.A.Y. (Eds.), *e-Business, e-Government & Small and Medium-Sized Enterprises: Opportunities and Challenges*. IDEA Group Publishing, Hershey, pp.19-45.
- Kagan, A., Lau, K. and Nusgart, K.R. (1990). "Information Systems Usage Within Small Business Firms" in *Entrepreneurship: Theory and Practice*. 14, Spring, 1990, pp.25-37.
- Kalakota, D.R. and Robinson, M. (1999). *E-Business: Roadmap for Success*. Addison-Wesley, Reading, Massachusetts.
-

-
- Kalakota, R. and Whinston, A. (1997). *Electronic Commerce: A Manager's Guide*. Addison-Wesley, Harlow.
- Kalakota, R. and Whinston, A. (1996). *Frontiers of Electronic Commerce*. Addison-Wesley, USA.
- Kandaswami, S. (1998). *Internationalisation of Small- and Medium-sized Born-Global Firms: A Conceptual Model*. Graduate School of Management, University of Western Australia.
- Kaplan, B. and Douchon, D. (1988). "Combining Qualitative and Quantitative Methods in Information Systems Research: A Case Study" in *MIS Quarterly*. 12(4), pp.571-587.
- Kaplan, B. and Maxwell, J.A. (1994). "Qualitative Research Methods for Evaluating Computer Information Systems," in Anderson, J.G., Ayden, C.E. and Jay, S.J. (Eds.), *Evaluating Health Care Information Systems: Methods and Applications*. Sage, Thousand Oaks, CA, pp.45-68.
- Kaplan, S. and Sawhney, M. (2000). "E-hubs: The new B2B marketplaces" in *Harvard Business Review*. May-June, pp.97-103.
- Keeble, D. (1998). "Growth Objectives and Constraints" in Cosh, A. and Hughes, A. (Eds.), *Enterprise Challenge Policy and Performance in the British SME Sector 1999-2002*. University of Cambridge, Cambridge Centre for Business Research.
- Keeble, D., Lawson, C., Moore, B. and Wilkinson, F. (1999). "Collective Learning Processes, Networking and 'Institutional Thickness' in the Cambridge Region" in *Regional Studies*. 33(4), pp.319-332.
- Keen, P. (1991). "Relevance and rigour in Information Systems research: improving quality, confidence, cohesion and impact" in Nissen, H-E., Klein, H.K. and Hirschheim, R. (Eds.), *Information Systems Research: Contemporary Approaches and Emergent Traditions*. Elsevier Science, North Holland.
- Kelley, M. and Helper, S. (1999). "Firm Size and Capabilities, Regional Agglomeration and the Adoption of New Technology" in *Economics of Innovation and New Technology*. 8(1-2), 1999, pp.79-103.
- Kemmis, S. and McTaggart, R. (Eds.), (1988). *The Action Research Planner*, 3rd edition. Deakin University Press, Victoria.
- Kendall, J.D., Tung, L.L., Chua, K.H., Hong, C., Ng, D. and Tan, S.M. (2001). "Receptivity of Singapore's SMEs to E-business Adoption" in *Journal of Strategic Information Systems*. 10(3), pp.223-242.
- Keniry, J., Blums, A., Notter, E., Radford, E. and Thomson, S. (2003). *Regional Business – A Plan for Action*. Department of Transport and Regional Services. http://www.rbda.gov.au/action_plan (Accessed December 13, 2003).
- Kennedy, K. and Healy, T. (1985). "Small-Scale Industry in Ireland" in Fitzpatrick, J. and Kelly, J. (Eds.), *Perspectives on Irish Industry*. Irish Management Institute, Dublin.
- Keown, Bob. (2002). "Opportunities for SMEs in FP6" presented at *European Research Area FRAMEWORK Programme 2002-2006 Conference*, 22 January 2002.
- Kets de Vries, M.F.R. (1977). "Organisations and Stress Reactions" in Kanungo, R. and Jain, H. (Eds.), *Issues in Management: The Canadian Context*. McGraw Hill, Toronto. pp.557-574.
-

-
- Khoo, D., McGill, T.J. and Dixon, M.W. (1998). *Use of the Internet by Small to Medium Enterprises in Singapore*. Murdoch University Press, Perth.
- Kim, Y. and Lee, B. (1998). "The Shake-out in Korea: How Small Firms Survive" in *Long Range Planning*. 31, pp.762-774.
- King, W.R. and Zmud, R.W. (1981). "Managing information systems: policy planning, strategic planning and operational planning" in *Proceedings of the Second International Conference on Information Systems*. Cambridge, MA, pp.299-308.
- Kirby, D. and Turner, M. (1993). "IT and the small retail business" in *International Journal of Retail and Distribution Management*. 21(7), pp. 20-27.
- Kirzner, I.M. (1973). *Competition and Entrepreneurship*. University of Chicago Press, Chicago.
- Klein, H.K. and Lyytinen, K. (1985). "The poverty of scientism in information systems" in Mumford, E., Hirschheim, R., Fitzgerald, G. and Wood-Harper, T. (Eds.), *Research Methods in Information Systems*. Elsevier, Amsterdam, pp.131-61.
- Klein, H. and Myers, M. (1999). "A set of principles for conducting and evaluation interpretive field studies in information systems" in *MIS Quarterly*. 23(1), March, pp.67-93.
- Kline, S.J. and Rosenberg, N. (1986). "An Overview of Innovation" in Landau, R. and Rosenberg, N. (Eds.), *The Positive Sum Strategy – Harnessing Technology for Economic Growth*. National Academy Press.
- Knights, D. and Murray, F. (1994). *Managers Divided Organisation Politics and Information Technology Management*. Wiley, Chichester.
- Kock, N. (1997). "Myths in Organisational Action Research: Reflections on a Study of Computer-Supported Process Redesign Groups" in *Organisations & Society*. 4(9), pp.65-91.
- Kock, N. and Lau, F. (2001). "Information Systems Action Research: Serving Two Demanding Masters" in *Information Technology & People* (Special Issue on Action Research in Information Systems). 14(1), pp.6-11.
- Kock, N.F., Jr., McQueen, R.J. and Scott, J.L. (1997), "Can Action Research be Made More Rigorous in a Positivist Sense? The Contribution of an Iterative Approach" in *Journal of Systems and Information Technology*. 1(1), pp. 1-24.
- Kotha, S., Rajgopal, S. and Rindova, V. (2001). "Reputation Building and Performance: An Empirical Analysis of the Top-50 Pure Internet Firms" in *European Management Journal*. 19(6), pp.571-586.
- Kotha, S. (1998). "Competing on the Internet: the Case of Amazon.com" in *European Management Journal*. 16(2), pp.212-222.
- Kowtha, N.R., and Choon, T.M.I. (2001). "Determinants of Website Development: A Study of Electronic Commerce in Singapore" in *Information & Management*. 39(3), pp.227-242.
- Kuan, K.K.Y. and Chau, P.Y.K. (2001). "A perception-based model for EDI adoption in small businesses using a technology-organisation-environment framework" in *Information and Management*. 38, pp.507-521.
-

-
- Kuemmerle, W. (2002). "A Test for the Fainthearted" in *Harvard Business Review*, May 2002, Reprint No. R0205J.
- Kulmala, H.I., Paranko, J. and Uusi-Rauva, E. (2002). "The Role of Cost Management in Network Relationships" in *International Journal of Production Economics*. 79(1), pp.33-43.
- Kwon, T.H. and Zmud, R.W. (1987). "Unifying the fragmented models of information systems implementation" in Boland, J. Jr. and Hirschheim, R.A. (Eds.), *Critical issues in information systems research*. John Wiley & Sons, Chichester, pp.227-248.
- Lachman, L.M. (1986). *The Market as Economic Process*. Blackwell, Oxford.
- Lacity, M.C. and Hirschheim, R.A. (1993). "The information systems outsourcing bandwagon" in *Sloan Management Review*. 35(1), pp.73-86.
- Lai, V.S. (1994). "A survey of rural small business computer use: success factors and decision support" in *Information and Management*. 26, pp.297-304.
- Landry, M. and Banville, C. (1992). "A disciplined methodological pluralism for MIS research" in *Accounting, Management & Information Technology*. 2(2), pp.77-97.
- Lambert, R. and Peppard, J. (1999). "Information technology and new organisational forms" in Galliers, R.D., Leidner, D.E. and Baker, B.S.H. (1999) *Strategic Information Management: Challenges and Strategies in Managing Information Systems*. 2nd Edition. Chapter 17. Butterworth-Heinemann, Oxford, pp.454-486.
- Langley, A. and Truax, J. (1994). "A process study of new technology adoption in smaller manufacturing firms" in *Journal of Management Studies*. 31, pp.619-652.
- Lanström, H., Frank, H. and Veciana, J.M. (1997). (Eds.), *Entrepreneurship and Small Business Research in Europe: An ECSB Survey*. Avebury, Aldershot.
- Larsson, E., Hedelin, L. and Gärling, T. (2003). "Influence of Expert Advice on Expansion Goals of Small Businesses in Rural Sweden" in *Journal of Small Business Management*. 41(2), pp.205-212.
- Latour, B. (1999). *Pandora's hope: essays on the reality of science studies*. Harvard University Press, Cambridge.
- Latour, B. (1987). *Science in action: how to follow scientists and engineers through society*. Harvard University Press, Cambridge.
- Lau, F. (1997). "A review on the use of action research in information systems studies" in Lee, A., Liebenau, J. and DeGross, J. (Eds.), *Information Systems and Qualitative Research*. Chapman & Hall, London, pp.31-68.
- Laudon, K.C. and Traver, C.G. (2001). *E-Commerce: Business, Technology, Society*. Addison-Wesley, Reading, Massachusetts.
- Law Society. (2000). The Law Society Solicitor Sole Practitioner Group. <http://www.spg.uk.com> (Accessed 15 April 2002).
- Lawler, E.E. III, Mohrman, A.M., Jr., Mohrman, S.A., Ledford, G.E., Jr., and Thomas G. Cummings & Associates (1985). *Doing Research that is useful for Theory and Practice*. Jossey-Bass, San Francisco.
-

- Lawrence, J.E. and Hughes, J. (2000). "Internet Usage by SMEs: A UK Perspective" in *Electronic Commerce: The End of the Beginning, 13th International Bled Electronic Commerce Conference*, Bled, Slovenia, pp.738-753.
- Lawrence, K.L. (1997). "Factors Inhibiting the Utilisation of E-business Facilities in Tasmanian Small-to-Medium Sized Enterprises" in *8th Australasian Conference on Information Systems*, pp.587-597.
- Lawson, R., Alcock, C. and Cooper, J. (2001). "e-Business Adoption by Manufacturing SMEs in Regional Australia" in O'Keefe, B., Loebbecke, C., Gricar, J., Pucihar, A. and Lenart, G. (Eds.). *14th Electronic Commerce Conference*, Bled, Slovenia, Vol.1, pp.656-676.
- Lymer, A. (1998). *UK business and the information superhighway: the impact of the internet on SMEs*. Certified Accountants Educational Trust, London, UK.
- Lee, C.S. (2001). "An Analytical Framework for Evaluating E-commerce Business Models and Strategies" in *Internet Research: Electronic Network Applications and Policy*, 11(4), pp.349-359.
- Lee, A.S. (1989a). "A Scientific Methodology for MIS Case Studies" in *MIS Quarterly*, 13(1), pp.32-50.
- Lee, A.S. (1989b). "Case Studies as Natural Experiments" in *Human Relations*, 42(2), pp.117-137.
- Lee, A.S., Baskerville, R.L. and Davies, L. (1992). "A Workshop on Two Techniques for Qualitative Data Analysis: Action Research and Ethnography" in *Proceedings of the Thirteenth International Conference on Information Systems*, pp.305-306.
- Lee, C.S. (2001). "An analytical Framework for Evaluating E-commerce Business Models and Strategies" in *Internet Research: Electronic Network Applications and Policy*, 11(4), pp.349-359.
- Lee, J. and Runge, J. (2001). "Adoption of Information Technology in Small Business: Testing Drivers of Adoption for Entrepreneurs" in *Journal of Computer Information Systems*, 42(1), pp.44-57.
- Lefebvre, E., Lefebvre, L.A. and Prefontaine, L. (1999). "The Role of Technological Capabilities in the Internationalisation of R&D Intensive SMEs" presented at 32nd AICSS.
- Lefebvre, L. and Lefebvre, E. (1993). "Competitive Positioning" in *Small Business Economics*, 5, pp.297-305.
- Lei, D. and Slocum, J.W. (1992). "Global Strategy, Competence-Building and Strategic Alliances" in *California Management Review*, Fall, pp.81-97.
- Leidner, D.E. (1999a). "Virtual Partnerships in support of Electronic Commerce" in *Journal of Strategic Information Systems*, 8, pp.105-117.
- Leidner, D.E. (1999b). "Information technology and organisational culture" in Galliers, R.D., Leidner, D.E. and Baker, B.S.H. (Eds.), *Strategic Information Management: Challenges and Strategies in Managing Information Systems*, 2nd Edition, Chapter 19, Butterworth-Heinemann, Oxford, pp.523-550.
- Leo, H. and Booth, G. (2001). *European Trend Chart on Innovation. Country Report: Principality of Liechtenstein*. Covering period January 2001-June 2001. European Commission Enterprise Directorate-General Innovation/SMEs Programme.

http://trendchart.cordis.lu/reports/documents/liechtenstein_cr_june.2001.pdf (Accessed 4 October 2001).

Levy, M., Loebbecke, C. and Powell, P. (2001). "SMEs, Co-opetition and knowledge sharing: The IS role" in Smithson, S., Gricar, J., Podlogar, M. and Avgerinou, S. (Eds.), *9th European Conference on Information Systems*. Bled, Slovenia, June 27-29, pp.640-652.

Levy, M. and Powell, P. (2002). "SME Internet Adoption: Towards a transporter model" in *15th Bled Electronic Commerce Conference Proceedings, e-Reality: Constructing the e-Economy*. Bled, Slovenia, June 17-19. pp.507-521.

Levy, M. and Powell, P. (2000). "IS Strategies for SMEs: an organisational perspective" in *Journal of Strategic Information Systems*. 9(1), pp.63-84.

Levy, M. and Powell, P. (1998). "SME flexibility and the role of information systems" in *Small Business Economics*. 11, pp.183-196.

Levy, M., Powell, P. and Galliers, R. (1999). "Assessing information systems strategy development frameworks in SMEs" in *Information and Management*. 36, pp. 247-261.

Levy, M., Powell, P. and Yetton, P. (2001a). "SMEs: aligning IS and the strategic context" in *Journal of Information Technology*. 16, pp.133-144.

Levy, M., Powell, P. and Yetton, P. (2001b). "Critical Issues for Growing IS Capabilities in SMEs" in *Small Business Economics*. 19(4), pp.341-354.

Lewin, K. (1951). "The Process of Organisational Change" in Cartwright, D. (Ed.), *Field Theory in social science: selected theoretical papers*. Harper & Row, New York.

Lewis, M. and Grimes, A. (1999). "Metatriangulation: Building theory from multiple paradigms" in *Academic Management Review*. 24(4), pp.672-690.

Lipset, S.M., Trow, M. and Coleman, J.S. (1956). *Union Democracy*. Free Press, New York.

Lloyds TSB (2003). *Business Start-Up Research*.

[http://www.mediacentre.lloydstsb.com/media/docs/2003/nov/sixty_per_cent_of Britons have considered being their own boss.doc](http://www.mediacentre.lloydstsb.com/media/docs/2003/nov/sixty_per_cent_of_Britons_have_considered_being_their_own_boss.doc) (Accessed 28 September 2004).

Local Futures Group (2001). *E-London and the London Plan: A Report to the GLA from the Local Futures Group*. <http://www.localfutures.com> (Accessed: 27 August 2003).

Lockett, N.J. and Brown, D.H. (2000). "eClusters: the potential for the emergence of digital enterprise communities enabled by one or more intermediaries in SMEs" in *Knowledge and Process Management*. 7(3), pp.196-206.

Loebbecke, C. and Schäfer, S. (2001). "Web portfolio based electronic commerce: the case of transtec AG" in *Logistics Information Management*. 14, pp.54-67.

Lofsten, H. and Lindelof, P. (2002). "Science parks and the growth of new technology-based firms: academic-industry links, innovation and markets" in *Research Policy*. 31, pp.859-876.

Lymer, A., Nayak, A., Johnson, R. and Spaul, B. (1998). *UK Business and the Information Superhighway: The Impact of the Internet on Small and Medium Sized Businesses*. Certified Accountants Educational Trust for The Association of Chartered Certified Accountants, London.

-
- Lyytinen K. (1999). "Empirical Research in Information Systems: On the Relevance of Practice in Thinking of IS Research" in *MIS Quarterly*. 23(1), March, pp.25-28.
- Lyytinen K. (1987). "A taxonomic perspective of Information System Development: Theoretical Constructs and Recommendations" in Boland, R. and Hirschheim, R. (Eds.), *Critical Issues in Information Systems Development*. John Wiley & Sons, London. pp.3-41.
- Lyytinen, K. and Klein, H. (1985). "The critical theory of Jurgen Habermas as a basis for a theory of information systems" in Mumford, E., Hirschheim, R., Fitzgerald, G. and Wood-Harper, T. (Eds.), *Research Methods in Information Systems*. Elsevier, Amsterdam, pp.219-31.
- MacGregor, R.C. and Bunker, D.J. (1996). "The Effects of Priorities Introduced During Computer Acquisition on Continuing Success with IT in Small Business Environments" in *Information Resource Management Association International Conference*, Washington, pp.271-277.
- MacGregor, R., Vrazalic, L., Bunker, D., Carlsson, S. and Magnusson, M. (2004). "Comparison of Factors Pertaining to the Adoption and Non-Adoption of Electronic Commerce in Formally Networked and Non-Networked Regional SMEs: A Study of Swedish Small Businesses" in Corbitt, B.J. and Al-Qirim, N.A.Y. (Eds.), *e-Business, e-Government & Small and Medium-Sized Enterprises: Opportunities and Challenges*. IDEA Group Publishing, Hershey, PA, pp.206-243.
- MacGregor, R.C., Bunker, D.J. and Waugh, P. (1998). "E-business and Small/Medium Enterprises (SMEs) in Australia: An Electronic Data Interchange (EDI) Pilot Study" in *Proceedings of the 11th International Bled E-business Conference*, Slovenia.
- Magnusson, M. (2001). "E-commerce in small businesses – focusing on adoption and implementation" presented at *1st Nordic Workshop on Electronic Commerce*, Halmstad, Sweden, May 28-29, 2001.
- Mahdjoubi, D. (1997). *Regional Innovation Strategies in the European Community*. http://www.gslis.utexas.edu/~darius/ris_ec/ris_ec.html (Accessed 3 July 2001).
- Mahdjoubi, D. (1996b). "An Innovation Model for the Real World" in *Engineering Dimensions*. January/February 1996.
- Maidique, M.A. (1980). "Entrepreneurs, Champions and Technological Innovation" in *Sloan Management Review* (Winter).
- Mansfield, E. (1968). *Industrial Research and Technological Innovation*. Norton, NY.
- Marchewka, J.T. and Towell, E.R. (2000). "A Comparison of Structure and Strategy in E-business" in *Information Technology and People*. 13(2), pp.137-149.
- Markland, R.E. (1974). "The Role of the Computer in Small Business Management" in *Journal of Small Business Management*. 12(1), pp.21-26.
- Markus, M.L. (1989). "Case Selection in a Disconfirmatory Case Study" in *The Information Systems Research Challenge*. Harvard Business School Research Colloquium, Harvard Business School, Boston, MA, pp. 20-26.
- Markus, M.L. and Benjamin, R.I. (1999). "Change Management Strategy: Change agency – the next information systems frontier" in Galliers, R.D., Leidner, D.E. and Baker, B.S.H. (1999)
-

Strategic Information Management: Challenges and Strategies in Managing Information Systems. 2nd Edition. Chapter 6. Butterworth-Heinemann, Oxford, pp.123-155.

Marshall, C. and Rossman, G. (1989). *Designing Qualitative Research*. Sage Publications Inc, CA.

Martensson, P. and Lee, A.S. (2004). *Dialogical Action Research at Omega Corporation*. ESRC Transdisciplinary Research Seminar Series. Department of Information Systems, London School of Economics, London, 18 March 2004.

Martin, C.J. (1989). "Information Management in the Smaller Business: The Role of the Top Manager" in *International Journal of Information Management*. 9(3), pp.187-197.

Martin, L.M. (2001). "E-commerce and existing small firms: a West Midlands pilot study of SME Internet use" in *Second International European Trade Study Group Conference, Glasgow, September*.

Martin, L.M. and Matlay, H. (2001). "'Blanket' Approaches to Promoting ICT in Small Firms: Some Lessons from the DTI Ladder Adoption Model in the UK" in *Internet Research: Electronic Networking Applications and Policy*. 11(5), pp.399-410.

Mason, H. and Rohner, T. (2002). *The Venture Imperative: A New model for Corporate Innovation*. Harvard Business School Press, Cambridge, MA.

Mathiyalakan, S. (2003). "A Longitudinal Examination of Web Technology Adoption and Implementation in Small and Micro Sized Businesses" in *Journal of E-Business*. 3(2), December 2003, pp.1-17.

Matlay, H. and Fletcher, D. (2000). "Globalisation and strategic change: some lessons from the UK small business sector" in *Strategic Change*. 9(7), pp.437-449.

Maynard, R. (1996). "Striking the right match" in *Nation's Business*. 84(5), pp.18-20.

Mayon-White, W. (1993). "Problem Solving in Small Groups" in Mabey, C. and Mayon-White, W. (Eds.), *Managing Change*. Paul Chapman, London.

Mazzarol, T., Volery, T., Doss, N. and Thein, V. (1999). "Factors Influencing Small Business Start-ups" in *International Journal of Entrepreneurial Behaviour and Research*. 5(2), pp.48-63.

McAdam, R., Stevenson, P. and Armstrong, G. (2000). "Innovative change management in SMEs: beyond continuous improvement" in *Logistics Information Management*. 13, pp.138-149.

McClelland, D.C. (1961). *The Achieving Society*. New York. Van Nostrand Reinhold.

McFarlan, F.W. (1984). "Information technology changes the way you compete" in *Harvard Business Review*. 62(3), May-June, pp.98-102.

McFarlan, F.W. (1981). "Portfolio Approach to Information Systems" in *Harvard Business Review*. 59(5), September/October, pp.142-150.

McFarlan, F.W., McKenney, J.L. and Pyburn, P. (1983). The Information Archipelago: Plotting a Course" in *Harvard Business Review*. 61(1), January/February, pp.145-155.

McKay, J. and Marshall, P. (2001). "The dual imperatives of action research" in *Information Technology & People*. 14(1), 2001, pp.46-59.

-
- McKay, J. and Marshall, P. (1999a). "The poverty of action research in information systems" in *Proceedings of the UKSS Conference*. Lincoln Business School, Lincoln, July.
- McKenna, R. (1997). *Real Time: Preparing for the Age of the Never Satisfied Customer*. Harvard Business School Press, Boston.
- McLarty, R. (1998). "The Skills Development Needs of SMEs and Focus on Graduate Skills Application" in *Journal of Applied Management Studies*, Autumn.
- McMahon, J. (1994). "Employee Relations in Small Firms" in Gunnigle, P., Flood, P., Morley, M. and Turner, T. (Eds.), *Continuity and Change in Irish Employee Relations*. Oak Tree Press, Dublin.
- McWilliams, G. (1995). "Small fry go online" in *Business Week*. November 20, pp.158-164.
- Mehrtens, J., Cragg, P.B. and Mills, A.M. (2001). "A Model of Internet Adoption by SMEs" in *Information and Management*. 39, pp.165-176.
- MIEC – Ministry of Industry Employment and Communications (2003). *The European Charter for Small Enterprises: A Review of relevant actions and measures in Sweden*.
http://europa.eu.int/comm/enterprise/enterprise_policy/charter/index.htm (Accessed December 12, 2003).
- Miesenbock, J.K. (1988). "Small business and exporting" in *International Small Business Journal*. 6, pp.42-61.
- Miles, G., Preece, S. and Baetz, M.C. (1999). "Dangers of Dependence: The Impact of Strategic Alliance Use by Small Technology Based Firms" in *Journal of Small Business Management*. 37, pp.20-29.
- Miles, M.B. and Huberman, A.M. (1984). *Qualitative Data Analysis: Sourcebook of New Methods*. Sage Publications, California.
- Millar, A.S. (2000). *Antitrust implications of B2B E-Commerce under scrutiny*. <http://www.khlaw.com> (Accessed 21 September 2000).
- Miller, N.L. and Besser, T.L. (2000). "The Importance of Community Values in Small Business Strategy Formation: Evidence from Rural Iowa" in *Journal of Small Business Management*. 38(1), pp.68-85.
- Miller, D. and Droge, C. (1986). "Psychological and Traditional Determinants of Structure" in *Administrative Science Quarterly*. 31, pp.539-560.
- Miller, D. and Toulouse, J.M. (1986). "Strategy, Structure, CEO Personality and Performance: An Empirical Study of Small Firms" in *American Journal of Small Business*. 10(3), pp.47-62.
- Mingers, J. (2006). "A Critique of Statistical Modeling in Management Science from a Critical Realist Perspective: Its Role Within Multimethodology" in *Journal of Operational Research Society*. 57(2), pp.202-219.
- Mingers, J. (2004). "Future Directions in Management Science Modeling: Critical Realism and Multimethodology" in Fleetwood, S. and Ackroyd, S. (Eds.), *Critical Realist Applications in Organisation and Management Studies*. Routledge, London, pp.164-193.
-

-
- Mingers, J. (2001a). "Combining IS Research Methods: Towards a Pluralist Methodology" in *Information Systems Research*. 12(3), September 2001, pp.240-259.
- Mingers, J. (2001b). "Multimethodology – Mixing and Matching Methods" in Rosenhead, J. and Mingers, J. (Eds.), *Rational Analysis for a Problematic World Revisited: Problem Structuring Methods for Complexity, Uncertainty and Conflict*. 2nd Edition. John Wiley & Sons, Ltd, Chichester, pp.289-309.
- Mingers, J. (2000). "Variety is the spice of life: combining soft and hard OR/MS methods" in *International Transactions in Operational Research*. 7, pp.673-91.
- Mingers, J. (1999). "Synthesising constructivism and critical realism: Towards critical pluralism" in Mathijs, E., Van der Veken, J. and Van Belle, H. (Eds.), *World Views and the Problem of Synthesis*. Kluwer Academic, Amsterdam, The Netherlands, pp.187-204.
- Mingers, J. (1997). "Towards critical pluralism" in Mingers, J. and Gill, A. (Eds.), *Multimethodology: Towards Theory and Practice and Mixing and Matching Methodologies*. Wiley, Chichester, pp.407-440.
- Mingers, J. (1995). "Using Soft Systems Methodology in the Design of Information Systems" in Stowell, F. (Ed.), *Information Systems Provision: The Contribution of Soft Systems Methodology*. McGraw-Hill, London, pp.18-74.
- Mingers, J. and Brocklesby, J. (1997). "Multimethodology: Towards a framework for mixing methodologies" in *Omega*. 25(5), pp.489-509.
- Mingers, J. and Gill, A. (Eds.), (1997). *Multimethodology: Towards Theory and Practice and Mixing and Matching Methodologies*. Wiley, Chichester.
- Mintzberg, H. (1994). *The Rise and Fall of Strategic Planning*. Prentice Hall, Hemel Hemstead.
- Mintzberg, H. and Quinn, J. (1996). *The Strategy Process: Concepts, Contexts, Cases*. Prentice Hall, Hemel Hemstead.
- Mirchandani, D.A. and Motwani, J. (2001). "Understanding Small Business Electronic Commerce Adoption: An Empirical Analysis" in *Journal of Computer Information Systems*. 41(3), pp.70-73.
- Mole, K. (2002). "Business advisers' impact on SMEs: An agency theory approach" in *International Small Business Journal*. 20(2), pp.139-162.
- Mohr, L.B. (1982). *Explaining Organisational Behaviour: The Limits and Possibilities of Theory and Research*, Jossey-Bass, San Francisco.
- Möller, K.E.K. (1992). *Interorganisational Marketing Exchange: Theoretical Analysis of Dominant Research Approaches*. ELASM Working Paper 92-07, Brussels.
- Montazemi, A.R. (1988). "Factors affecting information satisfaction in the context of the small business environment" in *MIS Quarterly*. June, pp.239-56.
- Mouggayer, W. (1998). *Opening Digital Markets*. McGraw Hill, New York.
- Mowery, D., Oxley, J. and Silverman, B. (1996). "Strategic Alliances and Inter-firm Knowledge Transfer" in *Strategic Management Journal*. 17, pp.77-91.
- Mulhern, A. (1995). "The SME Sector in Europe: A Broad Perspective" in *Journal of Small Business Management*. 3, July 1995, pp.83-87.
-

-
- Mullins, R., Duan, Yanqing, and Hamblin, D. (2001). "A pan-European survey leading to the development of WITS" in *Internet Research: Electronic Networking Applications and Policy*. 11(4), pp.333-340.
- Mumford, E. (2001). "Advice for an action researcher" in *Information Technology & People* (Special Issue on Action Research in Information Systems). 14(1), pp.12-27.
- Murphy, J. (1996). *Small Business Management*. Pitman, London.
- Murphy, E. (1996). "Electronic systems after the buying process" in *Purchasing*, 15 February, pp.29-30.
- Munro, I. and Mingers, J. (2000). *The use of multimethodology in practice – results of a survey of practitioners*. Warwick Business School, Coventry.
- Myers, M.D. (1997). "Qualitative Research in Information Systems" in *MIS Quarterly*, 21(2) June, pp.241-242. <http://misq.org/misqd961/isworld/> (Accessed 2 June 2003).
- Myers, M.D. (1994a). "A disaster for everyone to see: an interpretive analysis of a failed IS project" in *Accounting, Management and Information Technologies*. 4(4), pp.185-201.
- Myers, M.D. (1994b). "Dialectical hermeneutics: a theoretical framework for the implementation of information systems" in *Information Systems Journal*. 5(1), pp.51-70.
- Nalebuff, B.J. and Brandenburger, A.M. (1996). *Co-opetition*. Harper Collins Business, Philadelphia.
- Nandhakumar, J. and Jones, M. (1997). "Too close for comfort? Distance and engagement in interpretive information systems research" in *Information Systems Journal*. 7, pp.109-131.
- National Research Council (2000). *Surviving Supply Chain Integration: Strategies for Small Manufacturers*, Commission on Engineering and Technical Systems. <http://books.nap.edu/books/0309068789/html/R1.html> (Accessed 2 June 2003).
- Nauwelaers, C. and Wintjes, R. (2000). *SME Policy and the Regional Dimension of Innovation: Towards a New Paradigm for Innovation Policy?* (SMEPOL). MERIT Research Memorandum, No. 00-23. MERIT, University of Maastricht. <http://www.edocs.unimaas.nl/files/mer0023.pdf> (Accessed 20 March 2001).
- Nauwelaers, C. and Reid, A. (1995). *Innovative Regions? A comparative review of methods of evaluating regional innovation potential*. Louvain-La-Neuve. Rider.
- Naylor, J.B. and Williams, J. (1994). "The successful use of IT in SMEs on Merseyside" in *European Journal of Information Systems*. 3(1), pp.48-56.
- Neergaard, P. (1992). "Microcomputers in small and medium-size companies: Benefits achieved and problems encountered" in *Proceedings of the Third Australian Conference on Information Systems (ACIS)*. University of Wollongong, pp.579-604.
- Nelson, R.R. and Winter, S.G. (1982). *An Evolutionary Theory of Economic Change*. Belknap Press, Cambridge, Mass.
-

-
- Nelson, R.R. and Winter, S.G. (1977). "Dynamic Competition and Technical Progress" in Balassa, B. and Nelson, R.R. (Eds.), *Economic Progress, Private Values, and Public Policy: Essays in Honor of William Fellner*, North-Holland, Amsterdam.
- NetValue. (2000). *European Internet Statistics*. November, NetValue, Paris. http://www.netvalue.com/corp/presse/index_frame.htm?fichier=cp0016.htm (Accessed 25 May 2003).
- Nicoletti, G. (2000). *Summary Indications of Product Market Regulation with an Extension to Employment Protection Legislation*. OECD, Paris.
- Nilsson, A.G. (1999). "The business developer's toolbox: Chains and alliances between established methods" in Nilsson, A.G., Tolis, C. and Nellborn, C. (Eds.), *Perspectives on Business Modelling – Understanding and Changing Organisations*. Springer, Berlin.
- NOIE (The National Office for the Information Economy). (2002). *e-Business for Small Business*. <http://www.noie.gov.au/projects/ebusiness/Advancing/SME/> (Accessed 25 May 2003).
- Nonaka, I. and Takeuchi, H. (1995). *The Knowledge-Creating Company*. Oxford University Press, New York, NY.
- Nunes, N. and Cunha, J. (2000). "Wisdom: A Software Engineering Method for Small Software Development Companies" in *IEEE Software*. 17(5), pp.113-119.
- Oakey, R. (1985). "Innovation and regional growth in small high technology firms: evidence from Britain and the USA" in Storey, D.J. (Ed.), *Small Firms in regional economic development: Britain, Ireland and the United States*. Cambridge University Press, Cambridge.
- O'Connor, G.C. and O'Keefe, B. (1997). "Viewing the Web as a marketplace: The case of small companies" in *Decision Support Systems*. 21(3). pp.171-183.
- O'Connor, B. and Trauth, E.M. (1991). "A Study of the Interaction between Information Technology and Society: an illustration of combined qualitative research methods" in Nissen, H.-E., Klein, H.K. and Hirschheim, R. (Eds.), *Information Systems Research: Contemporary Approaches and Emergent Traditions*. North-Holland, Amsterdam, pp.131-144.
- O'Donnell, A., Gilmore, A., Cummins, D. and Carson, D. (2001). "The Network Construct in Entrepreneurship Research: A Review and Critique" in *Management Decision*. 39(9), pp.749-760.
- OECD – Organisation for Economic Co-operation and Development. (2002a). *Competition, innovation and productivity growth: a review of theory and evidence*. Economics Department Working Paper G17, OECD, Paris.
- OECD. (2002b). *Small and Medium Enterprise Outlook*. December.
- OECD. (2000a). *OECD Information Technology Outlook 2000*. OECD, Paris. <http://www.oecd.org> (Accessed 3 March 2001).
- OECD. (2000b). *The Bologna Charter on SME Policies*. www.oecd.org (Accessed 3 March 2001).
- OECD. (2000c). "Small and Medium-sized Enterprises: Local Strength, Global Reach" in *OECD Policy Review*. June, pp.1-8.
-

-
- OECD. (1999). *Economic Outlook No. 66*. OECD. December. www.oecd.org (Accessed 3 March 2001).
- OECD. (1998a). *A global marketplace for SME: OECD Review of SME Internet Sites*. www.oecd.org (Accessed 3 March 2001).
- OECD. (1998b). *SMEs and electronic commerce, Ministerial Conference on Electronic Commerce*. Ottawa, Canada, 7-9 October 1998.
- OECD. (1997a). *Dismantling the barriers to global electronic commerce*. October 1997. <http://www.oecd.org/dsti/it/prod/dismantl.htm> (Accessed 1 September 2000).
- Oftel (2002a). *Business Use of the Internet: Oftel Small and Medium Business Survey*. 7 November 2001. <http://www.oftel.gov.uk/publications/research/2002/g7intb0202.pdf> (Accessed: 27 August 2003).
- Oftel (2002b). *Business Use of Internet: Oftel Small and Medium Business Survey, Q8 February 2002*. <http://www.oftel.gov.uk/publications/research/2002/g8intb0502.htm> (Accessed: 27 August 2003).
- O'Keefe, R. M. and McEachern, T. (1998). "Web-based customer decision support systems" in *Communications of the ACM*. 41(3), pp.71-78.
- Olave, M.E.L. and Neto, J.A. (2001). "Managing Innovation: The Point of View of SME's Networks in Brazilian Electronic Industry" in *Proceedings of the Twelfth Annual Conference of the Production and Operations of Management Society, POM-2001*.
- O'Neill, J. (2000). "Innovation through e-Commerce: Implementing e-Commerce Solutions in SMEs" presented at *Innovation through e-Commerce Third International Conference, UMIST*. November, 2000. <http://www.staffs.ac.uk/CEBS/conference.doc> (Accessed 1 May 2001).
- ONS (2001). *Labour Force Survey 2001*. Office for National Statistics. www.statistics.gov.uk/StatBase/Source.asp?vlnk=358&More=Y
- Orlikowski, J. (2000). "Using Technology and Constituting Structures: A Practice Lens for Studying Technology in Organisations" in *Organisation Science*. 11(4), July-August, pp.404-428.
- Orlikowski, W.J. (1993). "CASE Tools as Organisational Change: Investigating Incremental and Radical Changes in Systems Development" in *MIS Quarterly*. 17(3), September, pp.309-340.
- Orlikowski, W.J. (1992). "The Duality of Technology Rethinking the Concept of Technology in Organisations" in *Organisation Science*. 3(3), pp.398-429.
- Orlikowski, W.J. and Baroudi, J.J. (1991). "Studying Information Technology in Organisations: Research Approaches and Assumptions" in *Information Systems Research*. 2(1), pp.1-28.
- Orlikowski, W. and Iacono, S. (2001). "Desperately Seeking the "IT" in IT Research – A Call to Theorising the IT Artifact" in *Information Systems Research*. 12(2), pp.121-134.
- Orlikowski, W. and Robey, D. (1991a). "IT and the Structuring of Organisations: research approaches and assumptions" in *Information Systems Research*. 2(1), pp.1-28.
- Orlikowski, W. and Robey, D. (1991b). "Information technology and the structuring of organisations" in *Information Systems Research*. 2(2), pp.398-427.
-

-
- Ormerod, R. (2001). "Mixing Methods in Practice" in Rosenhead, J. and Mingers, J. (Eds.), *Rational Analysis for a Problematic World Revisited: Problem Structuring Methods for Complexity, Uncertainty and Conflict*. 2nd Edition. John Wiley & Sons, Chichester, pp.311-335.
- Ormerod, R. (1996). "Putting soft OR methods to work – information systems strategy development at Richards Bay" in *Journal of the Organisational Research Society*. 47(9), pp.1083-1097.
- Oswald, S.L. and Jahera, J.S. (1991). "The influence of ownership on performance: An empirical study" in *Strategy Management Journal*. 12, pp.321-326.
- Owens, I. and Beynon-Davies, P. (2001). "A survey of electronic commerce utilisation in small and medium sized enterprises in South Wales" in Smithson, S., Gricar, J., Podlogar, M. and Avgerinou, S. (Eds.), *9th European Conference on Information Systems*. Bled, Slovenia, June 27-29, pp.461-467.
- Overby, J.W. and Min, S. (2001). "International Supply Chain Management in an Internet Environment: A Network-Oriented Approach to Internationalisation" in *International Marketing Review*. 18(4), pp.392-420.
- Oxley, J.E. and Yeung, B. (2001). "E-business Readiness: Institutional Environment and International Competitiveness" in *Journal of International Business Studies*. 32(4), pp.705-723.
- Ozcan, G. (1995). "Small Business Networks and Local Ties in Turkey" in *Entrepreneurship and Regional Development*. 7, pp.265-282.
- Pahl, R. E. (1984). *Divisions of Labour*, Oxford, Basil Blackwell.
- Palumbo, F. and Herbig, P. (1998). "International Marketing Tool: the Internet" in *Industrial Management and Data Systems*. 98, pp.253-261.
- Palvia, P.C. and Palvia, S.C. (1999). "An Examination of the IT Satisfaction of Small-Business Users" in *Information and Management*. 35, pp.127-137.
- Papazafeiropoulou A., Pouloudi A. and Doukidis G. (2002). "A Framework for Best Practices in e-business Awareness Creation" in *Business Process Management Journal*. 8(3), pp.233-244.
- Pare, G. and Elam, J.J. (1997). "Using Case Study Research to Build Theories of IT Implementation" in Lee, A.S., Liebenau, J. and DeGross, J.I. (Eds.), *Information Systems and Qualitative Research*. Chapman and Hall, London, pp.542-568.
- Parker, C.M. and Swatman, P.M.C. (1997). "TREAT: Promoting SME adoption of EDI through education" in *Proceedings of HICSS-29*. Hawaii, January 1997, pp.387-396.
- Peel, M.J. and Bridge, J. (1998). "How Planning and Capital Budgeting Improve SME Performance" in *Long Range Planning*. 31, pp.848-856.
- Peppard, J. and Ward, J. (1999). "Mind the gap: Diagnosing the relationship between the IT organisation and the rest of the business" in *Journal of Strategic Information Systems*. 8(2), pp.29-60.
- Peppers, D. and Rogers, M. (1997). *Enterprise One to One – Tools for Competing in the Interactive Age*. Doubleday, New York.
- Pettigrew, A.M. (1990). "Longitudinal field research on change: Theory and practice" in *Organisational Science*. 1(3), pp.267-292.
-

-
- Pettigrew, A.M. (1989). "Issues of Time and Site Selection in Longitudinal Research on Change" in *The Information Systems Research Challenge: Qualitative Research Methods, Vol. 1*, Harvard Business School Press, Boston.
- Pettigrew, A.M. (1988). "Longitudinal field research on change: Theory and practice" presented at the *National Science Foundation Conference on Longitudinal Research Methods in Organisations*. Austin, TX.
- Pettigrew, A.M. (1983). "Contextualist Research: A Natural Way to Link Theory and Practice" in *Proceedings of the Conference on Conducting Research with Theory and Practice in Mind*. Center for Effective Organisations, University of Southern California, November, 1983.
- Peypoch, R.J. (1998). "The Case for Electronic Business Communities" in *Business Horizons*. 41(5), pp.17-21.
- Phan, D.D. (2001). "E-business Management Strategies: A Business-to-Business Case Study" in *Information Systems Management*. Fall, pp.61-69.
- Pigni, F., Faverio, P., Moro, J. and Buonanno, G. (2004). "Information and Communication Technologies and Small-Medium Enterprises" in *Proceedings of the 15th Information Resources Management Association (IRMA) Conference*. New Orleans, USA, 23-26 May, pp.668-672.
- Pinker, S. (2002). *The Blank Slate: The Modern Denial of Human Nature*. Viking Penguin.
- Pitt, L., Berthon, P. and Berthon, J.-P. (1999). "Changing Channels: The Impact of the Internet on Distribution Strategy" in *Business Horizons*. March/April.
- Plotkin, Hal. (2002). "Is Risk the Cost of Innovation?" in *Harvard Management Communication Letter*. 4/1/02. Product Number: C0204D.
- Pollard C.E. and Hayne S.C. (1988). "The Changing Faces of Information Systems Issues in Small Firms" in *International Small Business Journal*. 16(3), pp.70-87.
- Poon, S. (2000). "Business environment and internet commerce benefit - a small business perspective" in *European Journal of Information Systems*. 9, pp.72-81.
- Poon, S. and Joseph, M. (2001). "A Preliminary Study of Product Nature and E-business" in *Marketing Intelligence & Planning*. 19(7), pp.493-499.
- Poon, S. and Joseph, M. (2000). "Product characteristics and Internet commerce benefit among small businesses" in *Journal of Product and Brand Management*. 9(1). pp.21-34.
- Poon, S. and Strom, J. (1997). "Small Business Use of the Internet: Some Realities" in *Association for Information Systems Americas Conference*. Indianapolis.
- Poon, S. and Swatman, P. (1999a). "A Longitudinal Study of Expectations in Small Business Internet Commerce" in *International Journal of Electronic Commerce*. 3(3), pp.21-33.
- Poon, S. and Swatman, P. (1999b). "An exploratory study of small business internet commerce issues" in *Information & Management*. 35. pp.9-18.
- Poon, S. and Swatman, P.M.C. (1998a). "A Combined-method Study of Small Business Internet Commerce" in *International Journal of Electronic Commerce*. 2(3). pp.31-46.
-

-
- Poon, S. and Swatman, P.M.C. (1998b). "Small Business Internet Commerce Experiences: A Longitudinal Study" in *Proceedings of the 11th International Bled Electronic Commerce Conference*. Bled, Slovenia.
- Poon, S. and Swatman, P.M.C. (1997a). "Small business use of the Internet" in *International Marketing Review*. 14(5). pp.385-402.
- Poon, S. and Swatman, P. (1997b). "Internet-based Small Business Communication: Seven Australian Cases" in Schmid, Beat F., Selz, Dorian. E.M. (Eds.), *Electronic Commerce in Asia: EM – Electronic Markets*. 7(2), March.
http://www.electronicmarkets.org/netacademy/publications.nsf/all_pk/89 (Accessed 22 October 2000).
- Poon, S. and Swatman, P. (1997c). "The Internet for Small Businesses: An Enabling Infrastructure" in *Fifth Internet Society Conference*. pp.221-231.
- Poon, S. and Strom, J. (1997d). "Small Business Use of the Internet: Some Realities" in *Association for Information Systems Americas Conference*. Indianapolis.
- Poon, S. and Swatman, P.M. (1996a). "Small Business Alliances: A Framework for Internet-Enabled Strategic Advantage" in Nunamaker, R.F. and Sprague, R.H. (Eds.), *Proceedings of the 29th Annual Hawaii International Conference on Systems Sciences*. IV, Hawaii, pp.359-367.
- Poon, S. and Swatman, P. M. (1996b). "Small Business Internet Usage: A Preliminary Survey of Australian SMEs" in *Proceedings of the 1997 Pacific Asia Conference on Information Systems*.
- Poon, S. and Swatman, P. (1995). "The Internet for Small Businesses: An Enabling Infrastructure" in Chon, K. (Ed.), *Proceedings of the Fifth Internet Society Conference*, Hawaii, June 1995, pp.221-231.
- Porter, M. (2001). "Strategy and the Internet" in *Harvard Business Review*. 79(3), March, pp.62-79.
- Porter, M.E. and Millar, V.E. (1985). "How Information Gives You Competitive Advantage" in *Harvard Business Review*. March/April, pp.149-160.
- Power, D.J. and Sohal, A.S. (2002). "Implementation and Usage of E-business in Managing the Supply Chain: A Comparative Study of Ten Australian Companies" in *Benchmarking: An International Journal*. 9(2), pp.190-208.
- Prahalad, C. and Hamel, G. (1990). "The core competencies of the corporation" in *Harvard Business Review*, May/June, pp.79-91.
- Premaratne, S.P. (2001). "Networks, Resources and Small Business Growth: The Experience in Sri Lanka" in *Journal of Small Business Management*. 39(4), pp.363-371.
- Premkumar, G. and Roberts, M. (1999). "Adoption of new information technologies in rural small businesses" in *Omega, The International Journal of Management Science*. No. 27, pp.467-484.
- Puhakainen, J. and Brannback, M. (1998). "Business-to-Business Electronic Commerce: Possibilities and Problems for Facing Companies Entering the Electronic Age" in Roche, E., Kangas, K. and Suomi, R. (Eds.), *Proceedings of IFIP 8.7 Working Conference*. TUCS General Publication No. 12. Turku.
-

-
- Puhakainen, J. and Malinen, P. (2000). *European SMEs and Electronic Commerce – A Seller's Perspective in Business-to-Business Operations*. TUCS Technical Report No. 356. Turku Centre for Computer Science. <http://www.tucs.fi/Publications/techreports/PuMaa.pdf> (Accessed 16 April 2002).
- Purao, S. and Campbell, B. (1998). "Critical Concerns for Small Business E-business: Some Reflections Based on Interviews of Small Business Owners" in *Proceedings of the Association for Information Systems Americas Conference*. Baltimore, MD, 14–16 August, pp.325-327.
- Quayle, M. (2003). "E-business in a turbulent world: usage in European small and medium size enterprises" in *International Journal of Electronic Business*. 1(1).
- Quayle, M. (2002a). "E-commerce: The Challenge for UK SMEs in the Twenty-First Century" in *International Journal of Operations and Production Management*. 22(10), pp.1148-1161.
- Quayle, M. (2002b). "Purchasing in small firms" in *European Journal of Purchasing & Supply Management*. 8(3), pp.151-159.
- Quelch, J. and Klein, L.R. (1996). "The Internet and International Marketing" in *Sloan Management Review*. 37(3), pp.60-75.
- Quesenberry, J.L., Morgan, A.J. and Trauth, E.M. (2004). "Understanding the 'Mommy Track': A Framework for Analysing Work-Family Issues in the IT Workforce" in *Proceedings of the 15th Information Resources Management Association (IRMA) Conference*, New Orleans, USA, 23-26 May, pp.135-138.
- Quinn, J.B. (1986). *Innovation and Corporate Strategy: Managed Chaos in Technology in the Modern Corporation: A Strategic Perspective*. Pergamon Press, New York, NY.
- Radstaak, B.G. and Ketelaar, M.H. (1998). *Worldwide Logistics: The Future of Supply Chain Services*. Holland International Distribution Council. The Hague, The Netherlands.
- Ragazzi, E. and Rolfo, S. (2002). "ICT Diffusion Patterns in Industrial Districts, the Role of Leading Firms" in *Proceedings of the 32nd EISB Conference, Sophia Antipolis*. September 8-10th.
- Raisinghani, M.S. and Frank, B. (2003). "Global E-Readiness of Websites: Key Perspectives and Strategies for E-Business Success" in Sharma, S.K. and Gupta, J.N.D. (Eds.), *Managing e-Business in the 21st Century*. Heidelberg Press, Vic, pp.295-296.
- Raisch, W.D. (2001). *The E-marketplace: Strategies for Success in B2B*. McGraw-Hill, New York.
- Rapoport, R. (1970). "Three Dilemmas in Action Research" in *Human Relations*. 23(6), pp.499-513.
- Ratnasingam, P. (2000). "The Influence of Power on Trading Partners in E-business" in *Internet Research*. 10(1), pp.56–62.
- Raymond, L. (2001). "Determinants of Web Site Implementation in Small Business" in *Internet Research: Electronic Network Applications and Policy*. 11(5), pp.411-422.
- Raymond, L. (1992). "Computerisation as a factor in the development of young entrepreneurs" in *International Small Business Journal*. 11, pp.23-33.
- Raymond, L. (1990a). "Organisational Context and IS Success" in *Journal of Management Information Systems*. 6(4), pp.5-20.
-

-
- Raymond, L. (1990b). "End-user Computing in the Small Business Context: Foundations and Directions for Research" in *DATA BASE*. 20(4), pp.20-26.
- Raymond, L. (1989). "Management Information Systems: Problems and Opportunities" in *International Small Business Journal*. 7, pp.44-53.
- Raymond, L. (1985). "Organisational Characteristics and MIS Success in the Context of Small Business" in *MIS Quarterly*. 9(1), pp.37-52.
- Raymond, L. and Bergeron, F. (1996). "EDI success in small and medium-sized enterprises: A field study" in *Journal of organisational computing and electronic commerce*. 6(2), pp.161-172.
- Raymond, L. and Magnenat-Thalmann, N. (1982). "Information systems in small business: are they used in managerial decisions?" in *American Journal of Small Business*. 6(4), pp.20-23.
- Rayport, J.F. and Jaworski, B.J. (2001). *Introduction to E-Commerce*. McGraw-Hill/Irwin, Boston, Massachusetts.
- Rayport, J.F. and Sviokla, J.J. (1995). "Exploiting the Virtual Value Chain" in *Harvard Business Review*. Nov-Dec 1995, pp.75-85.
- Reimenschneider, C.K. and Mykityn, P.P. Jr. (2000). "What Small Business Executives Have Learned about Managing Information Technology" in *Information & Management*. 37, pp.257-267.
- Remenyi, D. and Williams, B. (1996). "The Nature of Research: Qualitative or Quantitative, Narrative or Paradigmatic" in *Information Systems Journal*. 6, pp.131-146.
- Reynolds, P. (1998). "Creative Destruction Source or Symptom of Economic Growth" in Acs, Z. (Ed.), *Entrepreneurship, SMEs and the Macroeconomy*. Cambridge University Press, Cambridge.
- Reynolds, W., Savage, W. and Williams, A. (1994). *Your Own Business: A Practical Guide to Success*. ITP.
- Riquelme, H. (2002). "Commercial Internet Adoption in China: Comparing the Experience of Small, Medium and Large Business" in *Internet Research: Electronic Networking Applications and Policy*. 12(3), pp.276-286.
- Ritchie, R. and Brindley, C. (2000). "Disintermediation, Disintegration and Risk in the SME Global Supply Chain" in *Management Decision*. 38(8), pp.575-583.
- Ritchie, R., Brindley, C. and Peet, S. (1999). "E-business is development and risk management for SMEs operating in a global market" in *Cyprus International Journal of Management*. 4(1), pp.4-18.
- Roberts, E.B. and Berry, C.A. (1985). "Entering New Business: Selecting Strategies for Success" in *Sloan Management Review*. 26(3), pp.3-17.
- Roberts, L. (1997). *From Knowledge to Narrative*. Smithsonian Institution Press, Washington, D.C.
- Roberts, M. and Wood, M. (2002). "The Strategic Use of Computerised Information Systems by a Micro Enterprise" in *Logistics Information Management*. 15, No. 2, pp.115-125.
- Robertson, M., Swan, J. and Newell, S. (1996). "The Role of Networks in the Diffusion of Technological Innovation" in *Journal of Management Studies*. 33(3), pp.333-359.
-

-
- Robey, D. (2003). "Identity, Legitimacy and the Dominant Research Paradigm: An Alternative Prescription for the IS Discipline: A Response to Benbasat and Zmud's Call for Returning to the IT Artifact" in *Journal of the Association for Information Systems*. 4(15), November, 2003.
- Robey, D. (1996). "Diversity in information systems research: Threat, promise and responsibility" in *Information Systems Research*. 7(4), pp.400-408.
- Robey, D. and Boudreau, M. (1999). "Accounting for the Contradictory Organisational Consequences of Information Technology: Theoretical Directions and Methodological Implications" in *Information Systems Research*. 10(2), pp.167-185.
- Robey, D. and Markus, M.L. (1998). "Beyond Rigor and Relevance: Producing Consumable Research about Information Systems" in *Information Resources Management Journal*. 11(1), pp.7-15.
- Robey, D., Farrow, D. and Franz, C.R. (1989). "Group process and conflict in system development" in *Management Science*. 35(10), pp.1172-91.
- Rogers, E.M. (1995). *Diffusion of Innovations*. 4th Edition. The Free Press, New York.
- Rolland, K.H. and Herstad, J. (2000). "The 'Critical Case' in Information Systems Research" in *Proceedings of IRIS23, 2000*. <http://www.ifi.uio.no/in166/h00/criticalcase.pdf> (Accessed 3 February 2001).
- Romm, N. (1995). "Knowing as Intervention: Reflections on the Applications of Systems Ideas" in *Systems Practice*. 8(2), p.139-159.
- Rose, J. (2000). *Information systems development as action research – soft systems methodology and structuration theory*. PhD Thesis, Lancaster University.
- Rose, J. (1998). "Evaluating the contribution of structuration theory to the information systems discipline" in Baets, W.R. (Ed.) *6th European Conference on Information Systems, Aix-en-Provence. Euro-Arab Management School*, pp.910-924.
- Rose, J. (1997). "Soft Systems Methodology as a Social Science Research Tool" in *Systems Research and Behavioural Science*. 14(4), pp.249-58.
- Rose, J. and Scheepers, R. (2001). "Structuration theory and information systems development: frameworks for practice" in Smithson, S. and Avgerinou, S. (Eds.), *European Conference on Information Systems*. Bled, Slovenia.
- Rosenfeld, S. (1996). "Does Co-operation Enhance Competitiveness? Assessing the Impacts of Inter-firm Collaboration" in *Research Policy*. 25(2), pp.247-263.
- Rothwell, R. (1992). "Successful Industrial Innovation: Critical Factors for the 1990s" in *R&D Management*. 22(3), pp.221-40.
- Rothwell, R. (1991). "External networking and innovation in small and medium-sized manufacturing firms in Europe" in *Technovation*. 11(2). Elsevier Science Publishers.
- Rotch, W. (1987). *Management of Small Enterprises: Cases and Readings*. University of Virginia Press.
- Runge, D.A. and Earl, M.J. (1988). "Gaining Competitive Advantage from Telecommunications" in Earl, M.J. (Ed.), *Information Management a strategic perspective*. Oxford University Press, Oxford.
-

-
- St Pierre, J., Parks, C. and Waxman, R. (1999). "Electronic commerce of component information workshop" in *Journal of Research of the National Institute of Standards and Technology*. 104(3), pp.291-297.
- Sachs, P. (1995). "Transforming work: Collaboration, learning, and design" in *Communications of the ACM*. 38(9), pp.36-44.
- Sathye, M. and Beal, D. (2001). "Adoption of Electronic Commerce by SMEs: Australian Evidence" in *Journal of E-Business*. 1(1), June.
- Sauer, C. (1992). *Why Information Systems fail, a case study approach*. Waller, Henley-on-Thames.
- Saviotti, P.P. (1996). *Technological Evolution, Variety and the Economy*. Edward Elgar, London.
- Schien, E.H. (1999). "Information Technology Strategy. The role of the CEO in the management of change: The case of information technology" in Galliers, R.D., Leidner, E.E. and Baker, B.S.H. (Eds.), *Strategic Information and Management: Challenges and Strategies in Managing Information Systems*. 2nd Edition. Butterworth-Heinemann. Oxford. Chapter 5, pp.102-122.
- Schindehutte, M. and Morris, M.H. (2001). "Understanding Strategic Adaption in Small Firms" in *International Journal of Entrepreneurial Behaviour and Research*. 7(3), pp.84-107.
- Schrage, M. (1999). *Serious Play: How the World's Best Companies Simulate to Innovate*. Harvard Business School Press, Cambridge.
- Schulze, C. and Baumgartner, J. (2000). *Don't Panic, Do E-Commerce: A Beginner's Guide to European Law Affecting E-Commerce*. The European Commission's Information Society Directorate General.
- Scott Morton, M.S. 1991. *The Corporation of the 1990s: Information Technology and Organisational Transformation*. Oxford University Press, Oxford.
- Searle, J.R. (1995). *The Construction of Social Reality*. The Free Press.
- Semper, R. (1999). "Bringing Authentic Museum Experience to the Web" at Archives and Museum Informatics (AMI) *Museums and the Web 1999*, New Orleans, Louisiana, USA, March 11-14, 1999. <http://www.archimuse.com/mw99/papers/smith/smith.html> (accessed 16 September 1999).
- Senge, P.M. (1990). "The Leader's New Work: Building Learning Organisations," *Sloan Management Review*. 32(1), Fall, pp.7-23.
- Sengenberger, W., Loveman, G. and Piore, M. (1990). *The Re-emergence of Small Enterprises: Industrial Restructuring in Industrial Countries*. International Institute of Labour Studies, Geneva.
- Senn, J.A. (1987). "Capitalisation on E-business" in Senn, J.A. (Ed.), *Information Systems in Management*. 3rd Edition. Wadsworth, Belmont.
- SETEL (Small Enterprise Telecommunications Centre). (2002) *Accelerating the Up-take of E-Commerce by Small & Medium Enterprises: A Report and Action Plan by the SME E-Commerce Forum Taskforce*. <http://www.setel.com.au/smeforum2002> (Accessed 8 November 2003).
- Shah, N. and Dawson, R. (2002). "How to be an E-survivor in the current economic climate: E-commerce strategies and tactics to adopt for success" in *Journal of e-Business*. 1(2), pp.1-13.
-

Shakeshaft, P. (1998). "Opportunity Sets for SMEs and Electronic Commerce" in Timmers, P., Stanford-Smith, B. and Kidd, P.T. (Eds.), *Electronic Commerce: Opening Up New Opportunities for Business*. European Commission - Information Society Directorate-General. Report of the "G8 Global Marketplace for SMEs Regional Conference" in Manchester, 8th September 1998.

Shapiro, C. and Varian, H.R. (1998). *Information Rules: A Strategic Guide to the Network Economy*. Harvard Business School Press, Boston.

Sharma, S.K. and Wickramasinghe, N. (2004). "Obstacles to SMEs for E-Adoption in the Asia Pacific Region" in Corbitt, B.J. & Al-Qirim, N.A.Y. (Eds.), *e-Business, e-Government & Small and Medium-Sized Enterprises: Opportunities and Challenges*. IDEA Group Publishing, Hershey, pp.112-133.

Sillince, J. A., MacDonald, S., Lefang, B. and Frost, B. (1998). "E-mail Adoption, Diffusion, Use and Impact Within Small Firms: A Survey of UK Companies" in *International Journal of Information Management*. 18, pp.231-242.

Silverman, D. (1997). *Qualitative Research: Theory, Method and Practice*. Sage, London.

Smaling, A. (1994). "The pragmatic dimension: Paradigmatic and pragmatic aspects of choosing a qualitative or quantitative method" in *Quality and Quantity*. 28, pp.233-249.

Small Business Research Trust (2003). *NatWest SBRT Quarterly Survey of Small Businesses in Britain 2003*. Quarter 2.

Small Business Research Trust (2002). *NatWest SBRT Quarterly Survey of Small Businesses in Britain*. 18(4).

Small Business Research Trust (2001). *Government and Regulations Quarterly Small Business Management Report*. Small Business Research Trust, Milton Keynes.

Small Business Research Trust (1999). *Government Regulations and Paperwork*. NatWest SBRT Quarterly Survey of Small Businesses in Britain. 15(3).

Small Business Service (2004a). *A Government Action Plan for Small Business*. www.sbs.gov.uk/action (Accessed 4 October 2004).

Small Business Service (2004b). *A Government Action Plan for Small Business: Making the UK the best place in the world to start and grow a business. The evidence base*. www.sbs.gov.uk (Accessed 4 October 2004).

Small Business Service (2003a). *VAT Registrations and Deregistrations 1994-2002*. <http://sbs.gov.uk/statistics> (Accessed 4 March 2004).

Small Business Service (2003b). *SME statistics for the UK 2002*. <http://sbs.gov.uk/statistics> (Accessed 4 March 2004).

Small Business Service (2003c). *Small Firms Big Business: A Review of Small and Medium Sized enterprise in the UK*. Small Business Service, London, March 11, 2003, <http://www.sbs.gov.uk/default.php?page=/statistics/smedefs.php> (Accessed 16 September 2003).

Small Business Service (2003d). *SBS Annual Survey of Small Businesses: UK*. www.sbs.gov.uk (Accessed 4 October 2004).

Small Business Service (2002a). *Follow-up of Household Survey of Entrepreneurship 2002*. Small Business Service, Sheffield.

-
- Small Business Service (2002b). *SBS Household Survey of Entrepreneurship*. Small Business Service, Sheffield.
- Small Business Service (2002c). *Omnibus Survey of Small Business Opinions 2002*. Small Business Service, Sheffield.
- Small Business Service (2002d). *A Comprehensive Strategy for Start-ups: a Consultation Document*. Small Business Service, Sheffield.
- Small Business Service (2002f). *Small Business Statistics – Frequently Asked Questions*, SBS, Sheffield. <http://www.sbs.gov.uk/statistics/statisticsfaqs.asp> (Accessed 3 March 2002).
- Small Business Service (2001). *Omnibus Survey of Small Business Opinions*. Small Business Service, Sheffield.
- Smallbone, D. and Lyon, F. (2001). *Policy Support for New Business Start-ups: A Review*. (Unpublished report to the SBS).
- Smallbone, D., North, D., Vickers, I. and McCarthy, I. (2000). "Policy Support for R&D in SMEs: The UK Government's Smart Award Scheme" in During, W., Oakey, R. and Mukhtar, S. (Eds.), *New Technology-Based Firms at the Turn of the Century*. Vol. VII. Pergamon, pp.143-159.
- Smith A.J., Boocock G., Loan-Clarke J. and Whittaker J. (2002). "IIP and SMEs: Awareness, Benefits and Barriers" in *Personnel Review*. 31(1), pp.62-85.
- Smith, J. A. (1998). "Strategies for Start-Ups" in *Long Range Planning*. 31, pp.857-872.
- Sohal, A.S. and Ng, L. (1998). "The Role And Impact Of Information Technology In Australian Business" in *Journal of Information Technology*. 13(3), pp.201-217.
- Southern, A. and Tilley, F. (2000). "Small Firms and ICTs: toward a typology of ICTs usage" in *New Technology: Work and Employment*. 15(2), pp.138-154.
- Sparkes, A. and Thomas, B. (2001). "The Use of the Internet as a Critical Success Factor for the Marketing of Welsh Agri-food SMEs in the Twenty First Century" in *British Food Journal*. 103(4), pp.331-347.
- Spectrum/DTI. (2001). *Business in the Information Age: International Benchmarking Study*. <http://www.ukonlineforbusiness.gov.uk/> (Accessed: March 26, 2003).
- Spender, J. (1996). "Making Knowledge the Basis of a Dynamic Theory of the Firm" in *Strategic Management Journal*. No. 17, pp.45-62.
- Sriram, V. and Bannerjee, S. (1994). "EDI does its adoption change purchasing policies and procedures" in *International Journal of Purchasing and Materials Management*. 30(1), pp.31-40.
- Stake, R.E. (1995). *The Art of Case Study Research*. Sage Publications, Thousand Oaks, CA.
- Stake, R.E. (1994). "Case Studies" in Denzin, N.K. and Lincoln, Y.S. (Eds.), *Handbook of Qualitative Research*. Sage Publications, London. pp.236-247.
- Stauber, A. (2000). *A Survey of the Incorporation of e-business in Tasmanian Small and Medium Sized Enterprises*. Tasmanian e-Business Centre, Australia.
-

-
- Steinhoff, D. and Burgess, J.F. (1986). *Small Business Management Fundamentals*, 4th Edition. McGraw-Hill, New York.
- Stephenson, H. and Duncan, E. (1993). *Effective Paradigms for Small Business in the Changing Global Economy: A Case Study of a Flexible Manufacturing Network*.
<http://161.31.2.174/docs/proceedings/93sbi311.txt> (Accessed: March 2003).
- Sterne, J. (1996). *Advertising on the Web*. John Wiley & Sons, New York.
- Stoner, J.A. and Freeman, R.E. (1989). *Management*. Prentice-Hall, Inc. Englewood Cliffs, NJ.
- Stowell, F. (1995). "Empowering the Client: the Relevance of SSM and Interpretivism to Client-Led Design" in Stowell, F. and West, D. (Eds.), *Information Systems Provision: the Contribution of Soft Systems Methodology*. McGraw-Hill, London. pp.118-137.
- Suchman, L.A. (1987). *Plans and Situated Actions: The Problem of Human-Machine Communication*. Cambridge University Press, New York.
- Susman, G. and Evered, T. (1978). "An Assessment of the Scientific Merits of Action Research" in *Administrative Science Quarterly*. 23, pp.582-603.
- Swanson, E.B. (1994). "Information systems innovation among organisations" in *Management Science*. 40(9), pp.1069-1090.
- Symon, G. (1998). "Qualitative Research Diaries" in Symon, G. and Cassell, C. (Eds.), *Qualitative Methods and Analysis*. Sage, London.
- Szulanski, G. (1996). "Exploring Internal Stickiness: Impediments to the Transfer of Best Practice within the Firm" in *Strategic Management Journal*. 17, pp.27-43.
- Tabor, S.W. (2004) "Small Business IT Adoption – Missing the Strategic Perspective" in *Proceedings of the 15th Information Resources Management Association (IRMA) Conference*. New Orleans, USA, 23-26 May, p.1082.
- Tait, P. and Vessey, I. (1988). "The effect of user involvement on system success: a contingency approach" in *MIS Quarterly*. 12(1), pp.91-108.
- Tambini, A.M. (1999). "E-Shoppers Demand E-Service" in *Discount Store News*. 11(38).
- Tang, P., Powell, D.J., Worlock, K. and Bingham, J. (2000). *The impact of electronic commerce on the competitiveness of SMEs in the EU. Final report for the Scientific and Technological Options Assessment (STOA)*. European Parliament, 31 July 2000. SPRU, Brighton.
- Tashakkori, A. and Teddlie, C. (1998). *Mixed Methodology: Combining Qualitative and Quantitative Approaches*. Sage Publications, London.
- Tatnall, A. and Burgess, S. (2002). "Using Actor-Network Theory to Research the Implementation of a B2B Portal for Regional SMEs" in *15th Bled Electronic Commerce Conference - 'eReality: Constructing the eEconomy'*. Bled, Slovenia, University of Maribor. pp.179-191.
- Taylor, S.J. and Bogdan, R. (1998). *Introduction to Qualitative Research Methods: A Guide Book and Resource*, 3rd Edition. John Wiley & Sons, Inc, New York.
-

-
- Teather, L. (1998). "A Museum is a Museum is a Museum... Or is it?: A Discussion of Museology on the Web" at *Archives and Museum Informatics (AMI) Museums and the Web 1998*, Toronto, Canada, April 22-25, 1998. <http://www.archimuse.com/mw98/abstracts/teather.html> (accessed 16 September 1999).
- Teece, D.J., Pisano, G. and Schuen, A. (1997). "Dynamic capabilities and strategies" in *Strategic Management Journal*. 18(7). pp.509-533.
- Teleworking Association (2000). *Teleworking and Small Business*. Huddersfield. <http://www.tca.org.uk/library2/index.html> (accessed 17 October 2001).
- Tetteh, E. and Burn, J. (2001). "Global Strategies for SME-business: Applying the SMALL Framework" in *Logistics Information Management*. 14(1/2), pp.171-180.
- Tetteh, E. and Burn, J. (2000). "A Strategic Approach to the development of an Infrastructure for Small and Medium Sized E-Business" in *Electronic Commerce: The End of the Beginning 13th International Bled Electronic Commerce Conference*. Bled, Slovenia.
- Teubner, R.A. and Klein, S. (1998). "Planning and designing web-based electronic commerce: A case study in the insurance industry" in *Australian Journal of Information Systems*. November, pp.86-96.
- Thompson, P. and McHugh, D. (1995) *Work Organisations: A Critical Introduction*. 2nd Edition. Macmillan Press Ltd, Houndmills.
- Thong, J.Y.L. (2001). "Resource constraints and information system implementation in Singaporean small businesses" in *Omega, The International Journal of Management Science*. No. 29, pp.143-156.
- Thong, J.Y.L. (1999). "An integrated model of information systems adoption in small businesses" in *Journal of Management Information Systems*. 15, pp.187-214.
- Thong, J.Y.L., Yap, C-S. and Raman, K.S. (1996). "Top management support, external expertise and information systems implementation in small businesses" in *Information Systems Research*. 7(2), pp.248-267.
- Thong, J.Y.L., Yap, C.S. and Raman, K.S. (1993). *Environments for Information Systems Implementation in Small Businesses*. Working Paper, National University of Singapore.
- Thorelli, H.B. (1986). "Networks: Between Markets and Hierarchies" in *Strategic Management Journal*. 7, Jan-Feb, pp.35-51.
- Tidd, J., Bessant, J. and Pavitt, K. (1997). *Managing Innovation: Integrating Technological, Organisational & Market Change*. John Wiley & Sons.
- Tikkanen, H. (1998). "The Network Approach in Analysing International Marketing and Purchasing Operations: A Case Study of a European SMEs Focal Net 1992 - 95" in *Journal of Business and Industrial Marketing*. 13(2), pp.109-131.
- Timmers, P. (2000). "Global and Local in Electronic Commerce" in *Proceedings of the First International Conference on Electronic Commerce and Web Technologies*. pp.191-205.
- Timmers, P. (1998). "Business Models for Electronic Markets" in *Electronic Markets*. 8(2). pp.3-8.
-

-
- Trappey C.V. and Trappey, A.J.C. (2001). "e-business in Greater China" in *Industrial Management and Data Systems*. 105(5).
- Trostel, A. and Nichols, M. (1982). "Privately-held and Publicly-held Companies: A Comparison of Strategic Choices and Management Processes" in *Academy of Management Journal*. 25(1), pp.47-62.
- Troye-Walker, A. (1998a). *What is Electronic Commerce? Electronic commerce, EU policies and SMEs*. <http://www.ispo.cec.be/E-commerce/policies.htm> (Accessed 20 September 2002).
- Troye-Walker, A. (1998b). "Electric Commerce: EU policies and SMEs" in *European Commission, DG XIII*, <http://europa.eu.int/ISPO/ecommerce/sme/reports/policies.html> and <http://158.169.51.200/ecommerce/sme/reports.html> (Accessed 31 January 2000).
- Tsouvalis, C. and Checkland, P. (1996). "Reflecting on SSM: The Dividing Line Between 'Real World' and 'Systems Thinking World'" in *Systems Research and Behavioral Science*. 13(1). pp. 35-45.
- Tucker, D. and Lafferty, A. (2004). "Implementing Electronic Commerce in SMEs: Processes and Barriers" in *Journal of Electronic Commerce in Organisations*. 2(4), Oct-Dec 2004, pp.20-29.
- Turban, E., Lee, J., King, D. and Chung, H. (2000). *Electronic Commerce: A Managerial Perspective*. Prentice Hall, NJ.
- Tushman, M.L. (2002). *Managing Strategic Innovation and Change*. Oxford University Press, Oxford.
- Tushman, M.L. and O'Reilley, C.A. (2002). *Winning Through Innovation: A Practical Guide to Leading Organisational Change and Renewal*. Harvard Business School Press. Cambridge, Massachusetts.
- UKAIS (United Kingdom Academy of Information Systems). (1995). *UKAIS Newsletter*. May.
- Van Akkeren, J. and Cavaye, A.L.M. (1999a). *Factors affecting the adoption of e-commerce technologies by small business in Australia – an empirical study*. <http://www.acs.org.au/act/events/io1999/akkern.html> (Accessed 22 October 2000).
- Van Akkeren, J. and Cavaye, A.L.M. (1999b). "Factors Affecting Entry-Level Internet Technology Adoption by Small Business in Australia: An Empirical Study" in *Proceedings of the 10th Australasian Conference on Information Systems*. Wellington, New Zealand.
- Van Doren, D.C., Fechner, D.L. and Green-Adelsberger, K. (2000). "Promotional strategies on the World Wide Web" in *Journal of Marketing Communications*. 6(1), pp.21-36.
- Venkatraman, N. (1994). "IT-enabled business transformation: from automation to business scope redefinition" in *Sloan Management Review*. 35(2), pp.73-87.
- Venters, W., Cushman, M. and Cornford, T. (2002). *Creating Knowledge for Sustainability: Using SSM for Describing Knowledge Environments and Conceptualising Technological Interventions*. 107, LSE Working Paper Series.
- Vescovi, T. (2000). "Internet Communication: The Italian SME Case" in *Corporate Communications: An International Journal*. 5(2), pp.107-112.
- Vidgen, R. and Braa, K. (1997). "Balancing interpretation and intervention in information system research: the "action case" approach" in Lee, A., Liebenau, J. and DeGross, J. (Eds.), *Proceedings of the IFIP WG8.2 International Conference on Information Systems and Qualitative Research*, Philadelphia, USA, May 31-June 3, 1997.
-

-
- Violino, B. (2000). "Payback Time for E Business" in *Internet Week*. Special Issue 811.
- Vitalari, N.P. (1985). "The Need for Longitudinal Designs in the Study of Computing Environments" in Mumford, E., Hirschheim, R., Fitzgerald, G. and Wood-Harper, T. (Eds.), *Research Methods in Information Systems*. Elsevier, Amsterdam, pp.243-265.
- Vrazalic, L., Bunker, D., MacGregor, R.C., Carlsson, S. and Magnusson, M. (2002). "Electronic Commerce and Market Focus: Some Findings from a Study of Swedish Small to Medium Enterprises" in *Australian Journal of Information Systems*. 10(1), pp.110-119.
- Walczuch, R., Van Braven, G. and Lundgren, H. (2000). "Internet Adoption Barriers for Small Firms in the Netherlands" in *European Management Journal*. 18(5), pp.561-572.
- Walker, E.W. (1975). "Investment and Capital Structure Decision Making" in Walker, E.W. (Ed.), *The Dynamic Small Firm: Selected Readings*. Austin Press, Texas.
- Walsham, G. (1995). "Interpretive case studies in IS research: nature and method" in *European Journal of Information Systems*. 4, pp.74-81.
- Walsham, G. (1993). *Interpreting Information Systems in Organisations*. Wiley Press, UK.
- Walsham, G. and Han, C.K. (1991). "Structuration Theory and Information Systems Research" in *Journal of Applied Systems Analysis*. 17, pp.77-85.
- Walsham, G. and Waema, T. (1994). "Information systems strategy and implementation: a case study of a building society" in *ACM Transactions on Information Systems*. 12(2), pp.150-173.
- Watson, R.T., Akselsen, S. and Leylan, F.P. (1998). "Attractors: Building Mountains in the Flat Landscape of the World Wide Web" in *California Management Review*. 40(2), pp.37-56.
- Watson, R.T., Kelly, G.G., Galliers, R.D. and Brancheau, J.C. (1997). "Key Issues in Information Systems Management: An International Perspective" in *Journal of Management Information Systems*. Spring 1997, 13(4), pp.91-115.
- Weber, M. (1985). *The Protestant ethic and the spirit of capitalism*. Unwin Paperbacks, London.
- Webster, J. (1995). "Networks of collaboration or conflict? Electronic data interchange and power in the supply chain" in *Journal of Strategic Information Systems*. 4(1), pp.31-42.
- Weick, K.E. (1995). *Sensemaking in Organisations*. Thousand Oaks, CA: Sage.
- Welch, J.A. and White, J.F. (1981). "A Small Business is Not a Little Big Business" in *Harvard Business Review*. 59(4), pp.18-32.
- Westhead, P. and Storey, D.J. (1996). "Management Training and Small Firm Performance: Why is the Link so Weak?" in *International Small Business Journal*. 14(4), pp.13-24.
- Westland, J. and Clarke, T. (2000). *Global Electronic Commerce: Theory and Case Studies*. MIT Press, Boston.
- Wilkins, L, Swatman, P.M.C. and Castleman, T. (1999) "What's in a name? Conceptual issues in defining electronic commerce" in *Proceedings of the European Conference on Information System*. Vienna, Austria.
-

-
- Willcocks, L.P. and Kern, T. (1998). "IT outsourcing as strategic partnering: the case of the UK Inland Revenue" in *European Journal of Information Systems*. 7(1), pp.29-45.
- Wilson, B. (2001). *Soft Systems Methodology: Conceptual Model Building and its Contribution*. John Wiley & Sons, Chichester.
- Wilson, B. (1992). *Systems: Concepts, Methodologies and Applications*. 2nd Edition. John Wiley, Chichester.
- Wilson, B. (1984). *Systems: Concepts, Methodologies and Applications*. John Wiley, Chichester.
- Windrum, P. (2004). "Factors Affecting the Adoption of Intranets and Extranets by SMEs: A UK Study" in *Proceedings of the 15th Information Resources Management Association (IRMA) Conference*. New Orleans, USA, 23-26 May, pp.904-910.
- Windrum, P. and de Berranger, P. (2003a). "The Adoption of E-Business Technology by SMEs" in Jones, O. and Tilley, F. (Eds.), *Competitive Advantage in SMEs*. John Wiley & Sons, Cheltenham, pp.177-201.
- Wood, J.R.G., Vidgen, R.T., Wood-Harper, A.T. and Rose, J. (1995). "Business process redesign: Radical change or reactionary tinkering?" in Burke, G. and Peppard, J. (Eds.), *Examining Business Process Reengineering: Current Perspectives and Research Directions*. Kogan Page, London.
- Wood-Harper, T. (1985) "Research Methods in Information Systems: Using Action Research" in Mumford, E., Hirschheim, R., Fitzgerald, G. and Wood-Harper, T. (Eds.), *Research Methods in Information Systems*. Elsevier, Amsterdam, pp.169-191.
- World Bank. (2002). *E*Government: A Definition of E*Government*. The World Bank Group. <http://www1.worldbank.org/publicsector/egov/definition.htm> (Accessed 7 November 2002).
- Wynarczyk, P., Watson, R., Storey, D.J., Short, H. and Keasey, K. (1993). *The Managerial Labour Market in Small and Medium Sized Enterprises*. Routledge, London.
- Yap, C-S. and Thong, J.Y.L. (1997). "Programme Evaluation of a Government Information Technology Programme for Small Businesses" in *Journal of Information Technology*. 12, pp.107-120.
- Yap, C.S., Soh, C.P.P. and Raman, K.S. (1992). "Information systems success factors in small businesses" in *Omega, International Journal of Management Science*. 20(5), pp.597-609.
- Yell (2001). *Small Business Watch Survey – Summary of National Findings*.
- Yeung, H.W. (1994). "Critical Reviews of Geographical Perspectives on Business Organisations and the Organisation of Production: Towards a Network Approach" in *Progressive Human Geography*. 18(4), pp.460-490.
- Yin, R.K. (2003). *Case Study Research: design and methods*. 3rd Edition. Sage Publications, Thousand Oaks, CA.
- Yin, R.K. (1994). *Case Study Research: design and methods*. 2nd Edition. Sage Publications, Thousand Oaks, CA.
- Yin, R.K. (1989a). "Case Study Research – Design and Methods" in *Applied Social Research Methods Series*. (Revised Edition). 5, Sage Publications, Newbury Park.
-

- Yin, R.K. (1989b). "Research Design Issues in Using the Case Study Method to Study Management Information Systems" in Cash, J.I. and Lawrence, P.R. (Eds.), *The Information Systems Research Challenge: Qualitative Research Methods*. Vol. 1. Harvard Business School Press, Boston.
- Yin, R.K. (1981a). "The Case Study Crisis: Some Answers" in *Administrative Science Quarterly*. 26, pp.58-65.
- Yin, R.K. (1981b). "The Case Study as a Serious Research Strategy" in *Knowledge*. 3, pp.97-114.
- Zimmerman, J. and Mathiesen, M. (1998). *Marketing on the Internet*. Independent Publishing Group.
- Zinatelli, N., Cragg, P.B. and Cavaye, A.L.M. (1996). "End User Computing Sophistication and Success in Small Firms" in *European Journal of Information Systems*. No. 5, pp.172-181.

Bibliography

- Abernethy, M. (2002). "SMEs: Small World Order" in *The Bulletin*. 120(34). <http://bulletin.ninemsn.com.au/bulletin/EdDesk.nsf/printing/6CA1210854790931CA256C0E00237872> (Accessed 2 June 2003).
- Al-Qirim, N.A.Y. and Corbitt, B.J. (2004). "The Government and eGovernance: A Policy Perspective on Small Businesses in New Zealand" in Corbitt, B.J. and Al-Qirim, N.A.Y. (Eds.), *e-Business, e-Government & Small and Medium-Sized Enterprises: Opportunities and Challenges*. IDEA Group Publishing, Hershey, pp.1-18.
- Alter, S. (2002). "The Work System Method for Understanding Information Systems and Information Systems Research" in *Communications of the Association for Information Systems*. 9, pp.90-104.
- AMR Research. (2000). *Outlook*. <http://www.amrresearch.com> (Accessed 23 November 2000).
- Antill, L. (1985). "Selection of a Research Method" in Mumford, E., Hirschheim, R., Fitzgerald, G. and Wood-Harper, A.T., *Research Methods in Information Systems. Proceedings of the IFIP WG 8.2 Colloquium*, Manchester Business School, 1-3 September, 1984. Amsterdam, North Holland, pp.203-215.
- Arminas, D. (2002). "Reality bites" in *Supply Management*. 17(11), p.8.
- Ascarelli, S. and Fuhrmans, V. (2000). "New online exchange in Europe faces crowded race for dominance" in *Wall Street Journal*. 17 November, p.A17.
- Attewell, P. (1992). "Technology Diffusion and Organisational Learning: The Case for Business Computing" in *Organisation Studies*. 3, pp.1-19.
- Avison, D.E., Powell, P.L., and Adams, C. (1994). "Identifying and incorporating change in information systems" in *Systems Practice*. 7(2), pp.143-159.
- Aycliffe, R. (1999). "Editorial comment" in *Supply Management*. CIPS Easton, March.
- Barclays Bank. (2001). *Profiting from Support*. National Federation of Enterprise Agencies. July. www.nfea.com/content/news_views/trackingstudy.pdf (Accessed 2 October, 2003).
- Barnet, M., Young, E. and Evans, J. (2000). "For incubators, it's egg on face" in *The Industry Standard*. 20 November, pp.71-73.
- Basden, A. (1999). "How Dooyeweerdian Thinking Might Complement Soft Systems Thinking." www.basden.u-net.com/Dooy/sst/sst.html (Accessed 11 July 2003).
- Bateson, G. (1972). *Steps to an Ecology of Mind*. Ballantine Press, New York.
- Benjamin, K. (2000). "Spin to Win" in *E-Business*. September, pp.32-36.
- Bhaskar, R. (1978). *A Realist Theory of Science*. Harvester, Hemel Hempstead, UK.
- Blaikie, N. (1993). *Approaches to Social Enquiry*. Polity Press, Cambridge.
-

- Blum, F. (1955). "Action research-A scientific approach" in *Philosophy of Science*. 22(1), pp.1-7.
- Bochnowski, S. (2001). "The Top 25 Investment Bands of 2000" in *Red Herring*. <http://redherring.com/mag/issue99/1390019339.html> (Accessed 8 April 2002).
- Boisot, M. (1987). *Information and Organisations: the Manager as Anthropologist*. Fontana, London.
- Boland, R.J. Jr. (1991), "Information System Use as a Hermeneutic Process" in Nissen, H-E., Klein, H.K. and Hirschheim, R.A. (Eds.), *Information Systems Research: Contemporary Approaches and Emergent Traditions*. NorthHolland, Amsterdam, 1991, pp.439-464.
- Booth, W. (1979). *Critical Understanding: The Powers and Limits of Pluralism*. University of Chicago Press, Chicago, IL.
- Bruce, M. and Cooper, R. (1999). "Effective design management for small businesses" in *Design Studies*, No.20, pp.297-315.
- Budde, R., Kautz, K., Kuhlenkamp, K. and Zullighoven, H. (1992). *Prototyping – An Approach to Evolutionary Systems Development*. Springer-Verlag, Berlin.
- Burns, P. (2001). *Entrepreneurship and Small Business*, Palgrave.
- Chau, S. and Turner, P. (2004). "An SME Experience of E-Commerce: Some Considerations for Policy Formulation in Australia" in Corbitt, B.J. and Al-Qirim, N.A.Y. (Eds.), *e-Business, e-Government & Small and Medium-Sized Enterprises: Opportunities and Challenges*. IDEA Group Publishing, Hershey, pp.91-111.
- Cornford, T. and Smithson, S. (1996). *Project Research in Information Systems*. Macmillan, London.
- Cushman, M. (2001). *Action research in the UK construction industry – the B-Hive Project*. 99, LSE Working Paper Series.
- Databuild (2002). *Diversity in Public Sector Procurement Survey*. Small Business Service, Sheffield.
- Davies, H. (2002) *The Howard Davies Review of Enterprise and the Economy in Education*. Norwich, HMSO.
- de Heer, W. (1999). "International Response Trends: Results of an International Survey" in *Journal of Official Statistics*. 15(2), pp.129-142.
- Dobbin, T.J. and Bustard, D.W. (1994). "Combining Soft Systems Methodology and Object-Oriented Analysis: The Search for a Good Fit" in *Proceedings of the 2nd Information Systems Methodologies Conference*, Edinburgh, August 1994.
- Dougherty, C. (2002). *Introduction to Econometrics*. Oxford University Press, Oxford.
- DTI (2003b). *Economics Paper No. 7*. The Stationery Office, Norwich.
- Dyer, J. and Singh, H. (1998). "Relational View" in *Academy of Management Review*. 23(4), pp.660-679.
- Easterby-Smith, M., Thorpe, R. and Lowe, A. (1991). *Management Research: An Introduction*. Sage, London.
-

Finegan, A.D. (1995). "Fuzzy Logic and Soft Systems Methodology – A Complex Connection" in *Proceedings of The Australian Systems Conference – Systems for the Future*. Perth, Australia, 26-28 September, 1995. www.bf.rmit.edu.au/~andrewf/fuzzyssm/fuzzyssm.htm (Accessed 11 July 2003).

Flyvbjerg, B. (1998). *Rationality & Power: Democracy in Practice*. (Samson, S., transl). The University of Chicago Press, Chicago.

Forbes, P. and Checkland, P.B. (1987). *Monitoring and Control in Systems Models*. Discussion Paper 3/87. Department of Systems and Information Management, University of Lancaster.

Galliers, R.D. (1992c) "Information technology: management's boon or bane?" in *Journal of Strategic Information Systems*. 1(2), March, pp.50-6.

Galliers, R.D. (1991a). "A scenario-based approach to strategic information systems planning" in Jackson, M., Mansell, G., Flood, R., Blackham, R. and Probert, S. (Eds.), *Systems Thinking in Europe*. Plenum, London.

Galliers, R. (1997). "Reflections on Information Systems Research: Twelve Points of Debate" in Mingers, J. and Stowell, F. (Eds.), *Information Systems: An Emerging Discipline?* McGraw-Hill, London.

Galliers, R.D. (1987). *Information Analysis: Selected Readings*. Addison-Wesley, Sydney.

Galliers, R.D. (1984b). "An approach to information needs analysis" in Shackel, B. (Ed.), *Human-Computer Interaction-INTERACT '84*, Elsevier, North-Holland, Amsterdam, pp.619-28.

Galliers, R.D. and Jackson, M. (1997). "Organisational Theory and Systems Thinking: The Benefits of Partnership" in *Organisation*. 4(2), pp.269-278.

Gartner Group. (2001). *Gartner Group Survey 2001*. <http://www.nua.ie/surveys> (Accessed 21 November 2001).

Goodhue, D., Kirsch, L.J., Quillard, J.A. and Wybo, M.D. (1992). "Strategic Data Planning: Lessons from the Field" in *MIS Quarterly*. 16(1), pp.11-34.

Grande, C. (2000). *Small overhauled from office to sales point*. www.FT.com (Accessed 4 October, 2000).

Haapalainen, R. (1999). "Revising the Finnish National Gallery's Web Pages" at Archives and Museum Informatics (AMI) *Museums and the Web 1999*, New Orleans, Louisiana, USA, March 11-14, 1999. <http://www.archimuse.com/mw99/papers/haapalainen/haapalainen.html> (accessed 16 September 1999).

Habermas, J. (1984). *The Theory of Communicative Action Vol. 1: Reason and the Rationalisation of Society*. Heinemann, London.

Habermas, J. (1987). *The Theory of Communicative Action Vol. 2: Lifeworld and System: a Critique of Functionalist Reason*. Polity Press, Oxford.

Hagmann, C. and McCahon, C.S. (1993). "Strategic Information Systems and Competitiveness" in *Information & Management*. 25, pp.183-192.

Hakman, K. (2003). *E-commerce tutorial: Lesson 4*. Webmonkey. <http://hotwired.lycos.com/webmonkey/99/04/index3a.html> (Accessed 11 December, 2003).

- Hanseth, O. and Braa, K. (1999). "Hunting for the treasure at the end of the rainbow. Standardizing corporate IT infrastructure" in *Proceedings of the IFIP 8.2 Conference*. pp.121-140.
- Hirschheim, R. and Klein, H. (1989). "Four paradigms of information systems development" in *Communications of the ACM*. 32, pp.9-23.
- Hirschheim, R. and Shafer, G. (1988). "Requirements analysis: a new look at an old topic" in *Journal of Applied Systems Analysis*. 15, pp.101-18.
- Hooper, V. and van Erkom Schurink, C. (2003). "The Strategic Alignment of Marketing and IT/IS: The Impact on E-Business Success" in Sharma, S.K. and Gupta, J.N.D (Eds.), *Managing e-Business in the 21st Century*. Heidelberg Press, Vic, pp.235-254.
- Hutt, M.D. and Speh, T.W. (1998). *Business Marketing Management: A Strategic View of Industrial and Organisational Markets*. Dryden Press, Fort Worth, Texas.
- Johnston, R.B. and Mak, H.C. (2000). "An emerging vision of Internet-enabled supply-chain electronic commerce" in *International Journal of Electronic Commerce*. 4, pp.43-59.
- Justman, M. and Teubal, M. (1996). "Technological infrastructure policy TIP: creating capabilities and building markets" in Teubal, M., Foray, D., Justman, M. and Zuscovitch, E. (Eds.), *Technological infrastructure policy: an international perspective*. Dordrecht, Kluwer.
- Keen, P.G.W. (1984). "Building the information systems research community" in *Information Technology Training*. November.
- Kelly, P. and Kransberg, M. (1975). *Technological Innovation: A Critical Review of Current Knowledge*. Advanced Technology and Science Studies Group, Georgia Institute of Technology, Atlanta.
- Kotler, P. (2000). *Marketing management: Analysis, planning, implementation and control*. Prentice-Hall, Upper Saddle River, NJ.
- Kueng, P., Meier, A. and Wettstein, T. (2000). "Computer Based Performance Measurement in SMEs" in *Institute of Informatics*, University of Fribourg.
- Land, G. and Jarman, B. (1992). *Breakpoint and Beyond: Mastering the Future Today*. HarperCollins, New York, NY.
- Law, J. and Hassard, J. (1999). *Actor Network Theory and After*. Oxford University Press, Oxford.
- Lee, A.S. (1999). "Researching MIS" in Currie, W. and Galliers, B. (Eds.), *Rethinking Management Information Systems – An Interdisciplinary Perspective*. Oxford University Press, Oxford, pp.7-27.
- Lewin, K. (1997). "Action Research and Minority Problems" in *Resolving Social Conflicts & Field Theory in Social Science*. (2nd Ed.). American Psychological Association, Washington, D.C., pp.143-152.
- Limayem, M., Khalifa, M. and Frini, A. (2000). "What Makes Consumers Buy from Internet? A Longitudinal Study of Online Shopping" in *IEEE Transactions on Systems, Man, and Cybernetics*. Part A, 30(4), July 2000, pp.421-432.
- Lincoln, T.J. (1980). "Information Systems constraints – A strategic review" in Lavington, S.H. (Ed.), *Information Processing 80*. North-Holland, Amsterdam.
-

- Liu, C. and Arnett, K. (1999). "Assessing the Customer Behavior Intentions on the Web: A Research Model" in Nazareth, W.D.H. and Nazareth, D.L. (Eds.), *Proceedings of Fifth Americas Conference on Information Systems*. Milwaukee, Wisconsin. pp.307-309.
- Lyneis, J.M., Cooper, K.G. and Els, S.A. (2001). "Strategic Management of Complex Projects: A Case Study Using System Dynamics" in *System Dynamics Review*. 17(3), Fall 2001, John Wiley & Son.
- Magnusson, M. (2004). "An Integrated Framework for E-Commerce Adoption in Small to Medium-Sized Enterprises" in *Proceedings of the 15th Information Resources Management Association (IRMA) Conference*, New Orleans, USA, 23-26 May, pp.585-588.
- Mahdjoubi, D. (1996a). *Prelude to The Atlas of Innovation: The Integration of Innovation Strategies and the Valuation of Knowledge Capitals*. <http://www.gslis.utexas.edu/darius/prelude2/prelude2.htm> (Accessed 3 July 2001).
- Malone, S.C. (1985). "Computerizing Small Business Information Systems" in *Journal of Small Business Management*. April 1985, pp.10-16.
- Markus, L. and Soh, C. (2002). "Structural influences on global E-Commerce activity" in *Journal of Global Information Management*. Jan-March 2002, 10(1), pp.5-13.
- Mata, F., Fuerst, N. and Barney, J. (1995). "Information technology and sustained competitive advantage: A resource-based analysis" in *MIS Quarterly*. 19(4), pp.487-505.
- Mathiassen, L. and Nielsen, P.A. (1989). "Soft Systems and Hard Contradictions – Approaching the Reality of Information Systems in Organisations" in *Journal of Applied Systems Analysis*. 16, pp.273-296.
- McCullagh, P. and Nelder, J.A. (1983). *Generalised Linear Models*. Chapman and Hall, London.
- McDonagh, P. and Prothero, A. (2000). "Euroclicking and the Irish SME: Prepared for E-Business and the Single Currency" in *Irish Marketing Review*. 13(1), pp.21-31.
- McGrath, G.M. and More, E. (2004). "Government Promotion of E-Commerce in SMEs: The Australian Government's ITOL Program" in Corbitt, B.J. and Al-Qirim, N.A.Y. (Eds.), *e-Business, e-Government & Small and Medium-Sized Enterprises: Opportunities and Challenges*. IDEA Group Publishing, Hershey, pp.287-304.
- McKay, J. and Marshall, P. (1999b). "A framework for rigour in action research" in *Proceedings of the American Conference on Information Systems*. Milwaukee, WI, August.
- Meredith, G.G. (1994). *Small Business Management in Australia*. McGraw Hill.
- Mingers, J. (1992). "Recent developments in critical management science" in *Journal of the Operational Research Society*. 43(1), pp.1-10.
- Mingers, J. (1988). "Comparing conceptual models and data flow diagrams" in *The Computer Journal*. 31(4), pp.376-9.
- Mohr, L.B. (1969). "Determinants of Innovation in Organisations" in *American Political Science Review*. 63, pp.111-126.
- Monteiro, E. (2000). "Actor-Network Theory" in Ciborra, C. (Ed.), *From Control to Drift: The Dynamics of Corporate Information Infrastructures*. Oxford University Press, Oxford.
-

- Mumford, E. (1995). *Effective Systems Design and Requirements Analysis*. Macmillan, London.
- Nandhakumar, J. and Jones, M. (1997). "Too close for comfort?: Distance and engagement in interpretive information systems research" in *Information Systems Journal*. 7, pp.109-131.
- Nelson, R. (1994). "The Co-evolution of Technology, Industrial Structure, and Supporting Institutions" in *Industrial and Corporate Change*. 3, pp.47-63.
- NOIE – The National Office for the Information Economy. (2001). *Taking the Plunge: Sink or Swim*, Department of Communication, Information Technology and the Arts, Commonwealth of Australia.
- Nolan, R.L. (1979). "Managing the crises in data processing" in *Harvard Business Review*. 57(2), March-April, pp.115-26.
- OECD. (1997b). *Proposed guidelines for collecting and interpreting technological innovation data: "The Oslo Manual"*. OECD, Paris.
- OECD. (1995). *Information Technology (IT) diffusion policies for small and medium-sized enterprises (SMEs)*. OECD, Paris.
- Oh, K-H., Jantavongso, S. and Li, R. K-Y. (2004). "A Critique: Factors Contributing to the Dotcom Failures" in *Proceedings of the 15th Information Resources Management Association (IRMA) Conference*, New Orleans, USA, 23-26 May, pp.179-185.
- O'Keefe, R. M., O'Connor, G. and Kung, H.-J. (1998). "Early adopters of the Web as a retail medium: small company winners and losers" in *European Journal of Marketing*. 32, pp. 629-644.
- ONS. (2000). *E-Commerce Inquiry to Business 2000*. Office for National Statistics.
http://www.statistics.gov.uk/themes/economy/Articles/downloads/E_commerce_Inquiry_to_business_2000.pdf (Accessed 21 March 2001).
- Patching, D. (1990). *Practical Soft Systems Analysis*. Pearson Education, Harlow.
- Patton, M.Q. (1990). *Qualitative Evaluation and Research Methods*. 2nd Edition. Sage Publications, Newbury Park, CA.
- Pereira, R. E. (1998). "Factors Influencing Consumer Purchasing Behavior in Electronic Commerce" in Benbasat, E.D.H.I. (Ed.), *Proceedings of America's Conference on Information Systems (AIS '98)*, Baltimore, Maryland. pp.450-452.
- Phukan, S. and Dhillon, G. (2000). "Ethics and information technology use: a survey of US based SMEs" in *Information Management & Computer Security*. 8, pp.239-243.
- Poirer, C. and Bauer, M. (2002). "E-supply chain: using the Internet to revolutionise business" in *International Journal of Quality and Reliability Management*. 19(4), pp.485-486.
- Porter, M. (1985). *Competitive Strategy*. The Free Press, New York.
- Porter, M. (1980). *Competitive Advantage*. The Free Press, New York.
- PriceWaterhouseCoopers, (1999). *SME E-business Study Final Report*. London.

- Randall, D., Hughes, J. and Shapiro, D. (1994). "Steps towards a partnership: Ethnography and system design" in Jirotko, M. and Goguen, J. (Eds.), *Requirements Engineering: Social and Technical Issues*. Academic Press, London, pp.241-258.
- Raymond, L. and Bili, S. (2000). "Organisational learning as a foundation of electronic commerce in the network organisation" in *International Journal of Electronic Commerce*. 5, pp.29-45.
- Rockart, J.F., Earl, M.J. and Ross, J.W. (1996). "Eight imperatives for the new IT organisation" in *Sloan Management Review*. 38(1), Fall, 1996.
- Rose, J. (2002). "Interaction, transformation and information systems development – an extended application of Soft Systems Methodology" in *Information Technology & People*. 15(3), 2002, pp.242-268.
- Rosenhead, J. and Mingers, J. (Eds.), *Rational Analysis for a Problematic World Revisited: Problem Structuring Methods for Complexity, Uncertainty and Conflict*. 2nd Edition. John Wiley & Sons, Ltd, Chichester.
- Ruth, J.P.S. (2000). "So Far Small Biz in Only Dabbling in E-Commerce" in *Business News New Jersey*. 13(23), p.24.
- Schein, E. (1997). "Organisation Development and the Organisation of the Future" in *Organisation Development Journal*. 15(2), pp.11-19.
- Schon, D. (1983). *The Reflective Practitioner*. Basic Books, New York.
- Schon, D. (1971). *Beyond the Stable State*. Temple Smith, London.
- Schwandt, T.A. (1997). *Qualitative Inquiry: A Dictionary of Terms*. Sage Publications, Thousand Oaks, California.
- Shah, N. and Dawson, R. (2003). "Preparing for an E-commerce Strategy for Success in the 21st Century" in Sharma, S.K. and Gupta, J.N.D. (Eds.), *Managing e-Business in the 21st Century*, Heidelberg Press, Vic, pp.255-276.
- Shanks, G. (1997). "The Challenges of Strategic Data Planning: an Interpretive Case Study" in *Journal of Strategic Information Systems*. 6, pp.69-90.
- Sharma, S.K. and Gupta, J.N.D. (2003). "E-Business in the 21st Century: Changing Business Paradigms" in Sharma, S.K. and Gupta, J.N.D. (Eds.), *Managing e-Business in the 21st Century*. Heidelberg Press, Vic, pp.5-14.
- Sieber, P. (1996). "Swiss Firms on the Internet: An Empirical Study" in *Proceedings of the Fourth European Conference on Information Systems Portugal*, pp.183-199.
- Silva, L. and Backhouse, J. (1997). "Becoming Part of the Furniture: The Institutionalisation of Information Systems" in A.S. Lee, A.S., Liebenau, J. and DeGross, J.I. (Eds.), *Information Systems and Qualitative Research*. Chapman & Hall, London, pp.389-414.
- Silvius, G. (2004). "IT and Small Business: An Unhappy Marriage" in *Proceedings of the 15th Information Resources Management Association (IRMA) Conference*. New Orleans, USA, 23-26 May, pp.316-318.
-

- Simon, H.A. (1978). "Rationality as Process and as Product of Thought" in *American Economic Review*. 68(2), pp.1-16.
- Singh, M. (2002). "Evolving E-business Models: A Process of Technology" in Waddell, D. (Ed.), *E-business in Australia: Concepts and Cases*. Pearson Education Australia, pp.8-22.
- Small Business Service (2002e). *Omnibus Newsletter*. SBS, 1st Quarter.
- Somogyi, E.K. and Galliers, R.D. (1999). "Information technology in business: from data processing to strategic information systems" in Galliers, R.D., Leidner, D.E. and Baker, B.S.H. (Eds.), *Strategic Information Management: Challenges and Strategies in Managing Information Systems*. 2nd Edition. Chapter 1. Butterworth-Heinemann, Oxford.
- Spencer, L. and Dale, A. (1979). "Integration and Regulation in Organisations: A Contextual Approach" in *Sociological Review*. 27(4), pp.679-702.
- Storey, D. (1994). *Understanding the Small Business Sector*, Routeledge.
- Stowell, F. (1991). "Towards client-led development of information systems" in *Journal of Information Systems*, No. 1, pp.173-89.
- Stowell, F. (1985). "Experience with soft systems methodology and data analysis" in *Information Technology Training*. May, pp.48-50.
- Thelwall, M. (2000). "Effective Websites for small and medium-sized enterprises" in *Journal of Small Business and Enterprise Development*. 7(2), pp.149-160.
- Timmers, P., Stanford-Smith, B. and Kidd, P.T. (Eds.), (1998). *Electronic Commerce: Opening Up New Opportunities for Business*. European Commission - Information Society Directorate-General. Report of the "G8 Global Marketplace for SMEs Regional Conference" in Manchester, 8th September 1998.
- Tonge, R., Larsen, P.C. and Ito, M. (1998). "Strategic Leadership in Super-Growth Companies-A Re-appraisal" in *Long Range Planning*. 31, pp.838-847.
- Ulwick, A.W. (2002). "Turn Customer Input into Innovation" in *Harvard Business Review*. 1/1/02, Product Number: R0201H.
- UK Online Report. (2001). *Succeeding in the Network Economy: the CEOs Framework for E-business*. BuyIT Network, London.
- Van Akkeren, J. and Cavaye, A.L.M. (2000) "Factors impacting on entry-level electronic commerce adoption in the automobile industry in Australia" in *Proceedings from the International Conference in Small Business (World Conference)*. June 7-10.
- Van Gigch, J.P. (1991). *System Design Modeling and Metamodeling*. Plenum Press, New York, London, 1991.
- Van Hooft, F. and Stegwee, R. (2001). "E-business strategy: how to benefit from the hype" in *Logistics Information Management*. 14(1&2), pp.44-54.
- Vassilopoulou, K., Keeling, K., Macaulay, L.A. and McGoldrick, P. (2000). "Identifying a Usability Evaluation Technique by Following an SME-Centred Approach" presented at *13th International Bled Electronic Commerce Conference*, Bled, Slovenia.

- Venable, J.R. (1999). *Using a WWW-based group support system to facilitate teaching of soft systems methodology*. Teaching and Learning Forum 99.
<http://cleo.murdoch.edu.au/asu/pubs/tlf/tlf99/tz/venable.html> (Accessed 11 July 2002).
- Veradarajan, P.R. and Cunningham, M. (1995). "Strategic Alliances: A Synthesis of Conceptual Foundations" in *Journal of the Academy of Marketing Science*. 23(4), pp.282-296.
- Vickers, G. (1980). "Education in Systems Thinking" in *Journal of Applied Systems Analysis*. 7, pp.3-10.
- Vidgen, R. (1997). "Stakeholders, soft systems and technology: separation and mediation in the analysis of information system requirements" in *Information Systems Journal*. 7, pp.21-46.
- Vidgen, R. (1994). "Research in progress: Using stakeholder analysis to test primary task conceptual models in information systems development" in *Proceedings of the Second Annual Conference on Information System Methodologies*. BCS IS Methodologies Specialist Group, 31 August-2 September, Edinburgh.
- Vidgen, R. and McMaster, T. (1996). "Black boxes, non-human stakeholders and the translation of IT through mediation" in Orlikowski, W.J., Walsham, G., Jones, M. and DeGross, J.I. (Eds.), *Information Technology and Changes in Organisational Work*. Chapman & Hall, London, pp.250-271.
- Vijayasarathy, L.R. and Jones, J.M. (1998). "Internet Shopping: Consumer Perceptions and Behavioral Intentions" in *Proceedings of Annual Meeting of the Decision Sciences Institute*. Las Vegas, Nevada, pp.415-417.
- Vogel, D.R. and Wetherbe, J.C. (1984). "MIS Research: A Profile of Leading Journals and Universities" in *Data Base*. 16(3), pp.3-14.
- Von Bulow, I. (1989). "The bounding of a problem situation and the concept of a boundary in soft systems methodology" in *Journal of Applied Systems Analysis*. 16, pp.35-41.
- Venkatraman, N. (1991). "IT-induced business reconfiguration" in Scott Morton, M.S. (Ed.), *The Corporation of the 1990s: Information Technology and Organisational Transformation*. 1991, pp.122-58.
- Walker, E., Bode, S. and Burn, J. (2004). "Micro-Business and Technology Uptake-Why are the Figures Still Low?" in *Proceedings of the 15th Information Resources Management Association (IRMA) Conference*. New Orleans, USA, 23-26 May, pp.525-528.
- Walsham, G. (1997). "Actor-Network Theory and IS Research: Current Status and Future Prospects" in A.S. Lee, J. Liebenau and J.I. DeGross (Eds.), *Information Systems and Qualitative Research*. Chapman & Hall, Cambridge.
- Ward, B. (1990). "Planning for profit" in Lincoln, T. (Ed.), *Managing Information Systems for Profit*. Wiley, Chichester, pp.103-46.
- Webb, B. and Sayer, R. (1998). "Benchmarking Small Companies on the Internet" in *Long Range Planning*. 31, pp.815-827.
- Welsh Development Agency, (1996). *Wales Regional Technology Plan: An Innovation and Technology Strategy for Wales*, Wales, UK.
- Wheatley, M.J. (1992). *Leadership and the New Science*. Berrett-Koehler Publishers, San Francisco, CA.
-

White, J. (1998). "Introduction to the special theme: small and medium enterprise strategy - a small business necessity, not a large firm luxury" in *Long Range Planning*. 31, pp.813-814.

White, K.B. (1985). "Perceptions and Deceptions: Issues for Information Systems Research" in Mumford, E., Hirschheim, R., Fitzgerald, G. and Wood-Harper, T. (Eds.), *Research Methods in Information Systems*. Elsevier, Amsterdam, pp.237-242.

Whyte, W.F. (Ed.), *Participatory Action Research*. Sage, Newbury Park, CA.

Wiggins, A. (2004a). "e-Commerce Policies in the EU: Enhancing the Competitiveness of SMEs through Innovation" in Corbitt, B.J. and Al-Qirim, N.A.Y. (Eds.), *e-Business, e-Government & Small and Medium-Sized Enterprises: Opportunities and Challenges*. IDEA Group Publishing, Hershey, PA, pp.156-183.

Wiggins, A. (2004b). "The Strategic Implications of the Adoption and Implementation of e-Business by UK SMEs in light of EU Policy Initiatives: Seven Case Studies" presented at *IRMA Doctoral Symposium*. IRMA, New Orleans, USA, 23-26 May, pp.1452-1455.

Wiggins, A. (2003c). "The Adoption and Implementation of e-Business by UK SME Start-Up Pure Players: Two Case Studies" presented at the *4th Annual Global Information Technology Management (GITM) World Conference*. Calgary, Alberta, Canada, 8-10 June, pp.224.

Wiggins, A. (2003b). "EU Innovation Policies: Their Impact on Entrepreneurs and SMEs" presented at the *3rd European Conference on e-Government*. Trinity College, Dublin, Ireland, 3-4 July, pp.463-474.

Wiggins, A. (2003a). "Managing the Adoption and Implementation of e-Business: Two UK SME Case Studies" in Sharma, S.K. and Gupta, J.N.D. (Eds.), *Managing e-Business in the 21st Century*. Heidelberg Press, Vic, pp.413-432.

Wiggins, A. (2002a). "The strategic implications of the adoption and implementation of e-business by SMEs in the UK in light of EU policy initiatives" presented at the *2nd International Workshop: New Models of Business: Managerial Aspects and Enabling Technology*. School of Management, St. Petersburg State University, St. Petersburg, Russia, 26-28 June, pp.57-64.

Williamson, O. (1985). *The Economic Institutions of Capitalism*. Free Press.

Windrum, P., de Berranger, P. and Meldrum, M. (2003). *SME-Internet Tracking Study Report*. Manchester Metropolitan University Business School, Manchester.
<http://www.business.mmu.ac.uk/research/reports> (Accessed: March 26, 2003).

Wood-Harper, A., Antill, L. and Avison, D. (1985). *Information Systems Definition: The Multiview Approach*. Blackwell, Oxford.

Wood-Harper, A.T., Corder, S., Wood, J. and Watson, H. (1996). "How we profess: the ethical systems analyst" in *Communications of the ACM*. 39(3), pp.69-77.

Yin, R.K. (1999). "Enhancing the Quality of Case Studies in Health Services Research" in *Health Services Research*. 34(5), part 2, pp.1209-1224.

Yin, R. (1993). *Applications of case study research*. Sage, Newbury Park.

Yin, R.K. and Heald, K.A. (1975). "Using The Case Survey Method To Analyse Policy Studies" in *Administrative Science Quarterly*. 20, pp.371-381.

Zhan, G.L., Murray, L.W. and Scott, D. (2000). "Multiple Country-of-Origin Facets and Consumer Reactions" in *Journal of Business Research*. 47(2), pp.121-133.

Zwass, V. (1996). "Structure and Macro-Level Impacts of Electronic Commerce: From Technological Infrastructure to Electronic Marketplaces" in *Foundations of Information Systems*. <http://www.mhhe.com/business/mis/zwass/ecpaper.html> (Accessed 24 May 2002).