

The London School of Economics and Political Science

*Facilitating Organisational Change and Innovation: Activating
Intellectual Capital within a Learning Paradigm*

Ai Yu

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Declaration

Except where otherwise indicated, such as references in the text and help as specified in the acknowledgements, this thesis is the result of my own work. I warrant that this authorisation does not, to the best of my knowledge, infringe the rights of any third party.

Abstract

Emanating from the mainstream accounting and managerial thinking, which hinges upon the “command and control” assumption, a firm’s Intellectual Capital (IC) is understood as an objective reality. Influenced by this understanding, advocates of the measuring paradigm attempt to posit IC under parsimonious conditions within a reporting system. This thesis contributes to an emerging critical trend that seeks to counterbalance the limitations of the measuring paradigm and explores the possibilities of constructing a learning paradigm.

A series of high-level questions that confront both paradigms, including their ontological assumptions, methodological considerations, foci of practice, and criteria for IC-information disclosure, are considered. Whilst the measuring paradigm prioritises the activities of assessing and reporting individual IC elements, a learning paradigm is concerned with nurturing a learning motive in IC practice for organisational change and innovation. The analysis of a learning paradigm draws on the works of three process-philosophers: Habermas, Vygotsky and Deleuze.

This thesis engages with the case study of “InCaS”: a project combined IC research and practice, involving researchers and 25 SMEs from 5 European countries. Data were collected through qualitative survey and administrative documents, interviews, and group discussions over a 30-month-period. Thematic analysis and reconstructed stories analysis were applied where suitable.

The findings reveal that a learning paradigm does not stand against the measuring paradigm, but transforms it by enabling a flowing process of IC in SMEs. This flowing process contributes to the generation and development of new knowledge, new practice, and a new sense of positive energy. Based on this, the thesis suggests that the future of IC practice should focus on “IC flow management”, i.e. activate a non-linear process of learning-by-reflection, learning-by-participation, and learning-by-affection. In doing so, IC would not be perceived as a lifeless commodity, but as a metaphor of life that accommodates different pathways to value.

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1. Grounding and Overview of the thesis

“We make doors and windows for a room. But it is the spaces that make the room liveable. While the tangible has advantages, it is the intangible that makes it useful”.

– Lao Tzu¹, 600 BC

The research presented here was inspired by a European Union funded research-and-practice combined project, called “Intellectual Capital Statement – Made in Europe” (henceforth, the ‘InCaS’ project), which was carried out between 2005 and 2008 over a period of 30 months. InCaS sought to strengthen the innovation potential of European Small and Medium sized Enterprises (SMEs) through generating and developing their knowledge on Intellectual Capital (IC) in a fast changing global market. Within this context, IC is seen as a firm’s know-how, which combines knowledge-based resources and activities that potentially contribute to a firm’s future success (MERITUM, 2002, p.7). While the project was running, it was considered the ‘state-of-the-art’ current in the field of IC, since “it builds on a wide range of experiences with the use of Intellectual Capital Statement made throughout Europe” (InCaS Phase I Implementation Guideline, 2008, p.3). Nevertheless, the real implementation in the 25 pilot SMEs across 5 European countries achieved various results. In theory, the IC Statement is defined neatly as a report that shows “how an enterprise creates value for its customers by developing and using its IC” (RICARDIS, 2006, p.11). In practice, however, numerous IC models, metrics, and frameworks have been adopted without clarifying the very basic ontological and

¹ Cited by Professor Karl-Erik Sveiby, available at

http://www.emeraldinsight.com/learning/management_thinking/interviews/pdf/sveiby.pdf?PHPSESSID=boike9fck55tdsdqgn9a2col44, last retrieved 22nd Feb. 2011.

methodological foundations underneath (Liu and Wang, 2008). This is exacerbated by the fact that very little is known about the relationship between those ontological and methodological divisions and the real impact that IC practice would make. Hence, this research seeks to fill in those gaps by exploring two paradigms in the field of IC, including their ontological assumptions, methodological considerations, implications, and criteria of IC information disclosure. In particular, the emphasis is given to a learning paradigm, since it heralds a new way of thinking and practising in the field of IC.

1.1 European SMEs, globalisation, and innovation

Today, SMEs play an important role in the European economy in terms of boosting employment and innovation in the region, and they are also involved in global markets intensively by becoming part of the supply chains of large enterprises or by self-expansion and growth (Cagliano *et al.*, 2001). According to Article 2 of the Annex of recommendation 2003/361/EC, in Europe, SMEs refer to those micro, small and medium-sized enterprises which employ fewer than 500 people, which have an annual turnover not exceeding 50 million euro, and/or an annual balance sheet total not exceeding 43 million euro (European Commission, 2003, p.36). In a globalising market, where large companies tend to substitute offshore employment for domestic employment for lower cost of production, SMEs become even more important for increasing the domestic level of employment. In addition to the contribution to job creation, SMEs promote a market mechanism for commercialising the knowledge and ideas created but not implemented in large enterprises. Therefore they are held accountable for generating innovative activities and adding diversity to the national economy. A recent report by The Work Foundation's knowledge economy programme (Brinkley, 2008) confirms the important role of the SME sector in promoting industrial innovation and technological advancement.

More specifically, the EU non-financial business economy counts over 20 million enterprises, over 99% of which are SMEs that have less than 250 occupied persons. Within the SME sector, the vast majority (92%) are micro enterprises having less than 10 occupied persons (Audretsch *et al.*, 2009). Between 2002 and 2007, the number of SMEs has increased by over 2 million, while the number of large enterprise increased by only 2,000 (*ibid*). Nevertheless, the entire SME sector seems to have a lower labour productivity than that of its counterpart, as a result of the fact that SMEs contribute to a lower share to value added (58%) than to employment (67%). These figures imply both challenges and opportunities for European SMEs: while large enterprises benefit from both scale economies and capital-intensive R&D activities in the global economy, SMEs seem to be in a disadvantaged position as regards both factors (OECD, 2006). The major business constraints of SMEs², besides the purchasing power of the customers, were lacking of ‘skilled labour’, ‘access to finance’, ‘new technology and new forms of organisation’. In the broader context of globalisation (Giddens, 2000), where the economic activity has been shifted from a local or national sphere toward a much more international or global arena, the pressure is mounting for those SMEs who rely too much on local markets and become ill-equipped in a fast-paced business environment. Given the fact that any marginal improvement of SMEs’ performance could potentially make a major economic impact, it is worthwhile devising a pragmatic framework that may help SMEs achieve organisational change and innovation within their grasps (Davenport and Bibby, 1999).

One of the most important implications of globalisation is that the OCED nations are shifting from traditional factors of production, such as land, labour, and capital, to knowledge-based economic activities (OCED, 2006). As a number of researchers have

² According to Observatory of European SMEs ENSR – European Network for SME Research: Highlights of Report 2003, see details at http://ec.europa.eu/enterprise/policies/sme/facts-figures-analysis/sme-observatory/index_en.htm, last retrieved 20th Feb. 2011.

noticed (Castells, 1996, O'Donnell *et al.*, 2006), the activities of applying knowledge to knowledge itself, i.e. the processes of knowledge creation, have promoted productivity and technical advancement more rapidly than ever before. Compared to their large counterparts who enjoy an abundance of resources in support of long-term R&D activities, SMEs as innovators might have an edge only when they can play to their strengths in the following three aspects: (i) *Staff cohesiveness*: it refers to the relative easiness of sustaining a fever pitch of excitement inside the organisation. Since the links between tasks, staff, reward, and culture are tight and dependant, employees in SMEs can be particularly resilient, creative, and committed in hard times (Scherer, 1997; OECD, 2000); (ii) *Flexibility*: as Mintzberg (1999) emphasises, due to their size, ownership, and number of employees, most SMEs have flexible management structures and business systems that may support shorter reaction time and some risk-taking decisions; (iii) *Local knowledge/skills and business connections*: narrow or detailed technical advances are often too modest to interest giant corporations, whereas SMEs can thrive on those niche markets in which a long-lasting relationship with all business partners is encouraged, and their local knowledge and specialised skills can be tailored to meet the requirements of the specific market (Kets de Vries, 1993).

1.2 Organisational change and innovation

In the context of globalisation, the increasing competition from large enterprises coupled with the rapid market change have resulted in the need for SMEs to re-examine and modify their strategy to embrace change and innovation in their respective organisations. However, which type of change and innovation could SMEs aim for, considering they have limited strengths to draw on? To answer this question, the complex nature of organisational change and innovation needs to be explained first.

1.2.1 Organisational change on multiple levels of analysis

It can be argued that dealing with change is a crucial topic to any organisation in today's highly competitive and continuously evolving business environment (Todnem, 2005).

However, the complex nature of organisational change requires us to understand change on various levels of analysis: for instance, the role of change agent or how change comes about; the rate of occurrence; and the scale of change are the three most influential aspects of organisational change (Poole and Van de Ven, 2004, p.2). In the following paragraphs, I shall unpack each aspect in more detail. Although I have selected two opposite ends of a continuum to illustrate the differences of change, it is essential to recognise that every point on the continuum is a mixture *de facto*, since the concepts of social science are, more or less, socially constructed (Liu and Wang, 2008, p.485).

Planned vs. Emergent

At first sight, planned and emergent change describes how change comes about. On a deeper level, however, it is a question concerning the role of change agent in an organisational context. The planned changes emphasise the importance of knowledgeable actors who conceive consciously and implement changes to improve the situation (Todnem, 2005). As such, planned changes have their reference point in a desired end state. The Lewinian three step model: unfreezing – change – refreezing is a typical example of this kind that assumes organisational change is predictable and can be planned and controlled by the top management of the firm (Lönqvist *et al.*, 2009, p.561). In many instances, however, the firm's top management might not have a full understanding of the consequences of their decisions (Wilson, 1992). By contrast, the emergent changes are less concerned with a top-down approach to human choices. They tend to focus on the self-evolving characteristic of changes. Viewed in this light, emergent changes can be

constructed as an open-ended process of adaptation to the changing circumstances and conditions (Burnes, 2009). As some researchers have noticed (Dawson, 1996), even the most carefully planned and executed change programmes have to deal with emergent impacts. This unpredictable nature of change reflects the need for learning, since learning is fundamentally a process that develops through the relationship of a multitude of factors in an organisation. A central message of recent literature of change is the acknowledgement that organisation-level change contains important emergent elements, which resist being fixed to any predetermined change programmes.

Episodic vs. Continuous

Weick and Quinn (1999) characterise change in terms of its rate of occurrence, that is, ‘tempo’ in their own terms. Based on tempo, they distinguish episodic change from continuous change. While episodic change is conceived to be “infrequent, discontinuous, and intentional” (p.365), continuous change is described as “ongoing, evolving, and cumulative” (p.375). This framework of differentiation is correlated with other similar ones, including incremental versus radical change, continuous versus discontinuous change, or first-order versus second-order change (Poole and Van de Ven, 2004, p.5). In practice, people tend to think of episodic change as a failure of adaptation, since the occurrence of this type of change is always associated with unexpected interruptions, which are usually the consequence of an external environment change. Continuous changes, on the other hand, are driven by organisational instability and alert reactions to daily contingencies. Therefore, continuous changes represent a pattern of endless modifications in the work processes or local practices. Although episodic change is employed in recent change initiatives and seems to be more “cost-effective” (Todnem, 2005, p.372), there has been a common concern shared by a number of contemporary researchers: episodic change does

not last long, and it may create situations where major reform is frequently required. As Burnes (2009) argues, ultimately it is the organisation's ability to change continuously that keeps it up with the fast-moving pace of external environment change.

Partial versus Holistic

When changes are defined by scale, two types of change are mentioned frequently, that is, partial change versus holistic change (Todnem, 2005, p.377). Dunphy and Stace (1990) use the term 'fine-tuning' to describe partial change that manifests at a departmental level of a focal organisation. In contrast, 'corporate transformation' is used to describe corporate-wide change, which implies cultural change of the entire organisation. Recently, an expansion of this 'divisional-organisational' framework of distinction highlights the level of change occurs in a team, a working group versus the level of change occurs in a community, a socio-ecological system (Bierly III *et al.*, 2000). While the former can be understood as a smaller unit of the "part", the latter is a bigger unit of the "whole". As Hearn and Pace (2006) demonstrate in their theory of value ecology thinking, changes in a socio-ecological system blurs the boundary of a focal company by establishing inter-organisational connections along the firm's value chain. However, regardless of whether it is divisional change or organisational change, it is not possible for any organisation to make a change in a meaningful way without its employees changing. Ultimately, individuals must somehow think differently, behave differently, or believe differently when changes take place (Poole and Van de Ven, 2004, p.32). This point reminds us the role of individual actors as the subject under study. As social psychologists Ackerman and Humphreys (1990) point out, individual changes can be captured through the observation of cognitive (e.g. knowledge, mental capabilities), behavioural (e.g. job performance, skills), and affective (e.g. emotions, motivation) variables.

Dealing with complexity and uncertainty has become a permanent theme in today's business world. Considering the ever changing business environment as well as the potential strengths that European SMEs may acquire as innovators, the question on how to facilitate emergent, continuous, and holistic change seems to be more pertinent against the backdrop of knowledge-based economy (OECD, 1996, 2000). This is primarily because SMEs are potentially good at capitalising on intangible resources for the following reasons: (i) In comparison with large enterprises, most SMEs are not technology advancer and they have fewer resources and less experience to support planned change, such as long-term based and investment-intensive R&D activities. And yet, their flexible management structure and business system tend to shorten reaction time to changes, particularly emergent changes; (ii) The size, ownership, and number of employees determine that cross-functional activities occur naturally within SMEs, and these activities require continuous improvement as a fundamental step alongside organisational change and innovation; (iii) The closeness to local business partners and customers may grant SMEs the opportunity to co-evolve with them. The condition of co-evolution is that holistic change comes from within, which affects every aspect of the changing object. Viewed in this light, it is not the adaptation of the 'parts' but the connectivity within the 'whole' that matters most in a socio-ecological system (Kolb, 2008, p.127).

The call for attention to the emergent, continuous, and holistic change also implies that the approach to facilitate organisational change demands a process-based theory rather than a variance-based theory (Poole and Van de Ven, 2004, p.10). While a variance-based approach only attempts to screen out essential variables to represent the important attributes of the subject under study, i.e. 'well-behaved' casual relations, the primary focus of the a process-based approach is to illustrate a series of events that unfold through time

and bring about interesting and perhaps unexpected outcomes. That is to say, the process-based approach may provide explanations that include multiple causal factors operating at different levels and across different temporal spans (*ibid*, p.12).

1.2.2 Understanding innovation from the perspective of knowledge dynamics

From a social psychology perspective, there are three meta-theories of knowledge that can be used as the frame of reference to account for the sources of innovation (Steinberg, 2005, p.4). Innovation as a reflection of knowledge dynamics can be acquired from the processes in which novel concept/knowledge emerge and previous concepts are rendered less relevant (*ibid*). The developmental path of these meta-theories represents the change of understanding concept/knowledge from a pure subjective perspective to an inter-subjective and inter-objective perspective. Since the theory of knowledge is usually defined as epistemology (Bryman, 2008), these meta-theories in fact set the epistemological foundation for the discussion on innovation. However, I would like to restate that the purpose of introducing these meta-theories is not to study innovation *per se*, but to familiarise my readers with the fundamental logic behind change and innovation.

The Cartesian's assumption on knowledge is the first logic under investigation. The influence of French philosopher Rene Descartes (1595 – 1650) on Western culture in general is far-reaching. His idea that 'thought' exists independently from human body and the physical world (known as "*cogito ergo sum*" – I think therefore I am) grants the 'subject' or the 'spiritual-mental' sublime superiority, whereas it makes the 'object', 'context', or 'human senses' inferior. Descartes believed that the only method through which we perceive the external world is through senses, yet human senses can be fallible, and consequently the concept of knowledge can also be fallible. Based on this reasoning,

he postulated that the only logical approach to knowledge is to question anything that involves the senses. Hence, the mind-body or the subjective-objective dichotomy became one of the most controversial legacies of his philosophical thinking. For Descartes and his followers, innovation is nothing but a by-product of human doubts, i.e. it is the world out there that needs to be represented by the subject through ‘universal methodic doubts’ (Newman, 1994). Through these doubts, we approach truth and certainty gradually. The key to this representational process is that new discoveries must be screened out completely to be detached from human senses. The problems with this Cartesian thinking are obvious. As Jovchelovitch (2007) notes, Descartes’ reliance on individual’s mental representation to understand the world creates two unprecedented burdens: solitude and self-denial. The subjective-objective separation makes self the only basis on which to evaluate what is going on and to deal with all the potential errors and mistakes caused by self-judgment. Moreover, the separation between the subject and the object forces the subject to stand outside himself or herself as an observer. As a consequence, the separation leads to nothing but endless self-denial. Once we follow the logic of Cartesian thinking, our understanding of innovation will be trapped in a barren island of solitude and self-denial.

The second meta-theory explaining innovation owes to Hegelian-Marxist philosophy. German idealism philosopher Hegel (1770 – 1831) influenced writers of widely varying positions. In particular, Karl Marx and his revision of Hegelianism bring the Hegelian-Marxist line of thinking into action. On a deeper level, this line of thinking is the development resulting from a conceptual mind that integrates and unites a set of contradictions and oppositions. This process is usually described as “dialectic”, an approach which seeks to overcome the limitation of Descartes’ subjective-objective

separation. Most often, the Hegelian-Marxist dialectic is characterised as a three-step process, namely, “thesis-antithesis-synthesis”. Thesis is the original intellectual proposition, whereas antithesis is simply the negation of that thesis, i.e. a counter-action to the original proposition. Synthesis tends to resolve the conflicts between thesis and antithesis by making reconciliations. In so doing, synthesis is believed to lead the formation of a new proposition. The triad proposed by Hegel and Marx is a spirally ascending process, which encourages new ways of thinking and it consequently propels knowledge creation. Powerful as it may seem, the “thesis-antithesis-synthesis” approach is not flawless. What seems to be wrong is that the triad assumes ‘difference’ is the measure of conflicts and oppositions, and that particular ‘difference’ extracted from the contradictions appears to be a unity. Even though this widely accepted viewpoint might have departed from Hegel’s original intent, the triad still reinforces an impression that conflicts and contradictions can be sought only from the outside world rather than from within. Behind this statement lies a further assumption that there must be something pre-existent awaiting its conflicting counterpart to be made evident.

Innovation in accordance with the logic of dialectical thinking cannot fully capture ‘something’ entirely new that is not yet accepted by an existing system of order. This is mainly because completely novel knowledge may arise out of “nowhere”: it is neither stored in the heads of some individuals, nor in a common pool of pre-existing meanings. For instance, the tacit-explicit knowledge distinction (Nonaka and Takeuchi, 1995) only explains how already enfolded knowledge becomes unfolded through dialectical conversion. A typical example would be: some organisations expect a know-it-all consultant to bring innovation into an existing system. Within this context, language is understood as a vehicle for translating tacit concepts into words or other symbols. However,

we are still not sure about how entirely new knowledge comes into being. This question remains mysterious until another meta-theory opens our eyes. The third meta-theory is a collective effort made by French philosopher Deleuze (1925-1995) and his co-writer Guattari. The Deleuzo-Guattarian philosophy of becoming draws our attention to the creative forces that are not immediately understood or perceived by people, such as disruptions or discrepancies suddenly popped up. Deleuze explains “becoming” by virtue of the concept of “rhizomatic thinking”, which he refers to as “a disruptive dynamic that creates conditions for emergence by discontinuing existent dyadic opposition and introducing radical multiplicity into phenomena that we see traditionally approach as discretely bounded, conceptual and linearly evolving” (Steinberg, 2005, p.206). The result of the rhizomatic thinking is the discovery of multiple reasons that do not rely on the difference being measured between a pre-existing concept and its opposition. Hence, it is a real difference-in-itself (Deleuze, 1968).

Specifically, a rhizome is a structure without outside: it is made of multiple and non-hierarchical entry and exit points which connect with each other. Plateaus, according to Deleuze (1988, p.24), means “any multiplicity connected to other multiplicities by superficial underground stems in such a way as to form or extend a rhizome”. A plateau resembles a local representation of knowledge that is grounded on the rhizome of world experiences. A local representation of knowledge will turn up and seek to resolve a local problem. Nevertheless, when this problem is fixed, this particular knowledge representation shall dissolve itself immediately. Only the learning experiences from that problem-solving process are kept to continue enriching the realm of world experiences. As such, any knowledge representation would not refer back to its specific origin but instead

function as intersecting lines that are directed towards the future as they make and/or break connections continuously.

In recent history, the rhizomatic thinking inspires a great number of intellectuals. For Lacan, in his psychoanalysis domain, rhizomatic thinking is “we can hear the polyphony of contexts when we listen to poetry, a discourse where the words or signifiers align vertically and horizontally as musical notes along a score.”³ For Eco (1984), in his semiotics, the rhizomatic thinking is “the open text that allows multiple or mediated interpretation by the readers”. In the same spirit, Barthes made distinction between ‘readerly’ and ‘writerly’ in his 1968 essay *The Death of the Author*.⁴ For Humphreys, in his decision-making studies, the rhizomatic thinking is a decision hedgehog with multiple spines nurtured by “story-telling in rich, audio-visual language [which] provides innovative knowledge for content-generation and structuring within restricted language” (Humphreys *et al*, 2006). Amongst various empirical studies, it is perhaps Nelson’s and Winter’s (1982) evolutionary model and Hearn’s and Pace’s (2006) “value ecology” network that best exemplify the rhizomatic thinking. They all have taken into consideration unrelated phenomena, heterogeneous elements, unfamiliar connections, and emergent concepts together. Herein, the rhizomatic thinking does not challenge existent concepts in a dialectic sense, but it turns them upside down by affecting people in their sense experiences (Steinberg, 2005).

The three meta-theories explicated the sources of innovation. The Cartesian philosophy, while it highlights the possibility of making use of the cognitive power (the logic of doubt) inherent in human beings to discover what is new out there in the physical world, is severely limited by its attempt to separate the subject from the object. The Hegelian-

³ Online quotations from an anonymous author, retrieved on <http://www.textetc.com/theory/lacan.html>

⁴ Online quotation from Wikipeda, last retrieved 24th April 2010, available at http://en.wikipedia.org/wiki/Open_text

Marxist philosophy, which is also known as *dialectic dynamics*, expands the context of innovation from individual-focused construction of knowledge to the inter-subjective and inter-objective creation. It calls for attention to be paid to conflicts, struggles, contradictions, oppositions, and any of these that may create a new pathway to synthesis differences. Last but not least, the Deleuzo-Guattarian philosophy, best known as *rhizomatic dynamics*, negates the dependence on pre-existing concepts to create new knowledge. It opens up the possibility of generating knowledge by anticipating for those de-familiarised encounters and connections. Innovation in this sense is not a simple repetition of the dialectic logic, but the accommodation and embracement of multiple differences, reasons and rationalities. This kind of multiplicity can be expressed in the symbolic sense through the creation of new concepts, since new concepts may help people think beyond their current assumptions and thus bring about a different insight into the inter-connections between self, others, and social contexts. In sum, the three meta-theories of innovation set the stage for this research: understanding the nature of dialectic dynamics and rhizomatic dynamics would seem to be the best way to avoid the Cartesian dichotomy. Correspondingly, a comprehensive understanding of knowledge dynamics is crucial to encourage organisational change and innovation.

1.3 IC, knowledge, and learning

According to Teece (2000), knowledge existing at a firm's level is becoming a key driver for organisational performance, be it product, service, technology, marketing, or process innovation. It is also true that the deepening involvement of knowledge in production has "silently transformed key premises upon which organisational action is predicted making the management of information the backbone of many vital organisational operations" (Kallinikos, 2009, p.188). To activate a firm's innovation capacity, therefore, knowledge

needs to be combined with complementary assets, activities, and networks that are pertinent to the firm's stakeholders. Looking through this knowledge lens, the innovative capacities that SMEs might develop in the knowledge-based economy can be linked to the generation and development of a firm's IC (OECD, 1996, 1999; MERITUM, 2002; RICARDIS, 2006). The concept of IC has interested researchers and practitioners from the European Union and North America since early 1990s. It covers the exploitation of all forms of knowledge resources and business processes that are capable of driving new knowledge and value creation activities in organisations. As Figure 1 shows, IC is composed of human, organisational, and relational resources and activities (RICARDIS, 2006) in a business context.

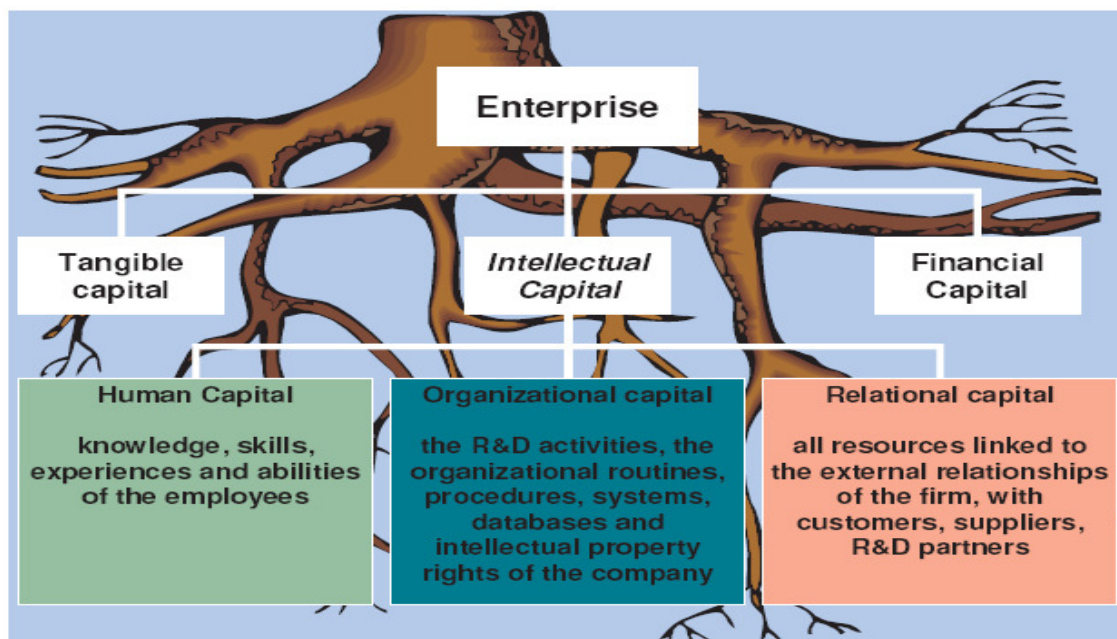


Figure 1: IC as the root for a firm's sustainable growth
(Source: RICARDIS, 2006)

IC usually contains three different kinds of capital. "Human Capital" refers to knowledge, skills, experiences and capability of employees. "Organisational Capital", also known as "Structural Capital", includes the R&D activities, the organisational routines, procedures, systems, database, and intellectual property right of the company. "Relational Capital"

contains all resources linked to the external relationships of the firm, with customers, suppliers, and R&D partners (*ibid*). Hence, the concept of IC encompasses “all the intelligence found in human beings, organisational routines and network relationships” (Choo and Bontis, 2002, p.626). Because of its importance and invisibility, IC is likened to the root of a tree that constantly supplies knowledge to organisations (Edvinsson, 2002).

The root metaphor also implies that IC is concerned fundamentally with an organisation’s future earning potential rather than its short-term benefits (Edvinsson, 2002; RICARDIS, 2006). This distinctive feature sets IC apart from other forms of capital, such as tangible capital or financial capital. Capital in physical forms has been discussed widely in a firm’s annual financial statement, which is built on the traditional accounting model within the strict principle of historic cost (Mouritsen, 2006). Following this principle, a snapshot of the static value of a firm’s assets can be captured, and yet the firm’s real-time value that fluctuates over time as a result of market changes cannot be monitored. In contrast, an IC perspective, which focuses on knowledge and its pathways of transmission, seems to give prominence to the value creation process influenced by a firm’s intangible resources and activities (Edvinsson, 2002, p. 47). Hence “how to forge the links between IC, knowledge transmission, and pathways to value creation” is a question worth considering.

On the one hand, when the importance of knowledge-based market and economic activities is highlighted in the context of globalisation, IC is usually considered as a knowledge asset. To this end, firms tend to build up their capacities to create new products and services, exploit new markets, and come up with new ways of doing businesses with their partners. This innovative capability, as the foundation for a firm’s survival and sustainable development, would apply to all industries, no matter whether they are high-tech or low-

tech, retailing or agriculture, manufacturing or services (RICARDIS, 2006, p.13). Since SMEs play an essential part in their respective national economy, the idea of linking IC to SMEs' performance seems to be logically sound. Indeed, the exploration of this association is not a brand new topic in Europe. As early as 18 years ago, Professor Leif Edvinsson carried out the first initiative of measuring IC when he was appointed as the first director of IC in Skandia – a Swedish insurance company. Recently, a variety of efforts have been made in several European countries (UK, Denmark, Sweden, Spain, German etc.) focusing on IC and the firms' future earning potential, including the InCaS project that I took part in (Yu and Humphreys, 2008). The Lisbon Agenda in March 2000 aimed at making European Union one of the most dynamic and competitive knowledge-based markets in the world (Mertins and Will, 2007). It is believed that the flourishing studies of IC in the past decade contributed to the success of the Lisbon Agenda.

Similar to other well-known IC projects (MERITUM, 2002; RICARDIS, 2006), the concept of IC was broken into three sub-categories within the InCaS context. Each capital was then represented by a set of common IC factors that were derived from previous empirical studies (European ICS Guideline, 2008). For instance, “product innovation”, “knowledge transfer”, “management instruments”, and “IT” were factors that corresponded to the Structural Capital category. In order to measure “product innovation” further, a number of indicators, such as “number of new products”, “number of products in design and development”, “number of patents”, “number of registered trademarks” were invented and applied in every pilot SME's measurement of their Structural Capital. All these efforts that sought to provide relevant information on a firm's IC were summarised in a detailed report, called the ‘IC Statement’. To this end, ‘IC reporting’ captures the activities of measuring and reporting individual IC elements in an organisational setting.

While traditional financial reporting systems only recognise the value the tangible or financial capital of a firm, IC reporting systems seek to highlight the hidden drive of a firm, which might help companies create a new insight into their future earning potential and long-term sustainability (Mouritsen, 2004; Andriessen, 2006). The widespread and growing frustration with traditional financial reporting as well as the high expectation on IC inspire academics, consultants and practitioners to think of IC reporting as a supplement to a firm's annual report. On this account, IC reporting is seen as a reporting instrument that records the size and development of knowledge resources related to employees, customer relations, and technical advancement (Mouritsen, 2009b, p.801). Against this backdrop, a plethora of IC models, metrics, or frameworks have been developed, for instance, Sveiby (2004) identified 28 different models in use. Unfortunately, a well-established and mutually agreed framework for reporting IC worldwide is still missing, while various models generate insurmountable ontological and methodological divisions (Liu and Wang, 2008, p.484). A large body of IC literature is concerned with the most 'promised' benefits of IC reporting, which includes but are not limited to (i) enhancing a firm's internal management efficiency, in line with the axiom 'what gets measured gets managed' (Steward, 1997); and (ii) facilitating the firm's external communication with stakeholders, especially attracting valued resources in the financial market (Andriessen, 2004). To make the discussion on the use of IC reporting more meaningful, a clarification of the major ontological considerations behind the various forms of IC models is necessary.

When organisations place emphasis on their learning experiences of engaging with knowledge activities, IC practice grants attention to knowing *per se*, i.e. an active process of relating between human minds, organisational practices, and social contexts. This perspective sets itself apart from the view that IC is merely a knowledge asset, since it

acknowledges the relational and interactive nature of knowledge (Stacey, 2001, p.5, Steinberg, 2005). Based upon this perspective, I would like to point out the important role of learning in terms of enabling the generation and development of IC in an organisational context. The lack of mentioning of “learning” in the field of IC might be caused by the following excuses: (i) most people treat learning as an intermediate process and they argue that it cannot stand on its own; (ii) the majority of knowledge-based activities in organisations do not last long enough to show the effect of learning; (iii) some may even argue that the opportunity cost of learning is huge as learning does not always lead to positive outcomes (Dierkes *et al.*, 2003). These presumptions prevent learning from being taken seriously as the focus of IC practice. The cost of this ignorance is enormous, for the meta-capability of learning mediates all the core competencies that organisations can possibly develop. Therefore, I would call for the attention to be paid to the role of learning insofar as it enables the generation and development of IC. Since successful learning usually results in new knowledge, it is worth asking how a learning focus in the field of IC enables the generation and development of knowledge that automatically pattern itself in a variety of coherent ways (Stacey, 2001).

1.4 The ontological divisions in the field of IC

IC studies are observed to adopt an inverse development path: from applied research to basic research (Liu and Wang, 2008, p.485). This is primarily because most early advocates of IC are practitioners whose backgrounds are somehow related to finance or management accounting. For this reason, many measures, value orientations, logics, and methodological consequences are developed before ontological assumptions are articulated (*ibid*). In short, there are two widely discussed ontological assumptions in the field of IC. The first one emanates from a management accounting perspective, which considers “IC as

an objective reality”. As such, IC elements are deemed to have relatively stable attributes and can be linked with a firm’s performance through a causal map (Roos, 1998, 2005), and subsequently the very existence of IC is always assigned a positive value regardless of its context. In contrast to this assumption, contemporary researchers coming from multidisciplinary backgrounds who join this field later tend to view “IC as a social construct” (Mouritsen, 2004, 2006; O’Donnell, 2004; Chaharbarghi and Cripps, 2006; Jørgensen, 2006, Dumay, 2009). This assumption upholds that the relations among IC elements are dialectical and multiple, depending on the contexts and the enactment of agents (Liu and Wang, 2008, p.486). In other words, IC can be seen either as assets or liabilities. As Bukh *et al.* (2001) point out, ‘capital’ used in the term of “intellectual capital reporting” is not an authorised accounting term, since almost all of the IC models in use equate IC only with assets, ignoring the potential impact of intellectual liabilities, whereas the basic formulation underlying the balance sheet is: “Assets – Liabilities = Capital” (Gowthorpe, 2008, p.827).

Viewing IC as an objective reality with a content focus predominates the current IC practice, and this dominance can be exemplified vividly by the so called ‘measuring paradigm’, an explicit theoretical and practical attempt to break IC into definitive pieces and put them under parsimonious conditions within a reporting system (Sveiby, 2004; Mouritsen, 2006; Liu and Wang, 2008). The measuring paradigm seeks to establish universally accepted framework or model that might help standardise the calculation, ranking, numbering, and quantification of IC and its sub-categories. The visible output of this paradigm is the production of ‘IC Statement’, a report full of numbers, ratios, or percentages. The claimed benefit of the IC Statement includes making comparison of performance-related IC indicators across various firms, industries, or sectors. As Mouritsen

(2002, p.12) points out, the prevalence of this measuring paradigm in the field of IC must have its own reason, such as the continuous pursuit of objectivity in management; the need for re-organisation of complex aspects; the external pressure of technological developments; and the justification of major values in a given community (Catasús *et al.*, 2006b, p.505-06). Nevertheless, this measuring paradigm severely limits the potential that the concept of IC would otherwise develop. In Chapter 2, I will give a critical review on the measuring paradigm, including its methodological manifestations in practice as well as their respective problems. In the meantime, the potentiality of stepping out of this content focus treatment of IC will be discussed too. In the end, the question “to which extent, IC measurement can be its own realm of activity” (Mouritsen, 2006) will be addressed while the linkage between the measuring paradigm and a different paradigm will be explored.

Although extant literature and a few case studies have begun to pick up the issue that the interactions between IC elements are not clear, a real process-focused definition of IC, which is capable of explaining how the interactions between IC elements transform organisational knowledge, practice, or culture, is still largely absent. In Chapter 3, I will introduce what I call a “learning paradigm”, a theoretical and empirical focus that seeks to help people understand the ‘innate value’ of IC practice for the purpose of facilitating organisational change and innovation. As its literal meaning shows, the innate value is something from within, which should be grasped from the standpoint of subjective experiences of an agent and/or the inter-subjective experiences of a plurality of individuals. Learning, as both a scientific and an everyday concept, has been subject to different interpretations (Antonacopoulou and Gabriel, 2001, p.439). That is to say, it is impossible for any school of thought alone to do justice to learning in its full complexity and diversity. Hence, learning as a concept naturally embraces multiple dimensions (Harris and Schwahn,

1961), e.g. process, product, and function. It is also affected by various factors (Direkes *et al.*, 2003), e.g. the biological, the social, or the psychological; and it connected to a set of relevant concepts (Stacey, 2001), such as knowledge, IC, change and innovation.

In this thesis, ‘learning’ encompasses three-fold meanings: to think, to act, and to affect. The combination of these three constitutes a paradigm change, far richer than the cognitive change, behavioural change, or affective change alone. Likewise, ‘a learning paradigm’ as a coined phrase seeks to capture the dynamic characteristics of IC. For this reason, it should be distinguished from the widely debated concepts – learning organisation (Senge, 1990) and organisational learning (Argyris and Schön, 1978) – all of which entrapped learning into the grand ‘systems thinking’ that attempted not only to control tasks-based performance or the whole systems of roles required to carry out tasks, but also to control the systems of beliefs and values (Stacey, 2001, p.3).

Drawing on the philosophies of Habermas (1984, 1987), Vygotsky (1978, 1987), and Deleuze (1977, 1988, 1994), as well as the further intellectual development of their followers, I will seek to demonstrate the possibility of establishing a learning paradigm in the field of IC by integrating three different perspectives, namely, the critical, the material, and the virtual. The critical perspective confronts the dark side of IC reporting, i.e. IC can be assets as well as liabilities, and it is a topic, which has constantly suffered from the issue of managerial control and command (O’Donnell *et al.*, 2006; Gowthorpe, 2008). This confrontation calls for a Habermasian ‘ideal’: the importance of communicative action in relation to the ‘ideal speech situation’ and the role of critical reflection. The latter will be backed up by a pair of concepts, i.e. ‘IC Lifeworld’ versus ‘IC system’, which imply the possibility of moving toward the ‘ideal’ of IC reporting whilst keeping the dark side of IC

in mind. The material perspective shows that IC reporting is more of a practice than of an ideological discourse. The Vygotskian concepts of mediation and internalisation/externalisation demonstrate the possibility of making use of IC reporting as a boundary object for transforming local practice in an organisational context. Finally, the virtual perspective highlights that the process of implementing IC reporting systems requires affective resonance, through which the actual IC items becomes virtual and vice versa. Two Deleuzian concepts, assemblage and becoming, may help us understand this point better. Altogether, the three perspectives enhance our understanding of the richness and dynamics of IC by means of contributing to a process-focus definition of IC. More importantly, a learning paradigm backed up by these perspectives proves the point that IC should not be too concerned with the measurement of historical assets, it is more interesting to serve as a mechanism that identifies problems and thus induces change and innovation for the future (Mouritsen, 2009a, p.155).

Despite the apparent incommensurability between modernist foundationalism, which Habermas and Vygotsky were associated with, and postmodernism, behind which Deleuze was considered a pioneer, the inclusion of the three philosophers was a deliberate choice. On the one hand, their theories share a common ground, i.e. a distinct focus on processes, and consequently can be held accountable for explaining the importance of IC flows. On the other hand, the explanatory powers of these theories can be fully realised when each of them was dedicated to address one aspect of my research question. For instance, Habermas's theory of communicative action dealt with the problem of measuring IC in a closed system, and it critically employed the vocabularies and frameworks that the advocates of the measuring paradigm understood and had adopted. In this regard, no other philosophers could do a better job than Habermas when it came to answering the question

of ‘what is wrong with the current definition of IC’. Similarly, Vygotsky’s theory of learning and development resolved the tension between a firm’s existing business processes and the introduction of new IC frameworks, and hence it explained most explicitly ‘what does IC do in practice’. Eventually, Deleuze’s theory of becoming tackled a firm’s boundary issue, and thus it creatively raised and shed light on the question of ‘what IC could be’. Instead of setting them apart, I consider that these theories form an upward spiral of discourses that address my research question on different levels. As Gergen (2001) has argued, we use language to negotiate daily life whether we take a realistic or constructivist stance, are modern or post-modern in orientation.

1.5 The aim of this research and the overall research strategy

The aim of this research is two-fold. First, it seeks to make a contribution to the literature of IC by incorporating theoretical frameworks grounded in a social psychological perspective on organisation, knowledge, and learning processes. In doing so, it will address the conceptual gaps as seen in the comprehension of IC dynamics and in the appreciation of the innate value of IC practice. Second, it aims to present triangulated empirical evidence that demonstrates the necessity, importance, and possibility of constructing a learning paradigm for the purpose of unleashing SMEs’ innovative potential. This will be achieved through adopting the “plane-line-point” research strategy in the context of the InCaS project that I involved in.

Most existent IC literature suffers from a managerial accounting perspective that posits IC under parsimonious relationships within a reporting framework. Viewed in this light, IC is understood as an objective reality that waits to be measured and managed. As a consequence of this understanding, the measuring paradigm becomes prevalent in the field

of IC that priorities the assessment and reporting of individual elements of IC and associates the value of IC practice with internal management control and external capital attraction. Although some researchers began to distance themselves from the advocates of the measuring paradigm, a systematic examination of the premises underpinned this paradigm is still very much needed. One way forward is to bring in a social psychological perspective on organisation, knowledge, and learning processes, which will help us enrich the meanings of IC research and practice. This perspective is fleshed out by the construction of a learning paradigm that differentiates itself from the measuring paradigm in a number of ways.

The “plane-line-point” strategy is invented to ensure the rigor of my data collection. I will present my readers three layers of data that point at the same direction: constructing a learning paradigm for the purpose of overcoming the limitations of the measuring paradigm. First, a plane of voices will put together the mixed voices of IC researchers and practitioners regarding ‘what works’ and ‘what doesn’t work’ in the context of implementing the InCaS methodology. In doing so, we can problematise the measuring paradigm in the field of IC. Second, a line of critical thoughts of IC researchers will bring to light the process components that may help overcome the limitations of the measuring paradigm. Third, a reflexive point of application in a SME will provide us the opportunity to verify if those components actually exist in practice and in which order they are bonded together. The overall research strategy of this research can be visualised in a mind map as Figure 2 shown below.

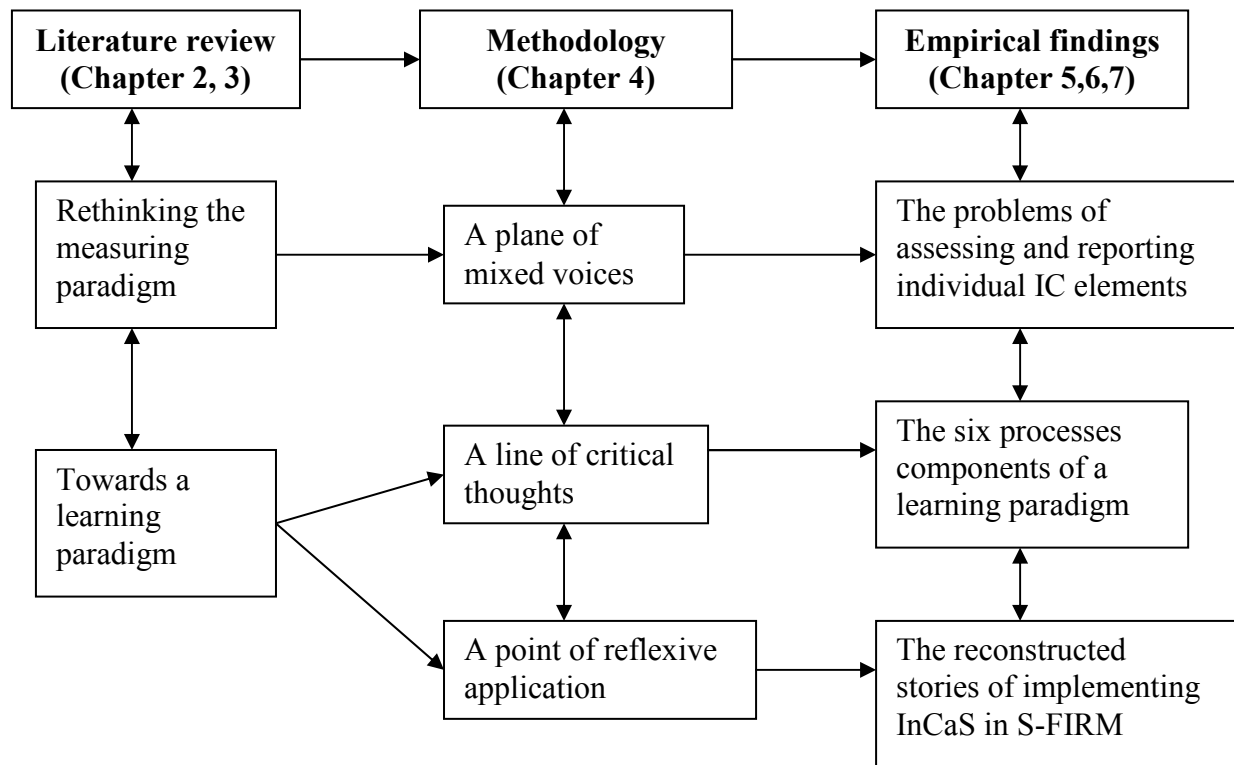


Figure 2: The mind map of this thesis

1.6 The structure of the thesis

In the present chapter, I situate the thesis within the literature of IC and organisational theories, providing an overview of the challenges that most European SMEs face today in the context of a knowledge-based economy. These challenges, on the other hand, also become the impetus for the European SMEs to engage with IC practice for the purpose of enhancing organisational performance, particularly from the perspective of activating a firm's innovation potential. Against this backdrop, I specify the meanings of organisational change and innovation for this thesis. Joining a EU funded IC project in my role as a research assistant enabled me to understand the challenges and opportunities in this field. In discussing the *status quo* of IC practice, I introduce briefly the ontological divisions in this field and explain my personal interest in the subject under study, including my conviction that the attempt to treat IC as an asset, a commodity, or an objective reality,

reduces the richness of this concept and limits the scope of IC practice. I conclude this introductory chapter by making explicit the two-fold aims of this research.

Chapter two seeks to provide a theoretical context for us to understand the ontological challenges of IC practice. These challenges can be attributed partially to the measuring paradigm, that is, a dominant theoretical and practical focus revolving around the activities of assessing and reporting individual IC elements. Aligning myself with other critical thinkers, I give a detailed explanation on how the measuring paradigm manifests itself in the historical development of IC research and practice and I debunk the taken-for-granted assumptions underpinning this paradigm by pointing out their severe limitations.

Nevertheless, the potentiality of measuring in the sense that it forms its own realm of activity is also discussed. Based on my review of the literature I conclude this chapter by outlining several research questions to challenge the dominance of the measuring paradigm in the field of IC, and I wish to fill some gaps identified in the literature by turning my attention to the construct of a learning paradigm.

Chapter three seeks to develop a theoretical framework that encourages a process-based account of IC practice for the purpose of unleashing a firm's innovative potential. Within this framework, I seek to rekindle the connections between IC actors, activities, and the social context of IC practice. These connections pave the way for the discussion of a flowing process, where a variety of learning initiatives come into play and contribute to the generation and development of a firm's IC continuously. Drawing on the philosophical works of Habermas, Vygotsky and Deleuze, I elaborate the possibility of constructing a learning paradigm on three different levels of analysis that transforms IC into a real engine for organisational change and innovation. To make this theoretical framework actionable, I

complete this chapter by discussing how a Habermasian, Vygotskian, and Deleuzian reading of a learning paradigm in the field of IC bring out the hidden benefits beyond the prescribed IC Statement.

Chapter four presents the research design and methodology. It aims to provide a transparent account of how the data for this thesis were collected and analysed. It briefly outlines the specific research context of the InCaS project, the challenges of doing this research, and the multiple methods intentionally selected. It also provides a step-by-step account of the analytical process from which two global themes emerged. In conclusion, I summarise the five criteria that I adopted to ensure the quality of this research.

The first findings chapter is Chapter five. In this chapter, the measuring paradigm as a prevalent discourse that dominated the Phase I InCaS is interrupted. On the one hand, the ambiguity and incomparability of IC made the exercise of assessing IC in segments “a mission impossible”. On the other hand, the immature market conditions as well as firm-bounded constraints discourage SMEs to disclose their IC information to the public in a transparent and reliable manner. Chapter five also explores the potentiality of measuring when a different ontological weight was assigned on the IC measurement results: the measuring exercise in a focal SME may generate interests, questions, and curiosity for a wide variety of learning initiatives and thus lead to a strong learning motive. Three pairs of potential benefits are identified when the emphasis of measuring IC is shifted from an “output” view to an “input” view. This chapter concludes that the measuring paradigm in the field of IC is mainly concerned with a firm’s financial value and individual success, and thus it runs the risk of framing IC into a malfunctioned statistical model. In contrast, when the exercise of measuring IC is seen as the starting point of a flowing process that

seeks to increase new knowledge, practice, and a sense of positive energy, IC practice can flesh out diversified pathways to value in support of the change and innovation in SMEs.

The second empirical chapter is Chapter six, which outlines the components of a learning paradigm. My interviewees' perceptions are summarised into six major themes, which fit in with the theoretical framework as discussed in Chapter three. The interview data shows that a learning paradigm is fundamentally concerned with enabling a flowing process that contributes to the generation and development of IC. I unpack the six major themes in detail and highlight the connections between them. In closing, I assemble the characteristics of a learning paradigm in a diagram (Figure 12), which shows the scope of learning across different organisational units.

The last empirical chapter, Chapter seven, provides an opportunity for my readers to 'live' a learning paradigm through the case of S-FIRM's stories. As one of the twenty-five pilot SMEs in the InCaS project, the transformation of S-FIRM's Engineering Business Unit in just 18 months is simply too significant to be ignored. It demonstrates perfectly that the implementation of the InCaS methodology can be construed as a collaborative learning experience. Towards the end, I try to explain the innate value of IC and IC practice by reflecting on S-FIRM's stories. A diagram is provided (Figure 14) to illustrate the dynamic relationship between a learning paradigm and three types of changes and/or innovations that S-FIRM has experienced.

The final and concluding chapter, Chapter eight, synthesises and discusses the empirical findings presented in this thesis, and explores how this research has advanced our understanding of the needs and conditions of developing a learning paradigm in the field of

IC for the purpose of supporting organisational change and innovation. Reflecting on these findings, this chapter compares the ontological assumptions, methodological considerations, foci of practice, and evaluation criteria for IC information disclosure. A diagram (Figure 15) illustrates the inter-penetration of the two paradigms. The corresponding implications at a policy/practice level and at a research/theory level are discussed, which further links up to the context of a follow-up project of InCaS, called “CADIC”. As a final word, I write an epilogue for people who might want to know about my research-in-life, which holds the same spirit of constructing a learning paradigm in the field of IC: to enable a flowing process and to go with it along a positive direction.

2. Rethinking the measuring paradigm

“Measurement adds value only if the limitations are taken into account. We must not delude ourselves and our audiences with unrealistic promises and we must not use measurements for tasks that are beyond the limitations”.

– Sveiby, 2004

Stemming from a variety of methodological and practical needs and various degrees of understanding, the current practices in the field of IC vary from country to country, and from case to case. Nevertheless, almost all of the IC models in use (Choo and Bontis, 2002; Marr *et al.*, 2004; RICARDIS, 2006) seem to prioritise one aspect of IC, namely, the measurement of IC and its sub-categories (human capital, relational capital, and structural capital). Herein, the measuring paradigm refers to the theoretical and practical attempt that posits IC under parsimonious relations through assessing and reporting individual IC elements (Liu and Wang, 2008). As I have stated before, measurement holds a strong position in the mainstream accounting and managerial literature. This thesis, however, shares a concern with scholars who pick up the issue of the uncritical calculation, numbering, and quantification of IC as well as the overemphasis on the standardisation of IC measurement results (Mouritsen, 2009b, p.802). The doctrine of ‘what gets measured gets managed’ is a powerful statement that holds a strong appeal for actors in the field of IC (Catasús *et al.*, 2007). The reasons for these relentless efforts in measuring IC can be understood from different angles, for instance, the continuous pursuit of objectivity in management; the need for re-organisation of complex aspects; the external pressure of technological developments; and the justification of major values in a given community etc. (*ibid*, p.505-06). As Mouritsen (2002, p.12) points out, the prevalence of this measuring

paradigm in the field of IC must have its own rationale. Nonetheless, IC researchers and practitioners have increasingly become aware of the strong limitations associated with the uncritical assessment and reporting of measurement results (Mouritsen, 2006, 2009a, 2009b; Dumay, 2009; Catasús *et al.*, 2006, 2007; Chaharbaghi and Cripps, 2006; Marr *et al.*, 2003, 2005).

The major concern about the measuring paradigm can be partially accounted for by a simple observation in the current management practices: “all that is managed is not necessarily measured...all that is measured is not necessarily managed” (Catasús *et al.*, 2006, p.507). Thus the measuring paradigm seems to exaggerate the possibility of the measurability of intangibles. It also disguises the dynamic feature of IC and limits its critical potential. As a consequence, the measuring paradigm distracts attention from what really matters in this field (Chaharbaghi and Cripps, 2006). Therefore, rethinking the measuring paradigm in terms of its basic assumptions, stretched capacities, neglecting elements, and its potentiality is both necessary and desirable. By ‘rethinking’, I actually mean, “to critically assess” the problems associated with this paradigm (Alvesson and Deetz, 2000; Dumay, 2009). I would second O’Donnell *et al.*’s (2006, p.6) claim that a critical view on IC practice will not only enrich our understanding of the value of IC, but also offer an opportunity to examine the governing variables behind existing IC theories. To this end, I would raise a bold yet inevitable question underlying this measuring paradigm: “for those aspects of IC being measured, are they still intangibles *per se*?” By the same token, I need to address the question: “could or should IC and its sub-categories in fact be measured?”

In order to search for an answer to the questions above, I need to go back to the basics by examining the origins of IC and IC reporting. Drawing on a wide range of experiences of IC researchers and practitioners, I argue that there is a number of taken-for-granted assumptions underpinning the measuring paradigm in the field of IC. Aligning myself with other critical thinkers in this field (Mouritsen, 2009a; Dumay, 2009; O'Donnell *et al.*, 2006), I would restate that a critical perspective should be developed so as to problematise the measuring paradigm. In the following sections, first of all, I will explain in detail how the measuring paradigm manifests itself in the historical development of IC reporting. Second, I will seek to unveil the taken-for-granted assumptions underlying this paradigm by placing IC in a wider context, where the concepts of knowledge and organisation are taken into considerations. Meanwhile, the stretched capacities, neglecting elements, and potentiality of this measuring paradigm will be discussed. Third, the implications of developing a critical perspective towards the measuring paradigm will be elaborated. Finally, I will provide further discussions on the question of “could or should IC and its categories be in fact measured?”

2.1 Understanding the measuring paradigm

The first attempt to measure IC can be traced back to the initiatives of the Organisation for Economic Cooperation and Development (OECD) in the middle 1990s. On the one hand, the OECD (1996) observed that intangible investments such as training, research and development, and education increase more rapidly than tangible investments; on the other hand, the lack of visibility of intangible assets seemed to make the reception of IC and its sub-categories difficult. Based on their observations, the OCED decided to encourage research projects that aimed at developing a set of indicators of intangibles within a firm and a reporting structure that would facilitate managers, stakeholders, and policy makers to

make better sense of IC. In 1999, one of the most workable definitions of IC was offered by the OECD (1999, 2006), which described IC as the economic value of a firm's organisational (structural) capital and human capital. In this definition, IC was still treated as a synonym of intangible assets, which potentially caused confusions: intangible assets give a static view on the stocks of intangibles without considering their future value beyond the current economic value (Tan *et al.*, 2008). Following the OECD's initiatives, IC researchers and practitioners in Europe and North America actively engaged in the work of conceptualising this concept via a number of models, metrics, or frameworks, and subsequently these conceptualisations led to numerous efforts in measuring IC and its sub-categories. As Sveiby (2002) summarises, different conceptualisations elicit different measurement methods, which can be grouped under two generic categories, namely, the financial measures of IC and the non-financial measures of IC (Reinhardt *et al.*, 2003).

Stemming from the management-accounting tradition, the "financial measures of IC" emphasises on the valuation of financial aspects of intangible assets that are derived deductively. "Tobin's ratio Q", "Value added intellectual coefficient (VAIC)", and "Economic value added (EVA)" are the most popular models measuring the financial aspects of intangibles (Reinhardt *et al.*, 2003; Tan *et al.*, 2008). In parallel with the development of financial measures of IC, during the 1990s, the most influential non-financial IC models included but were not limited to Kaplan's and Norton's "balanced scorecard" (1992), Edvinsson's "Skandia navigator model" (1997), and Roos's "IC-Index" (1997). These pioneer works attracted public attention and enhanced awareness of IC measures particularly at a governmental level. Since 2000, the scale of IC measures has been expanded from a firm level to a national even international level. In the following paragraphs, I will provide a short summary of each of these IC models in the hope of

demonstrating how the measuring paradigm manifests itself across frameworks and projects in different contexts.

2.1.1 The financial measures of IC

(a) Tobin's ratio Q

Tobin's ratio Q is suitable for comparing the market value of a firm with its replacement value of assets, which is commonly known as "market-to-book ratio". This ratio is used to represent the IC of a company, since it explains the value differences caused by a firm's knowledge intensity. Put it in another way, IC is used to account for the difference between the market and book value of a firm (Edvinsson and Malone, 1997). Empirical studies found firms with higher Q-values seem to possess IC at a higher level. According to the neoclassical theory, Tobin's Q has been applied to predict market value in relation to investments in technology and human capital (Reinhardt *et al.*, 2003, p.797). Nonetheless, the Q ratio fails to predict this kind of investment accurately. For instance, Q collapsed during the bearish stock market of the 1970s, yet, investment in technology rose (Henwood, 1997). Hence, Tobin's ratio Q is a poor measure of IC at the very least.

(b) Value Added Intellectual Coefficient (VAIC)

The VAIC model calculates the ratio between value-added and total expenses for personnel. VA is the difference between sales outputs and inputs. As the formula $OUT - IN = VA$ shows, OUT represents the sales income including everything sold on the market, whilst IN contains all the expenses covering everything needed to maintain the operation of the firm, except for human capital costs (Tan *et al.*, 2008). One study involving 108 Austrian companies over a five-year period showed that the productivity of human capital is higher than the productivity of financial capital (Dierkes *et al.*, 2003). This ratio confirms the

importance of soft factors, and yet it is only focused on one aspect of IC, that is, human capital, and thus it cannot be used to measure IC as a whole.

(c) Economic Value Added (EVA)

EVA was introduced as a contrast measurement to the market value added (MVA). The latter represents the gap between a firm's cash that investors put into since its set-up and the present amount of the cash that investors may gain by selling their shares (Tan *et al.*, 2008, p.597). EVA focuses on maximising incremental earnings over capital costs from measuring capital budgeting to shareholder communication, and thus it seems to offer improvements to the MVA calculation by adding more dimensions to measure (*ibid*).

However, EVA is only a surrogate measure of IC, that is to say, the specific quantification of intangible assets can never be worked out. More importantly, EVA is established on two assumptions: first of all, it assumes that all companies should be operated exclusively for the benefit of its shareholders. In other words, for those unlisted companies or those who wish to look after other stakeholders' interests, EVA is neither useful nor desirable. Second, the calculation of EVA is still largely dependent on the historical cost principle that is stipulated in accounting. In this regard, the hold onto book value reflects very little information on the asset's current market price.

2.1.2 The non-financial measures of IC

(a) Balanced Scorecard (BSC)

Kaplan's and Norton's (1992) BSC model is used to measure organisational performance across four linked aspects, namely, financial, customer, internal business processes, and learning and growth. The BSC model seeks to find out the cause and effect relationships between each measures and performance drivers and thus allows management to make a

strategic decision based on their prioritisation of the four aspects. The strengths of this model is that it goes beyond traditional accounting measures and shifts the focus from purely financial measures to intangible success factors (Tan *et al.*, 2008, p.592). In addition, the flexibility of this model is acknowledged - it can be applied to both individuals and organisations. Since the model's measurement system is very case-specific, every measure and performance driver must be explained according to a given context and thus comparison across companies or industries is almost meaningless.

(b) Skandia Navigator Model

The Skandia navigator model measures the stock of IC by screening out 160 indicators that are pertinent to the establishment of a portfolio of highly aggregated knowledge assets (Reinhardt *et al.*, 2003, p.800). The five key areas identified within this approach are financial, human, customer, process and renewal, and development aspects of a firm. Within each of these areas, respective indicators are developed, such as return on net asset value (%); market share (%); number of zero-error contracts; motivation index (%); training hours. Without a doubt, the efforts of building Skandia navigator have inspired a great number of researchers to look for intangible factors that can actually create value for organisation (Bontis, 2002). Nevertheless, the model remains a statement of the static elements of IC and, at most, its changes from one period to another. Moreover, within this model, the empirical measurement of the relationships between the different categories of IC and their changes seem to be vague and arbitrary, since the overemphasis on highly aggregated measures provides little insight into the relationship between cause and effect of each measurement (Reinhardt *et al.*, 2003, p.798). In addition to these issues, Marr *et al.* (2004, p.552) notice that “all the measures are eventually expressed in monetary terms, and it is questionable that one can express knowledge assets in monetary terms”.

(c) IC-Index

Roos *et al.* (1997) have examined the assumptions underlying the Skandia navigator and they finally built up an IC-Index based on the development of the metrics that Skandia offered (Tan *et al.*, 2008, p.593). The IC-Index is an endeavour that seeks to consolidate all the different individual indicators into one single index and relate the changes in IC to the changes in the market (Roos *et al.*, 1997). Roos *et al.* further proposed that IC measures should be linked to a firm's strategy and the key characteristics of the business. This proposal was endorsed by many researchers and implemented by many IC practitioners. Today, most IC reporting systems maintain this tradition by paying attention to the linkage between IC and a firm's strategy. Like Balance Scorecard (Kaplan and Norton, 1992), however, IC-Index is also case-specific and this means that the comparisons and standardisation of IC-Index between companies are not possible. The difficulty in making judgement on the weight of each IC factor is obvious. As Marr *et al.* (2004) comment, IC-Index can be useful on the condition that people agree on the form of IC they measured.

2.1.3 Rethinking IC measurement

The financial measures of IC offer us an insight into the possibility of linking intangible resources to wealth creation. And yet, all the available measures in the market only give prominence to the limited dimensions of IC. In other words, the richness of IC can hardly be reflected through surrogate measures, which are severely constrained by the assumptions that they were built upon in the first place. As Kannan and Aulbur (2004, p.391) point out, "early measurements of IC focus on the accounting and financial perspective...which only recognises the existence of an item when transactions with third parties take place, and this does not hold good for IC measurement". The non-financial measures of IC take more dimensions of IC into consideration: they are no longer tied to

the financial representations of IC. Some of the non-financial measures even allow IC to be linked with much more complex organisational issues, such as a firm's strategy. However, these measures focus on the static elements of IC and, at most, the changes of elements from one period to another. Within the measuring paradigm, IC and its sub-categories are still confined to a set of parsimonious correlations, which tend to change over time and are always open to reinterpretation (Sveiby, 2004). As such, these approaches "result in a snapshot view and does not represent the dynamic knowledge flow in an organisation" (Kannan and Aulbur, p.404).

2.2 A critical review: confronting the limitations of the measuring paradigm

It is true that the financial and non-financial measures of IC may find their justifications for a particular reason. None of them, however, captures fully the dynamic intangible flows in an organisational context in which IC is embedded. This point reminds us to be sensitive to the limitations of the measuring paradigm in the field of IC. Although an extensive body of literature has touched upon briefly the limitations of the measuring paradigm while mentioning other aspects of IC research and practice (O'Donnell *et al.*, 2006), very little of it is concerned with the reason why the measuring paradigm has held a dominant position in the past two decades. To understand this point, I will adopt a critical approach to questioning the hidden assumptions within the measuring paradigm. In doing so, I wish to bring to light the severe limitations of this paradigm.

2.2.1 Putting IC in a wider context: is IC only a knowledge asset?

At the origin of IC, an interesting phenomenon came to my notice: actors who engaged actively in the debate about IC were mainly managers. That is to say, unlike scholars in other fields of study, a number of researchers who laid the foundation for IC theories came

from a managerial rather than academic background (Reinhardt *et al.*, 2003, p.794). This contrast seems to explain why most IC models reflect the agenda of improving the management of essential resources in an organisational setting (Drucker, 1993). In fact, the concept of IC has been criticised for lacking a solid theoretical foundation, and that is why a widely accepted definition of IC is still absent (Fincham *et al.*, 2004; Abeysekera, 2007). The absence of definition creates further problems when IC is related to other concepts, such as knowledge or organisation. For instance, Roos *et al.* (1997, p.27) sees IC as “the sum of the knowledge of its members and the practical translation of this knowledge”. Further to this point, some researchers argue that IC as knowledge asset could bring competitive advantage to a firm (Petty and Guthrie, 2000, p.157). This argument is grounded on the asset-based view of organisations.

The asset-based view of organisation is appreciated most in the context of post-industrial society (Castells, 1996), in which wealth creation is increasingly dependent on knowledge-based assets and the ability to generate and utilise them (O'Donnell, 2006). IC was distinguished from physical assets (such as land, labour, or financial capital) as a new driving force of organisational performance (Choo and Bontis, 2002; Marr *et al.*, 2004). A number of empirical studies that appeared in the mainstream accounting and finance literature confirmed that the unique combination of different elements of IC as well as other tangible elements could enhance a firm's competitiveness (Itami, 1987; Teece, 2000; Nahapiet and Ghoshal, 1998; Delio and Beamish, 1999; McGaughey, 2002). Admittedly, these studies popularised the idea of IC and attracted attention from a wide range of disciplines. And yet, they also invented a problematic equation at the same time.

The historical representation that “IC is a knowledge asset” implies IC can be treated as an object, be it a kind of resource (Davenport and Pruska, 1998), commodity (Bontis, 2003), or capital (Steward, 1997). The danger and shortcoming of this representation is that it promotes an input-output mode of thinking (Morgan, 1997), by which power holders in organisations create representations of truth through processing information available to them in an arbitrary manner. Not surprisingly, this representation “gives to the verbs for control”, such as “to measure”, “to store”, “to benefit from” (Andriessen *et al.*, 2007, p.643). Hence, IC is burdened with the unspoken expectation that there must be a good return on investment via capitalising on knowledge. As a caveat, I have to agree with Andriessen’s (2007, p.643) judgement that the persistent problem with IC definition seems to start from its inborn conceptual component of “capital”. Capital is a stock, which implies that something out there is in need of measuring. Whenever the “surname” of IC (capital) overpowers its “first name” (intellectual), IC becomes another instance of the instrumental use of knowledge (*ibid*, p. 644). The phenomenon of economising knowledge through markets and politics is not uncommon in today’s business world (Habermas, 1984). As Swan *et al.* (2001) summarises, treating knowledge as an object triggers the desire of possession, manipulation, and control in organisations.

In fact, the knowledge that organisations may draw on is always discursive, meaning it is subjected to a certain order of power and politics (Foucault, 1972: cited in Clegg *et al.*, 2005, p. 155). This explains why the typical image of an organisation is an input-output system, a process of ordering, and an effort of forging order out of chaos (*ibid*). From a sideline, this image reflects the mainstream organisation theories that are shackled by two deep-seated myths (Linstead and Thanem, 2007), namely, an organisation as an abstract and ordered system; or an organisation as a de-contextualised ideal (Tsoukas, 2003). The

two myths prevent organisations from being associated with changes (Tsoukas and Chia, 2002), since changes only create chaos, whereas an organisation is supposed to render order and stability. When IC is treated as a knowledge asset in an organisation, where order and stability are prioritised, the measurement of IC can be justified easily as part of the “institutionalisation” – a process that satisfies the unspoken desires of management manipulation, possession, or control (Fincham and Roslender, 2004).

To sum up, I would like to reiterate the importance of uncovering the problematic assumptions underpinning the measuring paradigm in the field of IC. Since its inception, IC reporting has been concerned with an insurmountable difficulty due to the fact that the concept of IC lacks a solid theoretical foundation and a widely accepted definition is missing. This difficulty creates further problem when IC is related to other concepts, such as knowledge or organisation, particularly from an epistemological viewpoint. The historical representation that posits IC as a knowledge asset burdens this concept with an unnecessary expectation: that a good return of investment via capitalising on knowledge is essential. In the same vein, the assumptions that IC as an objective reality, organisation as an ordered system or de-contextualised ideal, propel the phenomenon of economising knowledge and consequently justifies the measurement of IC for the purpose of extending the sphere of managerial command and control. To echo Andriessen (2006, p.93), I would argue that IC has no referent in the real world and the value of this concept lies in its ability to change social realities. When it comes to the dominant representation of IC, i.e. IC as a knowledge asset, we should become aware of its limitations, and if new representation is needed, it has to allow us to make improvement on the old.

2.2.2 The measuring paradigm: stretched capacity

I use the term “stretched capacity” to refer to the circumstances in which the measuring paradigm fails to perform what it is claimed to accomplish. Thus, the stretched capacity helps us understand the incapability or inability of this paradigm. There are three types of stretched capacity in the field of IC that are too prominent to be ignored. First of all, there has been an “unexplained” gap in the legislation/regulation for IC reporting. Second, the linear thinking that unfolds itself as a “definition-category-indicator” pattern is highly problematic. Third, measurements incur obsession with quantification and overemphasis on the fixed form of output, which are worthy of our attention. Needless to say, the three types of stretched capacity mix together and limit the potential of IC reporting. As a consequence, they constitute the challenges for the IC practice that lie ahead.

(a) The “unexplained” gap

The legislation/regulation for IC reporting experiences two major phases of development, which have been witnessed by the variances of accounting treatment on intangible assets (RICARDIS, 2006, p.57). (I) From mid 1970s to late 1990s, a firm’s intangible assets were required to be included in the balance sheet, but in a separate session. The basic measurement rule of intangible assets shows no difference to the “true and fair” formula that has been applied widely to tangible or financial assets. In other words, intangible assets could not even be distinguished from goodwill, and the latter is not always treated as an asset or a capital. (II) From 2000 onwards, more initiatives were taken to modernise the process of reporting intangibles, for instance, according to the fourth and seventh EU Directives, intangible assets were allowed to be valued beyond their historical costs, and the disclosure of a firm’s financial and non-financial information with regard to its strategic performance were encouraged equally (*ibid*, p.58). A further decisive step towards the

internalisation of accounting rules was the EC regulation no. 1606/2002 under the governance of the European Parliament and the European Union council. This rule corresponded to the approach to reporting intangibles that was endorsed by the International Financial Reporting Standards (IFRS). The IFRS framework separated intangibles from goodwill, which encouraged the change of ways that firms allocated their costs (European Commission, 2003).

Along the adoption of IFRS in many countries, the importance of assessing and reporting IC has been recognised by an increasing number of firms. Despite its endorsement of certain EC regulations, however, IFRS takes a prudent approach that gives recognition to assets revaluation (Dixon, 2003; Abeysekera, 2007, p331). The prudent approach adopted by International Accounting Standards Boards (IASB) that sets IFRS is in favour of an adjustment of the reported value rather than the fair value of the firm. In this regard, the prudent approach enlarges the “unexplained” gap between the fair price and the reported value of a firm. The consequence of this approach is alarming. Since investors are not fully aware of the gap between the fair value and the reported value of the firm, this information gap creates a divide between those who have access to information relating to the “unexplained gap” and those who do not (Marr *et al.*, 2003). As such, the issue of unfairness becomes the focus of attention: for those who can access information that explains the “unexplained” gap, they are more likely to make a better economic decision; for those who cannot access the same information, they might become the ‘victim’ group of the market rule. A further implication of this divide can be derived from “the stated recognition of the importance of IC reporting and the actual steps taken to place IC reporting on the agenda of public listed firms and public policy in reality” (*ibid*, p.332).

In the same period of the second phase development of IC reporting, a series of Europe-wide regulations on a voluntary basis were developed and put into effect. For instance, the Danish legislation (2001), the German Accounting Standard GAS 12 (2002), and the Austrian Universities' IC reporting (UG 2002) all encouraged information disclosure of intangible assets through a firm's management report, *ad hoc* the information would be favoured if IC elements were measured "in a quantitative way" (Marr *et al.*, 2003).

Regrettably, neither the content nor the function of such information was made more explicit due to the lack of legislation and regulation backup (RICARDIS, 2006, p.60).

Abeysekera (2007, p.340) made a comment that summarised the difficulties:

"The problem with IFRS is that, in many ways, it represents a step backwards in the measurement and reporting of IC. While there has been a shift in focus in the global and national economies from tangible to intangible assets, the IFRS has in fact reduced the amount of intangibles recognised in the financial statement. The IASB has provided a more convenient and therefore less adequate definition of intangibles that is limited to the reporting of reliable information, to the exclusion of relevant information that is often more difficult to measure and report. This has forced firms to resort to alternative measures to report their IC items that are not normally recognised in a firm's financial statements, in order to provide relevant decision-making information to users".

The existence of the "unexplained" gap reminds us that things fall within the IC domain seem to be "the least identifiable and probably the most difficult to measure" (O'Donnell *et al.*, 2003a, p. 84). The lack of the legislation and regulation backup for IC reporting can be seen as a barrier to promoting standardised and comparable IC Statements, on the other

hand, however, this deficiency seems to justify some researchers' recommendation that IC reporting should become more independent and creative. As Mouritsen (2006, p.828) put it, "just like a financial accounting system, the IC reporting should have its own rule. It does not need to be like the external world, it only has to exist within internal principles of recognition and reporting".

(b) The "Definitions-Categories-Indicators" of IC

People who enter the field of the IC reporting for the first time might be shocked at the fact that a precise definition of IC has never been widely accepted (Petty and Guthrie, 2000, p. 158). Despite the proliferation of conferences, books, journal articles, working papers on the topic of IC, researchers and practitioners are still nowhere near to reaching an agreement on what IC is. As a matter of fact, apart from the first workable definition offered by the OECD in 1999, a commonly accepted definition of IC is still absent (Andriessen, 2004; Mouritsen, 2004; O'Donnell, 2004; Tan *et al.*, 2008). However, there seems to be a general consensus on what constitutes IC: for most researchers and practitioners in this field, a classification of IC is a sufficient substitute for an accurate definition. Steward (1997), for instance, defines IC as a composition of human capital, structural capital, and customer capital. Sveiby (1997) makes distinctions between external structure, internal structure, and human capital. As Tan *et al.* (2008, p.586) summarises, the difference between these classification systems reflects different levels of aggregation of the elements of IC. Unfortunately, the targets, goals, and outcomes hidden within each classification system have never been specified explicitly (Jørgensen, 2006, p.79).

Looking back, there were two major reasons that caused the difficulty of finding a well-grounded definition for IC. First of all, as some researchers have noted, the concept of IC,

like many others, comes to mean more than the sum of its parts and this seems to imply the current classification systems hold a reductionism perspective (Marr *et al.*, 2005, p.1115). Second, IC has many synonyms, such as intangible assets, intellectual property, and knowledge resources. Even if the literal meaning of these terms can be distinguished, the boundary of each term in practice becomes blurred and the strength of the association between IC and each of these terms is also context-dependant (Mouritsen, 2006, p.830). This might explain why researchers and practitioners in this field tend to use these terms interchangeably in different contexts.

As a logical reasoning, the lack of well-grounded definition should elicit the search for a clearer and unambiguous understanding of IC (Jørgensen, 2006, p.81). Take Andriessen (2004) for example, he proposed the three-step-consolidation of IC, which include (i) clarification of existing concepts, motives, and methods; (ii) assessment of the impacts of proposed methods; and (iii) standardisation and continuous development of further promising methods. Ambitious as this consolidation may sound, Andriessen still defined IC within a hegemonic logic loop that he set up. Viewed in this light, Jørgensen's reminder that "the real problem is not lack of clarification and generally accepted agreement but how we frame the problem in the first instance" seems to be more pertinent (*ibid*).

Although categories make the concept of IC concrete, they are not flawless. First of all, as Andriessen (2001, p.205) notices, categories sometimes "hamper us in seeing the wood from the trees". If the concept of IC is likened to "the wood", then categories are the trees. Whenever we attempt to use the latter substitutes the former, each intangible element will be completely isolated, and yet, the strength of intangibles is cumulative (*ibid*, p.209). That is to say, making each intangible element separable is achieved at the expense of losing the

insight of a collective performance of the intangible aspects of organisation (Mouritsen, 2009a, p.157). The expense of such isolation is enormous, since the correlation and synergy between categories are lost. As a matter of fact, it is precisely the synergy between intangible elements – not the individual assets – that create uniqueness and wealth (Andriessen, 2001, p.207). In this regard, the more separated categories we create, the less explanatory power they may have (Mouritsen, 2009a, p.157). Let us think of an example: as a world renowned company, Cisco is famous for its research and development (R&D) and marketing activities, but if we separate the firm's R&D team (who stands for human capital) from its marketing strategies and infrastructure (which constitutes part of the firm's structural capital), what will happen? From reputation to sales volume, the firm must be affected a lot. Ultimately, human capital cannot function in a vacuum. Structural capital and human capital reinforce each other through their co-existence and interactions.

Second, the boundary between each category is too loose and thus it tells very little about each category's underlying logics (Mouritsen, 2009a, p.155). For instance, IC researchers agree generally that human capital should incorporate an "innovation" component (*ibid*), and yet nobody is certain how far we should go in that direction. In the meantime, some researchers argue that structural capital (Aramburu and Sáenz, 2011) should also incorporate such a component. As such, the boundary between the two sub-categories is unclear. One of key motivations of categorising is to spot the differences and thus make distinctions between each category. The condition of categorisation, however, is that we ascertain the properties or attributes of an object. Following this logic, it can be inferred that the attempt to identify the essential properties of an intangible element is entirely impossible, since everything associated with IC conceptualisation is merely a human construction (O'Donnell *et al.*, 2000; Jørgensen, 2006). In other words, the distance

between the measurement and the world can never be tested fully in that “categories are primarily administrative procedures that separate out streams of interconnected processes” (Mouritsen, 2009a, p.155). Unfortunately, in the field of IC, most theorists assume that each intangible element has a solid boundary and they tend to accept this boundary as pre-given. For them, the only thing that is unknown and needs to be worked out is the magnitude of the effect of each category with regard to value creation (Mouritsen, 2006, p.821). Obviously, this approach simplifies the problem, and it misses the mark of understanding the richness and dynamics of IC and its sub-categories.

An indicator is an object of measurement, which is also a practical way to represent a particular intangible value of IC. In this field, IC researchers and practitioners tend to use indicators to point out a firm’s uniqueness and competitive advantages (Thorleifsdottir and Claessen, 2006). However, we can find numerous indicators under the same category. For instance, the indicators of human capital include but are not limited to number of employees, staff turnover rate, degree of employee satisfaction etc. Clearly, the distinctive feature of indicators is that numbers, ratios, percentages are used commonly to condense the information in accordance with measurement results. Despite their wide applications, the effect or impact of indicators is highly controversial. First of all, there is an enormous array of possible indicators that can be found, and yet most of them can be classified into more than one category. As I have explained before, categories are usually considered to be inherent. Thus, as a pre-given entity, one category can be designated to a particular aspect of IC. However, it is often difficult to set boundaries between categories in practice, so it is with indicators. Second, in contrast to the problem of lacking boundary, there is little or no connection at all between various indicators. As a result, a number of IC reports, i.e. the IC Statement, leave the reader with a strong feeling of “so-what” (Andriessen, 2001, p.208).

Indeed, unconnected or detached from one another, indicators tend to lose their meaning, significance, and worth (Rastogi, 2003, p.229).

Moreover, all the indicators used in the field of IC lack a yardstick to judge measurement results (Andriessen, 2001, p.205). This is mainly because indicators are context-specific. While some indicators may be of vital importance to some organisations, it is also possible that they are completely redundant in other organisations. As Thorleifsdottir and Claessen (2006) note, indicators depend on the economic environment, field of practice, and organisational structure; additionally, indicators are always negotiable amongst their perceivers. A better improvement is to put indicators into an index (Roos *et al.*, 1997) via calculating weightings, and yet indexing does not solve the problem of lacking yardstick, and the relative weighting assigned to individual indicators is still a subjective decision (Andriessen, 2001, p.212).

Last but not the least, indicators may leave out many crucial measurements, because most indicators are about the structure of the measured and not in any discernible way expressions of the measured *per se* (Mouritsen, 2009a, p.155). For instance, two firms have the same number of employees, and yet one of them hires half part time and half full time, while the other hires a hundred percent of short-term contract employees. Herein, even common sense knowledge will assure us that there must be some differences behind the same indicator. On this account, I have to agree with Chaharbarghi and Cripps (2006, p.29) that IC cannot be reduced to calculable numbers, ratios, or percentages, otherwise, the richness and dynamics of this concept will go missing. In addition, we should be cautious to the possibility that “in an indicator setting, the implicit idea has been that the number would lead to management control” (Catasús and Grojer, 2006, p.189).

(c) “Quantification and outputs”

In most people’s eyes, the final output of IC reporting, i.e. the IC Statement is similar to a firm’s financial statement in many ways. Thanks to the numerous efforts to identify indicators, the IC Statement is usually packed with quantified results. Most IC Statements can be made available in two versions, one for internal consumption, and the other for external consumption (RICARDIS, 2006). The obsession with quantification in the field IC is not uncommon, and the preference of quantified results can be accounted by the following reasons.

First, some practitioners try to fit the IC Statement into an accounting system (Andriessen, 2001, p.210). In doing so, they believe that the IC Statement may become more competitive when it is presented to external consumers, such as investors. Take, for example, Caddy’s (2000) discussion on the intellectual assets and liabilities. The problem with this attempt is that, as we all know, an accounting system is designed for tangible assets, but IC does not fit the mould: its unique characteristics do not fit in a transaction-based system (Webber, 2000). For instance, Andriessen (2001, p. 211) cites Coco-Cola as an example to explain five characteristics of intangible assets, which turn the accounting rules upside down. This example explains effectively why the halo of quantification favoured in the double-entry bookkeeping system does not apply to the IC Statement. It is sad to admit, despite the effort to improve the efficiency of the IC Statement, the resulting data in the quantified form is meaningless (*ibid*).

Second, as O’Donnell *et al.* (2000, p.191) notice, “at a general level, most contribution in the field of IC assumes that managers and organisations create representations of their environment through processing information available to them in the external

environment”. This linear process seems to grant the IC reporting with ‘objective nature’, especially when the IC Statement is packed with quantified data. Quantification in this sense belies the problem of lacking yardsticks, which is the obvious weakness of IC sub-categories and IC indicators. Even if an accounting system is predicted on institutionalised principles of recognition of transaction, i.e. it is not a description of value but a construction of value by rules and principles (Mouritsen, 2006, p.828), by no means should the IC reporting be considered as an accurate representation of reality (Roos *et al.*, 2005, p.235). In fact, “measurement system is mirage – it will never work according to the hopes of isomorphic representation” (Mouritsen *et al.*, 2006, p.830). That is to say, isomorphic representation is no more than a misunderstanding that creates unreal correspondence between quantity and the external world (*ibid*, p831). Quantification may cover the weakness of IC measurement results for a short while, and yet when management and stakeholders are determined to work out the puzzle – to understand the real meanings behind these quantified engineering – they will realise that these quantified measurement results are rather fragile and that the categories could not even signify the practices that they represent (Andriessen, 2006, Jørgensen, 2006).

Third, there has been an unrealistic ambition in the field of IC that demands the IC Statement to be prepared in the same way so that it can be standardised for comparison purposes. The overemphasis on producing a single-format IC Statement across firms, industries, even nations, reflects such ambition. Nevertheless, from definition to indicators, the entire IC conceptualisation is subject to human construction (O’Donnell, 2004), and this feature determines the context-specific and actor-related nature of the every aspect of the IC Statement. As early as 1997, *Ernst and Young* had suggested, “the relevance of measures of IC differs from one industry to the next and that such measures should

therefore be derived from the perspective taken in the specific corporate strategy that is involved” (Reinhardt *et al.*, 2003, p.808). The attempt to work out standardised and comparable IC statements is doomed to fail, since there is no “fundamental relations and paths between elements of IC and their links to performance of the firms or the capital market” (Mouritsen, 2006, p.823). On the other hand, the overemphasis on outputs also reveals a hidden attempt to use IC reporting for enhancing a firm’s public image (Dumay, 2009, p.493). This is especially true when the IC Statement is packed with window-dressed quantified data for external reporting purposes. Unfortunately, neither capital market nor stakeholder is impressed by such reports, since the highly codified and obscure measurement results only make the firm’s intangible aspects even harder to visualise (Andriessen, 2001; RICARDIS, 2006; Cuganesan and Dumay, 2009, p.1183).

2.2.3 Elements of IC neglected within the measuring paradigm

There are many neglected elements in the field of IC, which are submerged under the measuring paradigm. The most obvious three are actor-related aspects, in-depth interpretations, and a process-based view. As Marr *et al.* (2004, p.563) comment, apart from IC definitions, categories, and indicators, the interactions between “actors, or actors and infrastructures” in the process of conceptualising IC should also be given attention (Marr *et al.*, 2004, p.563). The actor-related factors, such as human beings’ imagination and intuition, have always been underestimated in the field of IC, since the measurement paradigm seeks to present “objective phenomena” and “transforms data into biased organisational conversation about what is valuable” (Chaharbarghi and Cripps, 2006, p.30). Fortunately, IC researchers and practitioners come to realise gradually that imposing the logic of isomorphic measurement of IC actually “eliminates emotions and feelings from it” (*ibid*). If IC is indeed a human construct, it cannot be understood independently of people,

context, and interconnections between different IC factors (O'Donnell, 2004, p.296; Jørgensen, 2006, p.79). More importantly, the emphasis on people and context shall give prominence to the link between IC practice and the real action taken by organisations. This point is crucial, since it will help us understand how IC practice may assist organisational actors in transforming their own reality (Jørgensen, 2006, p.79).

In relation to the actor-related aspects, the measuring paradigm also conceals the need to give in-depth interpretations to the quantified measurement results. Numbers, ratios, or percentages do not bear any innate meanings. Unless actors put these quantified results into a specific context and mobilise the resources around them, they could only be of limited use in practice. In-depth interpretation is indeed a linguistic effort, which relies on talking, speech, and communication to mobilise sensory affects, emotions, feelings, and actions (O'Donnell *et al.*, 2000, p.188; Andriessen and Van de Boom 2007, p.645; Edvinsson and Kivikas, 2007, p.382). In addition to this, a process-based view is also urgently in need of acknowledgment in the field of IC. Amongst all the IC models in use, the only one that pays close attention to the process of thinking and utilising IC is the German Guideline (RICARDIS, 2006; Edvinsson and Kivikas, 2007, p.382), albeit the details of why and how organisations can learn from such a process are very little explored. Recalling the limitations of the measuring paradigm once again, it is not difficult to conclude that a firm's knowledge assets alone cannot create value, but the processes that generate, distribute, and apply them may (O'Donnell *et al.*, 2000, p.196). A process-view is also crucial in the sense of recognising and valuing the interconnections between different IC elements. As I have demonstrated earlier, the measuring paradigm is based on the categorisation of IC, and yet the interactions between each intangible element are always ignored when categorisation stands alone. Thus, the measurement results of IC elements

are no more than a snapshot of a firm's intangible assets. A process view, in this regard, may help identify the ignored interactions in between, which is essential in order to go beyond the static and isolated view on IC.

2.3 Further discussion

The “unexplained” gap, stretched capacity, and neglected elements give us a clear picture of the limitations associated with the measuring paradigm on various levels of analysis. As many researchers have argued, the problem of measurement originated from the classification of IC (Mouritsen, 2009a, p.154). This problem is inevitable since it is entirely impossible to reduce IC to limited categories and quantified indicators. Any attempt along these lines simply creates an illusion that we can manipulate the relationship between the measurement systems and the real world (Mouritsen, 2006, p.829). For this reason, I agree with Marr *et al.*'s (2005, p.1114) judgement that this field does not need any more classifications. Actually, whenever the measuring paradigm triggers a desire to represent the world through isomorphic measures, we should be very cautious to that ambition. By virtual of questioning the rationale of that desire, we can uncover more problems concealed by the measuring paradigm: in the field of IC, most models-in-use suffer from the fact that people jump to conclusions, and they lack a proper problem definition and argumentation justifying the need for particular IC measures (Andriessen, 2006, p.85). It is also noteworthy that the obsession with quantification of IC elements might have something to do with the “command and control” logic of managerial thinking (Chaharbarghi and Cripps, 2006, p.32). A typical rational perspective of management would only reveal the linear and deductive process of conceptualising IC without mentioning the possibility that measurement schemes can be “jumbles of subjective evaluations and opinions presented as objective phenomena that can serve to mask what really matters” (Mouritsen, 2004, p.30).

2.3.1 The potentiality of ‘measuring’

In the previous section, I explained the problematic assumptions concerning knowledge and organisation underlying the IC reporting as a result of the prevalence of the measuring paradigm. I also specified the stretched capacity of measurements as well as the elements in the field of IC that were neglected by the measuring paradigm. Having pointed out a variety of limitations associated with this paradigm, however, I would turn my attention to looking for some positive attributes – and if these are not instantly available – that imply the potential of measuring. The reason for such a turn is neither to justify the aforementioned limitations nor to reduce the power of a critical perspective that I dedicated myself to develop. Rather, I wish to find new meanings for measuring in the field of IC by asking the “what if” question. As Mouritsen (2006, p.832) notes, the measuring paradigm cannot hold all things together as it claims, but measuring *per se* can be “its own realm of activity”. That is to say, instead of viewing measurements and quantification as isomorphic representations of reality, (what if) we consider them as exercises that help people get a sense of what’s been measured and then move forward from that learning experience. With this context in mind, first, I would suggest two aspects worthy of consideration, which constitute the potential of measuring; second, I will offer a caveat that the realisation of the potentiality is not condition-free.

As many researchers have noted, it is still important to know the *status quo* of a firm’s IC, even if the measurement results only provide a snap-shot view (Mouritsen, 2006, 2009b; Guthrie *et al.*, 2003; Marr *et al.*, 2003). Looking back, the emergence of the IC reporting is primarily because of the following two reasons. On one hand, the relationship between knowledge, knowledge-based assets, value creation, and productivity becomes closer in a post-industrial society. On the other hand, the traditional accounting methods fail to reflect

the use and effect of intangibles (Chaharbaghi and Cripps, 2006, p.30). The measuring paradigm embedded in the current practice of IC reporting, despite its obvious limitations, somehow reflects the efforts that researchers and practitioners have made in this field with regard to understanding IC at a more sophisticated level. Through the exercise of measuring, IC might become more visible in the eye of its beholders, and the links between IC and other related elements, such as strategy, business model, might be loosely established. Even though measurement results are not accurate and certain, for things being measured they would no longer be the same, i.e. IC must be something different from what it was (Mouritsen, 2009a, p.160). Take, for example, a study done by *Ernst and Young* in 1997. After reviewing 300 reports and analysing 275 interviews with institutional investors, Ernst and Young gained an essential finding that 35 per cent of investment decision is based on non-financial information, and investors or decision-makers in organisations indeed rely heavily on non-financial indicators when they need to make an investment call (Reinhardt *et al.*, 2003, p.808). Measurement results, in this sense, help us deepen our perceptions on IC, its sub-categories, and other related organisational phenomena or events.

Second, when various calculations of the measuring paradigm contradict each other, they may trigger suspicions, questions, interests, or curiosities, and thus the firm's management is under pressure to put forward a reaction or intervention plan. As Mouritsen (2009a, p.160) notes, just because IC measures contain uncertainty and inaccuracy, "completely new phenomena might emerge at the end of the measurement and calculation, which are far removed from the entities that are measured". In other words, IC measurements may generate visibility, insight, and knowledge and subsequently problematise certain aspects of the firm's organising processes (Mouritsen, 2009b, p.739). In response to these unexpected emerging results, the firm's management is bound to take some action, since

they are part of the measuring process. For instance, by answering to the questions about the assessment of and values attached to measure-based human resource activities, most top management comes to realise that human capital is not at all a cost factor, and thus they feel obliged to react to this point by taking real action to improve the firm's operational systems (Ulrich, 1997). These actions might not be a final answer, but they are certainly preferable to a state of ignorance.

Although these positive attributes might be associated with measuring, they will not come out automatically since the mainstream focus of IC measurement has always been its power of providing isomorphic representation of organisational reality (Roos *et al.*, 2005). On such occasion, a critical perspective is crucial because it will prevent us from thinking that realising the potentiality of the measuring paradigm is condition-free. Indeed, as Mouritsen (2006, p.835) points out, one of the most important conditions of realising those potential is to be able to consider the measurement results as a problem rather than a solution. In order to perceive the measurement results as a problem, one will have to ask the why question and to continue challenging the assumptions and logics behind the measurement results. In this regard, measuring would become a new starting point for learning – it can be used to uncover costs or to explore value creation opportunities (Sveiby, 2010). In cases where measurement results are seen as a solution, one will be disappointed to find out that the inaccurate and unrealistic results lead to nowhere. The purpose of directing researchers and practitioners to go down the first rather than the second route is to promote a culture of learning that is sensitive, reactive, and proactive to changes. Since there is “no fundamental formula to understanding the role of IC in organisation and society” (*ibid*, p.829), we should not confine IC to any existing framework of measurement. Instead, a learning approach toward IC practice might open up new opportunities, such as discovering

problems, and inducing changes and transformation in the process of organising (Mouritsen, 2009a, p.155). However, before we claim such an approach can actually make a difference in practice, we need to think through its missions, conceptual foundations, and pragmatic components. All of these will be discussed in the following chapter.

2.4 Conclusions

Since the early “IC movement” in the 1990s, the IC reporting has proliferated across many different fields, including academia, governance, and business (Petty and Guthrie, 2000; Tan *et al.*, 2008). Alongside the growing awareness of an intangible aspect of organising, the measuring paradigm in the field of IC comes to the foreground and gradually becomes the focus of practice in this field as a result of the biased advocacy of “what gets measured gets managed” (Catasús *et al.*, 2006). And yet, the measuring paradigm is questionable in terms of its underlying assumptions on knowledge and organisation. More importantly, the stretched capacity of this paradigm, as indicated at various levels of analysis, brings our attention to the obvious limitations of IC measurement results. These limitations elicit our further considerations of those important yet neglected elements in the field of IC. That said, the measuring paradigm might deserve a further consideration when the question of “what if” is asked. By asking this question, I seek to find a new angle that would enable the creative use of IC measurement results. This new angle is crucial since it may help us discover the innate value of IC practice. At the beginning of this chapter, I raised the question “could or should IC and its sub-categories be in fact measured?” Apparently, the answer to this question is never going to be a straightforward “yes” or “no”, since both paradigms are plausible, and yet the reasoning behind them should be considered carefully.

On the one hand, IC in terms of intangibles is a complex social construct that cannot be reduced to numbers, ratios, or percentages. That is to say, the quantification of measurement results is merely a simplified engineering process, in which the effort of establishing representational relationship between isomorphic measurements of IC and organisational reality is fruitless since the richness and dynamics of IC resist to be quantified. As such, I second Marr *et al.* (2004), O'Donnell *et al.* (2004, 2006), and Mouritsen (2006, 2009b) that IC classification, to a certain extent, misleads people's attention to the fragmented IC elements. The result of this is the disavowal of the intangible nature of IC – we still treat IC very much like tangibles. On the other hand, measuring IC insofar as it generates sensory data and personal knowledge for further management intervention is possible. It has to be clarified that the problem of measurement results of being subjective and inaccurate remains the same, and yet, the emphasis has been shifted from measurements *per se* to measurements-triggered changes. To make this shift happen, first of all, we need to embrace a critical perspective that would enable us to be candid about the limitations of IC measures; second, a learning approach toward IC practice should be constructed in its own right, for such an approach shall create conditions for realising the potential of measuring, and more importantly, it will transform IC practice from a vehicle for management control into a real engine for organisational change and innovation. In the chapter that follows, I will elaborate the details of how to put this learning approach in place.

3. Exploring a learning paradigm in the field of IC

“So entrenched are the traditional measuring paradigms that executives and researchers have not even started to explore the most interesting reason for measuring intangibles: the learning motive”.

- Sveiby, 2010

In contrast to the measuring paradigm that constrains IC practice as a tool for reinforcing internal management control or as an instrument for manipulating public relations (Sveiby, 2007; Dumay, 2009), a learning paradigm is concerned with the innate value of IC practice insofar as it facilitates organisational change and innovation. As its literal meaning shows, the innate value is something from within, which can be gained from “interpreting human behaviour in light of the relevant context of human purposes, values, needs, and desires” (Finlayson, 2005, p.20). For this reason, I argue that the value of IC must be grasped from within, i.e. from the standpoint of subjective human experiences of an agent and/or inter-subjective human experiences among a plurality of individual agents. A learning paradigm is distinctively different from the measuring paradigm. Nonetheless, the differences between the two paradigms cannot be simply understood as two opposite streams fighting against each other. On the contrary, a learning paradigm takes up critically the legacy of the measuring paradigm and yet brings it to a new level of analysis. Such a paradigm, however, is by no means a linear extension of the measuring paradigm. Rather, it seeks to bring more perspectives to IC practice so as to understand its potential impact on organisations. The task of establishing a learning paradigm is difficult, since there is no off-the-peg theoretical framework that can be used as a point of reference. However, bringing such a paradigm alive is necessary because it will help us understand the ways in

which the potential of IC can be fulfilled. The aim of this chapter is, therefore, to explain the theoretical necessity, importance, and possibility of constructing a learning paradigm.

Researchers and practitioners in the field of IC have made continuous progress in revealing the limitations of the measuring paradigm (O'Donnell *et al.*, 2003b; Marr *et al.*, 2005; Chaharbarghi and Cripps, 2006; Dumay, 2009). However, very little of the existing literature goes a step further to suggest a practical approach that would encourage the exploration of the innate value of IC practice. One exception is the works of the Danish Scholar, Professor Mouritsen. Building on the seminal studies of IC practice, Mouritsen (2006) contrasts two approaches. He draws on Latour's distinction between an ostensive and a performative definition of social life and associates the first IC approach (the ostensive approach) with an object-centred view, while he links the second IC approach (the performative approach) to a process-based view (Mouritsen, 2006, p.821). This distinction was unique and insightful, and yet the interactions between the two approaches were little explained.

With this context in mind, I would call for attention to be paid to a learning paradigm, which will take into account the role of learning in generating and developing of a firm's IC for the purpose of unleashing the firm's innovative potential. In line with Mouritsen's process-based view, O'Donnell (2000, 2003a, 2003b, 2004) cites the works of Habermas and Vygotsky that redirect our attention to the neglected role of language and communication in the field of IC. This contribution is praiseworthy since it rekindles the connections between actors, action, and social contexts. These connections pave the way for the discussion of a flowing process, in which people, activities, knowledge, and experiences become part of the evolutionary transformation of a being (Csikszentmihalyi,

2003). At the heart of this flowing process, a variety of learning initiatives and a strong learning motive hold everything together (Humphreys *et al.*, 2006, Sveiby, 2010).

Notwithstanding this, language and communication still belong to the symbolic plane of representation, which defines IC by “what it is”. What has been missing is a penetrating perspective that would allow IC to become “virtual” in its own right. In this regard, a Deleuzian reading of IC is essential, since Deleuze’s philosophy both intensifies our understanding of a learning motive embedded in IC practice and removes the symbolic shackles attached to the concept of IC.

Constructing a learning paradigm is an ambitious endeavour, since it will focus on the generation and development of a firm’s IC through increasing the intangible flows of knowledge (a new way of thinking), practice (a new way of doing), and experiences (a new way of feeling). None of the mainstream IC frameworks has ever centred on this focus before. Therefore, I will step out of the mainstream constraints and relate the construct of a learning paradigm to a wider context in which the theories of knowledge, organisation, and innovation cross-fertilise each other. As a starting point, I will examine the underlying assumptions of a learning paradigm in comparison with the epistemological and ontological roots beneath the measuring paradigm. Becoming familiar with the differences between the underlying assumptions of each paradigm is essential, since this will help us appreciate the value of a critical perspective that problematises the measuring paradigm and consequently justifies the necessity of constructing a learning paradigm. Second, I will review a few recent projects in the field of IC that demonstrate clearly a learning motive, while not being sufficiently close. Third, drawing on the philosophical works of Habermas (1984, 1987), Vygotsky (1978, 1987), and Deleuze (1977, 1988, 1994), I will elaborate the possibility of constructing a learning paradigm on three different levels of analysis. In fact,

every philosopher contributes a different perspective to our understanding of IC, and altogether these perspectives explain how IC becomes a real engine for organisational change and innovation. Last but not least, I seek to push the boundary of the traditional paradigmatic thinking: instead of viewing a learning paradigm as a complete alternative to the measuring paradigm (meaning the relation between the two paradigms fall into a “either/or” choice), I would argue that a learning paradigm is indeed an open-ended construct rather than a closed article.

3.1 The necessity of establishing a learning paradigm

In previous chapters, I mentioned that the underlying assumption of the measuring paradigm is rooted in the mainstream accounting and managerial literature, which posits IC as a knowledge asset that waits to be commanded and controlled (Chaharbarghi and Cripps, 2006, p.30). This assumption reduces IC to a set of quantified results behind which the manipulative power-holders in organisations may hide their limitations. In recent years, an increasing number of researchers have begun to be aware of the limitations of this assumption, and they have challenged it by proposing IC as a social construct (Marr *et al.*, 2003, p.774; O'Donnell, 2004, p.296; Jørgensen, 2006, p.79; Dumay, 2009, p.491). This proposition is rooted in the socio-historical development of the IC reporting in relation to the increasing dissatisfaction with the traditional financial frameworks: (i) In the late 20th century, the fact that traditional financial frameworks do not include non-financial information in organisations adversely impacts knowledge-based organisations (Guthrie and Petty, 1999). This reluctance to report IC elements has a negative effect that makes a company less valuable or more valuable than it reported, particularly when IC attributes constitute a large part of a firm's resource base. Viewed in this light, the IC reporting seeks to acknowledge intangible resources and activities that are not sufficiently reflected by the

traditional financial statement. By looking at the IC Statement, resource providers can better understand a firm's value creation capability. (ii) While traditional financial frameworks only record a firm's asset transactions in the past, the concept of IC plays a more and more important role in supporting a firm's sustainable development. In other words, information on integrating, transferring, and applying IC can provide organisational decision makers with a more complete view of the firm, including the impact of its social and environmental activities in the future (Grey *et al.*, 1996). It can be said that the socio-historical roots of the IC reporting, which are engrained in the critical reflection and the material observation of the deficits of traditional financial statement, provide the rationale for constructing a learning paradigm.

Moreover, some scholars argue that the value of IC resides in its capacity to change social reality, *ad hoc* to allow actions transforming organisational practices (Jørgensen, 2006; Mouritsen, 2006). Herein, IC is viewed more of a verb than a noun. Hence, its capacity in transforming organisational practices, namely, the intangible aspect of organising, is given prominence. However, going through a change process is always difficult for most organisations. As one of the hidden assumptions underpinning the measuring paradigm in the field of IC, the mainstream organisation theory finds excuses for this difficulty: organisations as closed systems are separated from their environments. The boundary between systems and environments is stable and complete, and therefore it makes the separation successful: on the systems side, the formal organising process of social life is going on and everything within this picture is certain and predictable, whereas on the environments side, the informal organising process of social life presents a rather chaotic and disordered scenario (Thanem, 2001, p.355). Needless to say, the boundary must privilege systems above environments, since organisations are presumed to function in a

unified and ordered manner. In contrast, Cooper's (1990) unconventional explanation on organisation goes head-to-head with this mainstream theory. Instead of viewing boundary as a stable and complete structure, Cooper argues that we must acknowledge the twofold role that a boundary serves: it both separates and joins systems and environments at the same time. As a consequence, both formal and the informal organising processes of social life should be taken into consideration (Cooper, 1990, p.169). Inspired by Cooper's pioneered work, an increasing number of researchers (Styhre, 2002; Tsoukad and Chia, 2003; Clegg *et al.*, 2005) have realised that change and organisation are not separable. In fact, they are imbricated in each other in a continuous conversation between ordering and disordering; between organising and disorganising (Linstead and Thanem, 2007, p.1485). With this context in mind, I argue that organisation should never be treated as a fixed entity, but as an unceasing changing process (*ibid*, p.1486).

Since a learning paradigm relates to knowledge and organisation, two epistemological lessons can be learned from these theories (Swan and Scarbrough, 2001; Tsoukas, 2005; Cooper, 1990; Chia, 1999). First of all, IC as a special kind of knowledge is socially constructed, and thus it is (i) not an object, (ii) not even an economic resource. To avoid the first trap, the non-instrumental feature of IC needs to be acknowledged, that is to say, human experiences are inherent to knowing and it should be given a space for discussion when IC becomes the subject of study. Secondly, the symbolic meaning of IC is important, and yet reducing IC to a symbolic plane might limit its potentiality of transforming organisational practices. To avoid the second trap, attention needs to be paid to the context in which IC is generated and developed. A community of practice approach shifts the focus from IC possession to IC creation. However, this approach idealises a structure for learning and consequently ignores the wider socio-cultural context in which multiple communities

and their interactions exert influence on IC creation. In order to reclaim knowledge as an active process of relating, a learning paradigm should aim for assembling the content, processes, and context of IC practice together.

In addition, the problem with mainstream organisation theory is that it separates organisation (represents order) from its environment (represents disorder) by drawing an imaginary boundary in between. In reality, the boundary between the two is neither stable nor complete. The role that a boundary serves is twofold: it both separates and joins organisations and environments at the same time. Thus, organisation should be understood as a fluid, complex, and changing process that always unfolds itself between ordering and disordering mechanisms. In sum, the necessity of establishing a learning paradigm is on the ground of our increasing awareness that the measuring paradigm limits the potentiality of IC due to its biased assumptions on knowledge and organisations. To compensate for this, a learning paradigm should aim for a different approach that may turn these biased assumptions upside down. As I have shown, the two lessons learned above provide unconventional insights on knowledge and organisations, which seem to indicate the innate value of IC practice lies in an organisation's inherent requirement for change. In the following paragraph, I will elaborate this subtle relationship between IC practice and organisational change and innovation.

3.2 The importance of constructing a learning paradigm

In recent years, the empirical development of IC reporting has made a significant move toward a learning-oriented approach, which is characterised by a more narrative-based format linking IC explicitly to a flowing process, where people, knowledge, action, and optimal experiences become part of the evolutionary transformation of an organisation.

(a) The Danish Guideline

The Danish Guideline was the result of collaboration between universities, companies, consultants, and government officials. It gave priority to the writing of an IC Statement, that is, a thorough report reflects a firm's knowledge management status (DMSTI, 2003). Such statements had three elements: a knowledge narrative, management challenges, and reporting. A company's knowledge narrative described how the company ensured that its products or services accommodated a customer's requirements, and specified how the company organised its resources to achieve this. Management challenges, on the basis of the knowledge narrative, represented logical challenges within knowledge management, and they were further translated into actions for implementing the ambition of the knowledge narrative. When the knowledge narrative and the management challenges were defined, they were put together in a report for internal or external consumption. These aspects revealed the role of IC statements in making visible knowledge management and change activities in respect of employees, customers, processes, and technology. So they did not provide a 'bottom line' indicator of the value of IC (Bukh *et al.*, 2001). Overall, the Danish Guideline avoided the trap of degrading IC to the stocks of a firm's intangible resources. It paid particular attention to the internal communication of IC practice (Rastogi, 2003). The Guideline also combined knowledge narratives and a monitoring mechanism that would form an index of the progress of knowledge management activities. However, the knowledge narratives that it constructed were somewhat exclusive to the voices of a firm's senior management.

(b) MERITUM

MERITUM was a research project involving six nations (Denmark, Finland, France, Norway, Spain and Sweden), and it was one of the most well known projects sponsored by

the European Union (MERITUM, 2002). Its contribution to the field of IC can be summarised in three areas: classification of intangibles, management control of intangibles, and identifications of the gap between capital market and IC research and practice.

Although in each of the three areas MERITUM provided systematic explanations, the project failed to make headway in battle against the old trap of searching for universal measurement and indicators (RICARDIS, 2006). Nonetheless, the project set an important tone for the empirical development of IC matrix, that is, the relationship between IC and organisational change and innovation should be attended to as the focus of IC practice.

(c) The German Guideline

The German Guidelines, also known as “Wissensbilanz”, aimed at strengthening the core competencies and the sustainable value that a firm creates via making use of their intangible resources. It was an approach seeking to make a breakthrough from the mainstream IC measurement results to IC processes (Edvinsson and Kivikas, 2007, p.382). The guideline emphasised that the interactions between IC, business strategy, and knowledge process should be well documented and reflected constantly in a given business context. It also called attention to be paid to the firm’s internal and external communication processes. One of the key findings of this approach was that group learning processes and organisational learning processes began to emerge (*ibid*). However, little is known with regard to ‘how’ and ‘why’ these learning processes were stimulated and sustained.

Clearly, the ‘learning’ motive found its place in the above approaches, and yet they still suffered from two potential drawbacks owing to a persistent managerial mindset. Firstly, even though they share similar origins (Sveiby, 2010), there is still a fine line between a scoreboard approach (e.g. Skandia Navigator, Balanced Scorecard) and a narrative-based

approach: the later emphasises more about a firm's strategy or business model before assessing IC elements. In doing so, the interrelations between these two can be exploited iteratively. Nonetheless, when a firm's strategy or its business model is taken as a given, e.g. the strategy is largely decided by a firm's senior management, a narrative-based approach runs the risk of falling back on a scoreboard approach that tends to de-contextualise IC and to prioritise universal relationships among IC elements (Liu and Wang, 2008). Secondly, most narrative-based approaches share the characteristic of being produced by accountants and their managerial colleagues for the purpose of representing the success or challenges of a firm's value creation, knowledge management or similar initiatives (Fincham and Roslender, 2003). As such, employees as Human Capital in a firm have fewer opportunities to provide their own accounts of these initiatives or to find expressions for their own viewpoints. Likewise, the constituents of Structural Capital or Relational Capital, e.g. customers, suppliers, also struggle to reflect upon their respective living reality of being part of the firm's IC. Last but not least, most narrative-based approaches overemphasise the *status quo* of a firm's IC, i.e. the weaknesses or strengths of IC stock, whereas the methods of encouraging a flowing process for the purpose of generating and developing a firm's IC are discussed elsewhere. To avoid these potential drawbacks, it is important to strengthen and support continuously the exploration of a learning paradigm in the field of IC.

3.3 The possibility of constructing a learning paradigm

Contrary to the measuring paradigm that places emphasis on the measurement results of IC reporting for the purpose of satisfying the desire of management control, possession, or manipulation, a learning paradigm gives prominence to a flowing process that enables the generation and development of a firm's IC through initiating a variety of learning

initiatives and strengthening a strong learning motive. As Sveiby (2004) notes, the learning motive in the field of IC promises the highest long-term benefits in the following two ways: (i) by offering the best way around the issue of internal management control and manipulation; (ii) by allowing more creativity in the design a more process-oriented bottom-up approach and less top-down commands. But what is a learning motive *per se*? As I have elaborated when discussing knowledge and organisation, learning is certainly not as simple as animals' acquisition of a new behaviour (think of Pavlov's dog experiment⁵), nor as linear as machines-like processing of information (think of ICT systems) that can be expressed in the sequence of encoding, storing, retrieving, and decoding (Dierkes *et al.*, 2003, p.20 - 32). The fluid boundary between organisations and environments determines that learning should always be considered in a wider context (Gherardi and Nicolini, 2003). Thus, to make a learning paradigm alive, studying philosophies that constantly deal with the liveliness of learning may provide us with "food for thought". In the following sections, built upon the seminal works of Habermas, Vygotsky, and Deleuze, I will explain the contributions, limitations, and implications of their philosophical ideas with reference to the establishment of a learning paradigm.

3.3.1 A Habermasian reading

Communicative action

The social theory and philosophy of Jürgen Habermas, in particular his *Theory of Communicative Action* (1984, 1987), explores different types of social action that an agent or actor might engage in during organisational transformation (O'Donnell, 2006).

Habermas distinguished between communicative action on the one hand, and instrumental

⁵ Pavlov's experiment on dog's digestive system shows that through successive pairing of an unconditioned stimulus (a bone) and a conditioned stimulus (the gesture of a coach), the unconditioned stimulus and its equivalents can elicit a conditioned response (dog's salivation) (Dierkes *et al.*, 2003, p.18).

or strategic action⁶, on the other hand. In applying the Habermas action types, three points must be borne in mind (McCarthy, 1978; Mitroff, 1983: all cited in Lyytinen and Hirschheim, 1988, p.21): First, the action types are really ‘ideal types’, which means that they need to be considered as social action in an idealised form. Second, the agents or actors who perform organisational action may either be individuals or collective bodies, such as a team, a department etc. Third, although an actor can engage in different types of social action, one type is usually dominant. Instrumental or strategic actions are specific instances of a more general action type, which Habermas called *purposive-rational*. This type of action directed at attaining measurable objectives, and the measures of success of one’s actions are determined by how closely the actor achieves his or her objective. To a certain extent, the existence of purposive-rational action satisfies some empirical means test, and yet, the reasoning behind this type of action is very alarming: the calculation of the best means to a given end is described as egocentric rationality, which usually manifests itself as the game of power and money in a highly centralised institution.

An actor may also pursue communicative action. Habermas (1984, p.86) introduced this concept to explain the possibility of acquiring a higher form of rationality that goes beyond the dominance of egocentric rationality. According to Habermas, “communicative action refers to the interaction of at least two subjects capable of speech and action who establish interpersonal relations (whether by verbal or extra-verbal means). The actors seek to reach an understanding about the action situation and their plans of action in order to coordinate their actions by way of agreement” (*ibid*, parenthesis in original). Clearly, communicative action does not meet the two criteria inherent in those purposive-rational actions, namely, aiming for measurable objectives independent of the means of its realisation, and adopting

⁶ Although Habermas further distinguished strategic action from instrumental action, the crucial point here is that both of them are fundamentally different from communicative action, hence, similar to Finlayson (2005, p.48), I choose to place them in one basket.

a causal intervention in the objective world to realise one's desired end (Finlayson, 2005, p.48). Instead, it is oriented towards "consensual norms", which define mutual expectations concerning how an actor in a given situation should behave in accordance with communicative action (Lyytinen and Hirschheim, 1988, p.21). Herein, the underlying logic is that no communication is possible without reaching understanding, and thus, "whenever agents use language to coordinate their actions, they enter into certain commitments to justify their actions or words on the basis of good reasons" (Finlayson, 2005, p.26). These commitments were termed as "valid claims" in Habermas's further elaboration on his theory of communicative action.

Built on the original work of Karl Bühler, a German linguist, Habermas's theory of communication gives priority to what language does over what it says (Finlayson, 2005). Habermas explains that communicative action naturally involves three parties: the hearer, the speaker, and the world. This involvement is essential because it is not the speaker's relation to the external world, but his or her relation to a hearer coupled with their shared vision of this world that determine the meanings and the effect of communication. For him, the pragmatic functions of language lead to an interpersonal consensus, and from there human action unfolds in an ordered and conflict-free manner and leads to coordination. During this process, validity claims play a key role in guaranteeing that speakers are able to rally support from and finally convince the hearers through providing good reasons. Here, validity claims denote a commitment to justify one's deeds and words to others. Habermas (1984, p.302) argues that three different types of validity claim, namely, the claims to truth, rightness, and truthfulness, are necessary and applied in every instance of language use when the aim of the communication is concerned with reaching understanding. Validity claims are necessary because they are always already embedded in the act of speaking: we

cannot engage in a meaningful dialogue with others without showing how truthful we are, and what we say is right and true (Finlayson, 2005, p.35). The inherent goal of communicative action is the recognition and acceptance of a validity claim. To achieve this goal, it is crucial that all actors respect certain ground rules as follows: (i) allowing the actors a chance to express their opinions and in the same time to take the perspective of the other, and (ii) honouring and recognising the legitimacy of a better and more rational argument (Habermas, 1984; McCarthy, 1978, Lyytinen and Hirschheim, 1988, p.21).

Critical reflection: a Lifeworld-in-System perspective

In relation to communicative action, Habermas borrowed the concept of 'Lifeworld' from Husserl to describe the informal, lively, and unregulated public domain that we share with others before its formalisation (Finlayson, 2005, p.51). For Habermas, 'Lifeworld' must be understood through the constant comparison and contrast with another concept of 'System'. The latter signifies a world rife with formalised structure and purposive-rational action, which is steered by money and power (Habermas, 1987). The Lifeworld has three interdependent functions that cross-fertilise each other. First, it provides a context for communicative action, in which a set of shared assumptions and background knowledge are offered and yet open to public scrutiny. Second, it serves as a force of social integration that unites meanings and consolidates agreed actions. Third, it is the medium of the symbolic and cultural reproduction of society insofar as it facilitates the transmission and improvement of all kinds of knowledge (O'Donnell, 2004, p.303, Finlayson, 2005, p.52). Whenever a successful communicative action takes place, a rationally motivated consensus will arise and then feed back into the Lifeworld, even though no actual consensus is forthcoming (Habermas, 1984, p.42). In so doing, the Lifeworld is able to pool as many shared assumptions and renewed knowledge as possible, and that should lay the foundation

for social integration as well as the symbolic and cultural reproduction of society.

Interestingly, the subsystems of money and power maintain the material reproduction of society through a function similar to that of the Lifeworld, for “they coordinate action and have an integrating effect of their own” (Finlayson, 2005, 54). Habermas (1987) names this effect as ‘system integration’ and he warns that the danger with that lies in the fact it interrupts or even destroys the Lifeworld’s social integration.

Habermas (1987) used the concept of ‘colonisation’ to refer to the harmful effect caused by the System’s invasion of the Lifeworld. He pointed out that the manipulation of money and power increases the teleological behaviours and their complexity. Gradually, “the transparency of the Lifeworld is obscured and the bases of actions and decisions are withdrawn from public scrutiny” (Finlayson, 2005, p.56). As a consequence, a small number of people who control market and administration will be privileged to make any strategic decision that centres on their personal interests or preferences. In the long run, the public welfare and social stability will be jeopardised. Habermas (1987) considers that instrumental rationality⁷ of the sub-system of money and power are geared to profit, personal success, manipulation and control, whereas communicative rationality of the Lifeworld aims for interpersonal understanding and rationally motivated consensus. Although the System and Lifeworld perspective are different from each other, Habermas demanded both perspectives to be taken into consideration. This is not only because System is embedded in Lifeworld, but also it fulfils important social functions, as such “abandoning or doing without them is not an option” (Finlayson, 2005, p.55). In addition, the profound distinction between Lifeworld and System always reminds us the importance of keeping critical reflection by differentiating the progressive tendencies from harmful

⁷ Instrumental rationality refers to an individual’s calculation of the most efficient means for achieving a given desire. It is a concept in contrast with communicative rationality (Finlayson, 2005, p.6).

tendencies in a given context. Specifically, this can be done through thinking of the role of language: if language enables intuitive knowledge of participations as communicative actions, or if it adopts an observer view that functions as an ideological discourse in favour of strategic actions (O'Donnell, 2004, p.310). While communicative action tends to be open to views and intelligible, strategic action has a kind of in-built opacity. From a wider perspective, one can tell that Lifeworld is generally understood as the pursuit of self-chosen ends, in a way that the System is not (Finlayson, 2005, p.55).

Limitation

Habermas's philosophical ideas are comprehensive and inspiring in many different ways, however, his argument that validity claims are the central tenet to the process of reaching consensus is problematic (Porter and Porter, 2003, p.130). As Finlayson argues (2005, p.39), it would be wrong to move on from his theory of meaning without pausing to address the two most significant objections to it. First of all, the phrase of 'reaching understanding' has ambiguous meanings. It can mean to make oneself understood by others, but can also mean to reach an agreement with someone. This ambiguity is prominent since Habermas used this phrase to explain social order, and he insisted that social order rests upon shared meanings and understandings. Nonetheless, shared meanings and understandings might fall well short of interpersonal agreements or consensus. The overemphasis on consensus denies the plurality of life, and the consequence of that is alarming: undesirable biases of human decisions and judgements that are covered under the disguise of agreements may arise, for instance, in social psychology, experiments on group pressure⁸ prove that inconsistencies can be solved in a rather irrational yet 'agreed' manner (Rienstra and Hook, p.327). Hence, while we recognise the potentiality of making

⁸ For more details, see Asch, S. E. (1951). Effects of group pressure upon the modification and distortion of judgment. In H. Guetzkow (ed.) *Groups, leadership and men*. Pittsburgh, PA: Carnegie Press.

communication a new pathway to coordinating action, we should also be aware the ambiguous roles it serves, i.e. even ongoing communication cannot ensure reconcilability between actors who maintain different values, and thus the result of communicative action insofar as generating consensus is neither definitive nor necessary. Second, validity claims are still something very much tangible, whereas the missing part of Habermas's theory of meaning is the lack of recognition that human beings are not always capable of making the intangible tangible. Many of our life experiences, including human emotions, feelings, and desires, may not yet belong to a symbolic order (Crespi, 1987, p.420), and thus Habermas's underlying assumption that there must be a generalisable interest of all the relevant parties that can be expressed through linguistic actions is questionable.

Implications

A Habermasian reading renders a critical perspective to the construct of a learning paradigm in the field of IC, which elicits the following two implications. First of all, the stress on the acceptance of certain ground rules by those who engage in the communicative action creates a chance to criticise organisational processes that conform to the criteria inherent to purposive-rational action. Linking this idea back to IC reporting, Habermas's theory of social action implies a platform for challenging existing organisational orders that hinder access to an open and rational debate between an organisation's members, and this subsequently prevents the critical assessment of the validity of IC information, norms, and values on which some suggested organisational action is based (Forester, 1983: cited in Lyytinen and Hirschheim, 1988, p.22). Hence, it places the rationality of communication in and around IC under spotlight. Secondly, a critical reflection on the intention of implementing IC reporting systems as well as the treatment of IC indicators in an organisational context is much need. Whilst 'IC Lifeworld' seems to concern with the

bright side of IC, i.e. the conditions of making IC an asset, 'IC System' reveals the dark side of IC, i.e. the conditions of making IC a liability. The limitations of IC measurement results can be found by reflecting critically on the two tendencies of IC. Taken together, communicative action and critical reflection constitute the first two process components of a learning paradigm, which suggest that IC reporting should avoid being reduced to a System geared by money and power. Instead, it may serve as an emancipating discourse that creates conditions for challenging existing organisational order, be it inequitable power structure or unjustified organisational arrangements (Lyytinen and Hirschheim, 1988, p.22). Since the role of language is ambivalent, a Habermasian reading might have excluded the possibility of misunderstandings or disruptions in communicative action. Thus, a learning paradigm should never rest upon a superficial agreement or consensus.

3.3.2 A Vygotskian reading

After publishing the second volume of the *Theory of Communicative Action*, Habermas hinted in a 1989 interview that his unfamiliarity with Vygotsky's work might have caused some problems (Nielsen, 1995, p.829). One of the most prominent problems is perhaps Habermas's assertion that communicative action will undoubtedly bring out universally accepted rationality as the foundation for interpersonal agreement. To contrast this assertion, Vygotsky offered something different to read. First, as I mentioned earlier, interpersonal agreement does not necessarily mean intra-psychological agreement. On certain occasions, such as group pressure, interpersonal agreement may bear more similarities to a "compromise" than "consensus". As Vygotsky (1978, p.35) points out, inter-psychological function and intra-psychological function are interrelated, and yet these functions may not evolve in a synchronic manner. Thus, the assumption that inter-personal agreement entails intra-psychological agreement in the context of communicative action is problematic.

Second, an urgent question should be addressed here: should consensus be achieved at the expense of sacrificing plurality in a social or organisational system? In Habermas's eyes, plurality only resides in the participatory relations whereby individuals put forward their different strategic positions. It is thus seen as a conflict caused by position-bound interests (Wardekker, 1995). This explains why a Habermasian reading on plurality is always valued negatively. Vygotsky and his followers, on the contrary, gave a more differentiated and positive interpretation of plurality: instead of relying on universally accepted communicative rationality, Vygotsky argued that positions, perspectives, and other socio-cultural resources can be inconsistent with each other, and yet our human beings are capable of holding different rationalities at the same time. That is to say, it is totally unnecessary to hold onto 'the one' while labelling the rest of reasons or rationalities wrong and useless (*ibid*). As Jovchoelovitch (2007, p.61) notes, Vygotsky's seminal works reopen the internal structure of learning, hence, we need a further understanding of his major philosophical ideas.

Mediation

Vygotsky is recognised as the founder of activity theory, a psychological meta-theory or framework that seeks to explain human activities (Engeström, 1995). He is known for examining the inter-psychological and intra-psychological systems in the process of change by using dialectic logic to understand the interrelationships between components of the systems (John-Steiner and Mahn, 1996, p.194-195). Vygotsky defined his own approach of unifying the subjective and objective phenomena as "Dialectical Psychology" (Vygotsky, 1997, p.112). The linkage between the two interconnected phenomena is mediation, which refers to the role of meaningful mediating artefacts, be it signs or material tools, in enabling the exchange of ideas and facilitating novice understanding (Vygotsky, 1978). Mediation

has been a key to the research work of both Vygotsky and his followers in that it provides a means for human beings to control their own behaviours ‘from the outside’ by using and creating artefacts (Engeström, 1995). Since every human activity contains the use of signs and/or material tools, mediating artefacts are thus accorded great importance for guiding a learner’s behaviour as well the behaviour of others.

Building upon the concept of ‘mediating artefacts’, boundary objects are defined as “objects that are both plastic enough to adapt to local needs and constraints of the several parties employing them, yet robust enough to maintain a common identity across sites. They are weakly structured in common use, and become strongly structured in individual-site use” (Star and Griesemer, 1989). Boundary objects are mediating artefacts in the sense that they can facilitate a learner’s representation of a knowledge object, but more importantly they also provide a template that informs action. As Carlile (2004) and Star (2010) note, boundary objects strengthen the concept of ‘mediating artefact’ by expanding its function of enacting new contexts to the different representations of a knowledge object. That is to say, boundary objects not only allow for the interpretative flexibility of representations, but also highlight a pragmatic commitment to new actions, which occur not through the mediating artefacts *per se*, but through the engagement and activities of those within and between communities. In the light of this, a boundary object has two roles to play in practice: (i) from a linguistic point of view, it allows interpretative flexibility of a knowledge object; (ii) from a pragmatic point of view, it provides a template or an infrastructure through which difference of representations can be explored, resolved, and subsequent actions can be informed.

Internalisation/Externalisation

Vygotsky's follower, Engeström is seen as a leading scholar of the third generation of activity theory. He introduced the notion of expansive cycle, a development process containing both internalisation and externalisation, in order to understand change and innovation. If semiotic mediation succeeds, abstracted concepts that learners capture in the context of external activities will tend to be internalised as internal constructs (internalisation) and subsequently influence the way that learners behave in the future. In Vygotsky's (1978, 1998) own explanation, internalisation must include a series of transformation, including (a) an operation that initially represented an external activity is reconstructed and begins to occur internally; (b) an interpersonal process is transformed into an intrapersonal one; (c) the transformation of an interpersonal process into an intrapersonal one is the result of a long series of development events. In short, internalisation is the psychological reconstruction of an external action or operation, which always brings about 'mindful practice' as a result. For this reason, internalisation cannot be understood without externalisation. Externalisation herein refers to mental processes manifest themselves in external actions performed by learners and it is demonstrated when learners explain new skill or concept in his or her own words or ways (John-Steiner, 2000).

In comparison to internalisation, as Engeström (1996) points out, Vygotsky's work on externalisation has received relatively little attention. Instead of viewing internalisation and externalisation as two independent processes, Engeström emphasises that the oscillation between the two processes creates a continuous operation of human cognition and activity. The dynamic constructions that result from externalisation are materialised meanings, composed of shared ideas, beliefs, and knowledge etc. Following the logic of Vygotsky's 'Dialectic Psychology', it can be concluded that internalisation and externalisation are in

dialectical tension with each other, and this tension provides fertile ground for the growth of new ideas and innovative practices. Based on Vygotsky's and his interpreter/collaborator Leontiev's work, Engeström (1996)'s expansive cycle explains when internal/external movement becomes cyclical connecting past to future, externalisation bounded change or innovation can be understood as the solution to the disruptions and contradictions of a given activity system.

Limitation

In general, the Vygotskian notion of learning and development seems to be grounded in a Hegelian⁹ approach to dialectics (John-Steiner and Mahn, 1996, p.195): throughout his work Vygotsky used the dialectical method to analyse, explain, and describe interrelationships fundamental to human development. However, his emphasis on the dialectical transformation of consciousness from the outer to the inner tends to reduce the fundamental difference of the other to the self and vice versa (Cheyne and Tarulli, 1999: cited in Sullivan, 2010, p366). In other words, the dialectical analysis that Vygotsky applied reinforces a reduction of difference for the sake of mutual transformation. The reason behind this reduction might be accounted for by Vygotsky's deliberate avoidance of the phenomenological and his preference for explanation rather than description (*ibid*). More prominently, it seems to be the problem that a classical Vygotskian interpretation of mental processes is exclusively internal. Take the internalisation-externalisation cycle for example, a major problem has revolved around the issue of rooting: where does the external actually take root as the internalised form, which then becomes a sign/symbol/world for mediation? As Zinchenkon (1985, p.21) points out, "the largest

⁹ According to Kozulin (1990, p.118), on many occasions, Vygotsky explicitly acknowledged his dependence upon the Hegelian system of dialectical reasoning. For example, Blunden (1997) pointed out Vygotsky's critique of Piaget in terms of three sets of relationships: individual-social, subjective-objective, senseless-intelligent, is a clear demonstration of Hegel's dialectic logic. However, Hegel is more concerned with the 'objective' aspects of these dialectics, whereas Vygotsky takes up the 'subjective' aspects.

problem is that the logic of internalisation/externalisation eliminates the creative nature of the developmental process, without which new formations cannot arise. This logic leaves no place for intuition, insight, and ultimately, for revelation”.

Vygotsky’s mature theory on cognition is well known, and yet this maturity runs the risk of overemphasising on the role of semiotic signs by giving the wrong impression that language or communication is the most important factor influencing the way that people learn. As human beings, we are not always willing to adjust our concepts to accommodate others’ behaviours, and the end result is often the conflict at the interpersonal level and intrapersonal evaluation (Rizzo and Corsardo, 1988, p88). This is not only because of the difficulty in articulating some thoughts or in using semiotic signs to elaborate and clarify our thinking on them, but also because there is sometimes a difficulty in accepting the outer words of others, especially when a novice learner is aware of hurtful thoughts or negative feelings that he or she is afraid of (Bakhtin, 1984). For this reason, the typical Vygotskian analysis¹⁰ seems not to emphasis enough on the role that human feelings, emotions, or affect plays in the context of change and innovation.

In viewing human existence as a whole, we must go beyond the implications of externalisation/internalisation to a very different, non-spatial level. It is the space between that needs to be nurtured and allowed to develop. Affective-meaningful formations, which are objectified in ideal forms that also have a material existence, never lose their subjectivity. The real, individual aspect of affective-meaningful formations is not internal. It is quite objective and exists the space in-between. Therefore, a real form has a

¹⁰ For some, Vygotsky did hint at the possibility of studying emotions by linking it to cognition as a point of departure, e.g. he wrote a short essay at the end of his life on the psychological ‘paradox of the actor’, with regret, the majority of his readers or followers in the Western world did not pay enough attention to this point (John-Steiner, 2000).

subjective-objective existence. Relations between ideal and real forms can be described that of mutual generation between each other: real forms generate ideal ones, and ideal forms generate real ones. Ideal, real, and mediational forms constitute human existence.

Implication

A Vygotskian reading brings a material perspective to a learning paradigm in the field of IC, which can be summarised as follows. First, mediation gives prominence to the role of artefacts. Star (2010) used an example to illustrate the use of boundary objects: it is true that American flags may serve the role of a mediator eliciting conversations and dialogues among different social groups, however, it might be more interesting to study people making, advertising, and distributing American flags and their work arrangement and heterogeneity than to simply say that many people have different interpretations of American flags. This example clearly shows that if we want to study the function of a sign (not only its literal meanings, but also what lies behind it), it is much better to ask the question ‘what kind of role does this sign play in a specific context’ than to simply ask ‘what does this sign mean’. By the same token, when IC is seen as a boundary object (Mouritsen, 2006), a meaningful question would be “how does IC transform organisational practices”. As Wertsch notes (1985, p.15), the material foundation of Vygotsky’s notion of learning and development highlights that mental processes can be understood only if we understand the tools and signs that mediate them. This point implies that the knowledge processes within local practices can be brought into association and alignment through mediation and negotiation around boundary objects in an organisational context.

Second, Vygotsky’s distinction between internalisation/externalisation tackles the private and public displays of learning. The oscillation between these two displays forms a

continuous operation that allows the learners to (i) reconstruct external activities internally until a relatively stable construct is formed, and (ii) put that internalised construct into action again so that more materialised meanings can be added to it. As such, the constant tension between these two processes and their temporary resolution might bring about new ideas or innovative practices. By the same token, new cycles of organisational change and innovation might be found through the interactions between the two displays of learning in the process of implementing IC reporting systems. Nevertheless, organisational change or innovation - in a pure Vygotskian sense - is defined narrowly as a structural disruption based on dialectical dynamics. This makes the material perspective alone insufficient to account for those entirely new, unexpected, and unstructured phenomena, which fall outside a linguistic system in the first place.

3.3.3 A Deleuzian reading

Unlike Vygotsky and his followers, Deleuze rejects the notion of dialectics as the resolution of opposites for the reason that the richness of social life is more than a series of conflicts or crisis (Linstead and Thanem, 2007, p.1487). With the publication of his well-acclaimed book, *Difference and Repetition*, in 1964, Deleuze proved his capability of formulating his own philosophy¹¹, and this book was particularly favoured by Michel Foucault, whose comment ‘perhaps one day, this century will be known as Deleuzian’ almost became an adage that predicted the explosion of Deleuze’s readership in the 20th century (Styhre, 2002, p.463). Indeed, the charm of Deleuze’s philosophy lies in the fact that he never attempted to provide a pre-determined framework in his thinking or writing. Consequently, as a reader, we are able to enjoy the freedom of thinking along with the loosely coupled concepts that he offered. However, it should be emphasised at this point

¹¹ Prior to this book, Deleuze published a number of books on other philosophers, such as Hume, Nietzsche, Bergson and Spinoza (Styhre, 2002, p.463).

that Deleuze's philosophy is complex and wide-ranging. As such, the discussion of his works below will be concentrated only on those that have practical implications for the establishment of a learning paradigm in the field of IC, *ad hoc* the association between a learning paradigm and the emergence of novelty will be explored. This focus will fit in well with the nomadic spirit embedded in Deleuze's philosophy (Clegg *et al.*, 2005, p.464).

Assemblage

Assemblage is any number of things or pieces of things gathered into a single context or a site where a discursive formation intersects with actual practices. It is therefore simultaneously a "mechanic assemblage of desire or a collective assemblage of enunciation", which is capable of bringing about any number of effects – aesthetic, mechanic, productive, destructive etc. (Deleuze and Guattari, 1988, p.504). The idea of assemblage is fundamentally conditioned on the notion of difference-in-itself, an important concept that Deleuze elaborated in his book *Difference and Repetition* (1968). Difference-in-itself refers to a pure form of difference, which is the key to understanding the problem of essentialism (Styhre, 2002, p.464). Essentialism can be best exemplified in Plato's three-tiered system of idea, the operation of which separates the core from its simulacrum (Deleuze, 1968, p.59-63). For Plato, the core is the essence because it renders a stable "identity" to an entity, whereas anything else different from the core can but be understood as a simulation or a copy of that entity. For instance, in order to define something such as bravery, we can determine the idea of bravery first, and from there people who act bravely, i.e. bravery-in-itself, and people who use bravery as a smokescreen for personal gain, i.e. the copy of bravery, can be distinguished. In the past, the copy was either excluded from consideration by rejecting it as an external error (e.g. Decartes's dualism) or by assimilating it into a higher form of rationality (e.g. Hegel's dialectics). In whichever case,

the logic behind essentialism assumes that difference is subordinated to identity. Deleuze, however, challenged this view and argued that simulations are part of the essence and all of them together constitute an inherent difference that should be accepted in its own right (*ibid*, p.64). Deleuze's real intention is perhaps to depart from the fixed essence of being by doing without the mediation of an identity. It turns out that his emphasis on difference-in-itself spawned a new philosophy of what Žižek (2004) called 'becoming without being'.

(a) The mechanic assemblage of desire: body, affect, desire, and power

In their second co-authored book *A Thousand Plateau*, Deleuze and Guattari wrote down "we avoided defining a body by its organs and functions, we will avoid defining it by Species or Genus characteristics; instead we will seek to count its affects" (Deleuze and Guattari, 1988, p.283). A further clarification was made on their re-interpretation of Spinoza, the philosopher who emphasised on assembling the two dimensions of a body: the material elements belonging to the body in given relations of movement, rest, speed, and slowness; and the intensive affects that the body is capable of at a given power or degree of potential (*ibid*, p.287). Clearly, affect/affection is the key to help us comprehend the Deleuzo-Guattarian conceptualisation of a body. Brian Massumi (*ibid*, xvii), the translator of *A Thousand Plateaus*, put this note down before the main text:

"Neither word denotes a personal feeling (sentiment in Deleuze and Guattari). L'affect (Spinoza's affectus) is an ability to affect and be affected. It is a personal intensity corresponding to the passage from one experiential state of the body to another and implying an augmentation or diminution in that body's capacity to act. L'affection (Spinoza's affectio) is each such state considered as an encounter between the affected body and a second,

affecting, body (with body taken in its broadest possible sense to include “mental” or “ideal bodies”).

As such, in line with the difference-in-itself view, we can infer that a body both serves as a vehicle enabling different experiential encounters and influences its own capacity to act differently by drawing on these experiential encounters. Keeping these two dimensions side by side is crucial to understand desire and power.

Desire, for Deleuze and Guattari, is not something subjected to “the negative law, the extrinsic rule, and the transcendental ideal” (Deleuze and Guattari, 1988, p.171). That is to say, treating desire as lacking, pleasure, or a psychoanalytical combination of death, dream, and reality etc. ignores its inborn nature of being immanent and resistant, that is, desire requires its own exuberance and resists to be fixed as something outside of itself (Linstead and Thanem, 2007, p.1490). For instance, class struggle is an important concept for Marx; however, he only sees the simulation of desire as something expressed in the class-bound interest of land or money. By the time desire is objectified onto an entity, we have already lost sight of its “highly developed, engineered setup rich in interactions” (Deleuze and Guattari, 1988, p.237).

The simulation of desire is one of the many possible ways in which our society is held together. Nonetheless, it is not productive. Only when a desire is connected to another desire, can its own exuberance be brought out in full. That is to say, desire should be defined by production (I produce the object because I desire it) rather than lack (I desire something because I don’t have it). In relation to this point, the desire of power can be interpreted as an immanent will to power. And yet, conventional philosophy simplifies power to a physical form of control or occupation without considering a range of potential

that it could possibly associate with, such as “a capacity to affect or be affected”, “a capacity for existence” (*ibid*, xviii). Two words for power that exist in French seem to demonstrate this point better: literally, ‘puissance’ is closer to potential, whereas ‘pouvoir’ links more to the actual control or occupation, and yet, all of them can be translated into power. If we can incorporate the “potential” aspect into the traditional perception of power, then we will derive a different finding: social productivity in terms of innovation and creation can be obtained through the connections of desires in their imminent wills to realising a range of potential of selves and/or others. As Deleuze and Guattari (1988, p.217) summarise, power should be defined much more by what escapes it, by its impotence, than by its objectified form of control or occupation.

(b) The collective assemblage of enunciation: language, concept, and event

Deleuze and Guattari developed a theory of language that departed from Saussurean semiotics: instead of seeing language operates through a set of linguistic principles, such as synchrony and diachrony, they stretched language outside of itself to expand its possibilities for imagination and thinking (Styhre, 2002, p.466). This departure is meaningful because it disrupts the way that language is posited as a representational system within which meaning is anticipated to be detected below language, “it is always possible to break a language down into internal structural elements...(however) a language is never closed upon itself, except as a function of impotence” (Deleuze and Guattari, 1988, p.8).

Deleuze and Guattari emphasised that meaning evolves when various concepts are related to one another in a continuous manner (Styhre, 2002, p.457), but what is a concept? Concepts, for Deleuze and Guattari (1994, p.5), are “not waiting for us ready-made”, rather, they are conceptual tools that we invent and play with everyday, and through which we are

capable of interacting with each other at a certain level of intellectual complex. It is worth noting that not a single concept belongs to us, and yet we can make use of them to enable new ways of thinking and doing. Therefore, a concept should not be evaluated by what it is, but what it can be used for, *ad hoc* its contribution of becoming a source of reflection (Styhre, 2002, p.462-496). The premise of making use of concepts in a fruitful way is to recognise that meaning does not reside in one particular concept, but always dislocates itself between concepts, individuals, and the variances in between caused by different interpretations.

In the same vein, an event subordinates to language, but it is not as simple as a linguistic effort that informs us about when, where, and what happened. Deleuze (1990, p.52) used the word “singularity” to describe the idealistic aspect of an event; as he put it, “singularities are turning points and points of inflection; bottlenecks, knots, foyers, and centres; points of fusion, condensation, and boiling; points of tears and joy, sickness and health, hope and anxiety, ‘sensitive’ points”. For him, the value of events lies in its relation with other events: one event could include another; overlap with another but not entirely inclusive; or separate from another completely (*ibid*). As such, events form an infinite series, and they are “capable of opening up the future, making a difference, and changing the world” (Linstead and Thanem, 2007, p.1494).

Deleuze (1993, p.77-80) claimed that an event is a synthesis of past and future, because once it has happened, simultaneously it may trigger another event that is about to happen, and therefore it is never going to be what is happening. As he put it, “(an event) is at once public and private, potential and real, participating in the becoming of another event and the subject of its own becoming”. In this regard, in order understand the present in relation

to the future, we need to pay particular attention to events – as discontinuities in history, beyond their moment of realisation, and promising further differentiation (Linstead and Thanem, 2007, p.1493).

By using the “rhizome” metaphor, Deleuze and Guattari (1988) took the concept of “assemblage” even further. According to them, “rhizome” is concerned with a non-linear or decentralised approach to multiplicity, that is, multiplicity connected to other multiplicities forming a rhizome. It is this dynamic formation that involves spontaneous and unpredictable connections between heterogeneous elements (Linstead and Thanem, 2007, p.1484). Unlike a hierarchical or an arboreal structure that relies on dualistic categories and binary choices, a rhizome has no centre, not even a periphery, but it has substantial nodes. The function of a rhizome is to “ceaselessly establish connections between semiotic chains, organisations of power, and circumstances relative to the arts, sciences, and social struggles” (Deleuze and Guattari, 1988, p.8). As a result of these connections, we gain a map with multiple entryways (*ibid*, p.14). These multiple entryways stand for multiple or creative pluralism (as opposed to a dialectical pluralism of order), which is clearly in favour of enfolded-ness, multiple relations, and heterogeneous connections (Linstead and Thanem, 2007, p.1487). Hence, the role of assemblage is to explore different dimensions of a multiplicity so that it can be connected to other multiplicities that eventually form a rhizome.

Becoming

We need two concepts, i.e. the virtual and the actual, to help us understand Deleuze’s philosophy of becoming. For Deleuze and Guattari (1994, p.211), the virtual “possesses a full reality by itself” and yet it is not ‘reality’ *per se*, not even engaged in a necessary

relationship with the real. The virtual is the universe, the one and the all, including everything and that is in everything (Linstead and Thanem, 2007, p.1492). As DeLanda (2006) notes, the key to thinking rigorously about the virtual is to conceive of it as a space with very different properties than any actual space. Difference is essential in order to understand the virtual, since the virtual is not constituted by different things, but enjoys a pure form of difference insofar as it embodies different propensities that enable a being to differ from itself (*ibid*). Therefore, no one can master the virtual, but approaching to the virtual is plausible. This plausibility introduces the second concept, the actual. The actual divides and positions the virtual in terms of time, space, and sensation (Deleuze, 1977). It is somewhat of a snapshot of the virtual that constantly manifests itself in a series of assemblage, and yet it will not remain fixed with one particular assemblage, for every assemblage connects the present to the future and therefore links the actual to an extended world of the undivided virtual (Linstead and Thanem, 2007, p.1493). It is through the actual that the various propensities of the virtual are invested with external characters so as to be presented as beings differing from one another (*ibid*).

For Deleuze and Guattari (1988), every actual body has a set of traits, but every actual body also has a virtual dimension that consists of a vast reservoir of potential traits, relationships, and movements. This collection of potentialities, in light of the Deleuzo-Guattarian definition, is called the Body-without-Organs (BwO). To make oneself a body without organs means to experiment actively with oneself to draw out and activate these virtual potential through establishing multiple connections with other bodies. As mentioned previously, power has an actual dimension that expresses itself as power games aiming to enhance an actor's sense of control and possession, and yet the virtual dimension accords primacy to the other side of power, which focuses on the actor's potential and capacity to

act. Similarly, the actual dimension of language gives rise to the view that language consists of tools for representing social reality and rendering orders; in contrast, the virtual dimension of language multiplies meanings and considers language as a context to understand reality and orient human actions (Boje, 2004, p.571). As a reflection of all these points, Deleuze and Guattari (1988) used the idea of ‘becoming’ to link the virtual and the actual. For them, becoming is a creative disruption that arises from the oscillation between the actual and the virtual. While the actual dimension draws our attention to the creation of a new and different moment in time, the virtual dimension reminds us not to terminate here and now. Instead, we are encouraged to make movement away from the previous moment when a state of being is actualised.

The actualisation of the virtual is a “genuine creation” (Deleuze and Guattari, 1994, p.213), since it is not about realising the already-existing possibilities in reality but about bringing pre-existing potentialities alive. At the heart of this creation, a trigger point for movement is needed, that’s what Deleuze would call, an intensive process or intensity. The important property of intensity is that it cannot be distinguished without involving a change in kind. For instance, the infant’s experience of the world is made up of sequences of risings and fallings of intensity, a bright light, a sharp noise, or a gentle voice etc. This feature renders intensity a transcendental status that eventually makes objects or extended forms recognisable in everyday perception. Relying on this notion, we can advance our understanding of affect in a Deleuzian sense.

Affect is a pre-personal intensity corresponding to the passage from one experiential state of the body to another and implying an increase or decrease in that body’s capacity to act (Massumi, cited in Deleuze and Guattari, 1988). It is therefore the “effectuation of a power

of the pack that throws the self into upheaval and makes it feel” (*ibid*, p.240). That is also to say, affect is the sensation being affected by another body, which cannot be realised fully in language (*ibid*, p.30). More importantly, it is the kind of experiences that suggest we are not alone and we exist in relations beyond what we may recognise or even wish. As such, if becoming is an escape from one actualised state of being, it will then be intensified by the sensation of being affected by another body, i.e. the affect converts the escape positively into opportunities, and links it with the never-accomplished actualisation of the virtual (Hillier, 2005, p.281).

Summary and implications

By immersing myself in a Deleuzian world, I acquired the inspiration of moving one step forward on my journey of exploring a learning paradigm in the field of IC. A brief summary of Deleuze’s loosely coupled concepts can help us understand the less visible consistency behind them. First, difference-in-itself lays the foundation for Deleuze’s philosophical empire - it both addresses the necessity and opens up the possibility of departing from the conventional essentialist thinking, which subordinates difference to identity. The emphasis on a pure form of difference challenges human beings’ cognitive forces in terms of their capacity to establish a dominant form of thinking without considering the nature of other forces to which they are linked. This point elicits our further interests with regard to assemblage, more specifically, the pure assembling of desire.

Experience is the main philosophical site for Deleuze’s exploration of the conditions for creation, since any constructive activities may benefit from the push of experiential forces (Steinberg, 2006, p.84). Experience is based on a body’s mode of existence that links to its intensive capability to affect and to be affected. Therefore, what experience can offer is

more than a mental reflection of what has happened; on the contrary, it can wander between one concrete experiential state of the body and the body's propensity to continue acting until a different experience is obtained. For Deleuze, human faculties, such as thought and sensibility, function creatively by disrupting each other continually rather than by 'staying in peace' (*ibid*, p.86). By placing the 'mechanic assemblage of desire' at the forefront, we do not have to rely on linguistic forces and thus existing knowledge to account for the emergency of novelty. Although language continues to mediate everything within communicative interactions, experiences or affect can take the lead in mobilising the world by picking up the residue that communicative interactions leave behind (Deleuze and Guattari, 1994).

Second, Deleuze's concepts of the virtual and the actual in relation to 'becoming' were introduced for two reasons. On the one hand, both of them can be witnessed in the exploration of the mechanic assemblage of desire or collective assemblage of enunciation. On the other hand, the oscillation or interplay between the virtual and the actual gives rise to the rhizomatic becoming, that is, a creative disruption functioning on the condition of decentralised and spontaneous connections between heterogeneous elements. In other words, rhizomatic becoming prioritises a principle of connectivity, multiplicity, and heterogeneity, and the result of which leads to radical creation. In sum, Deleuze's philosophy of becoming has its root in the auto-subversive mechanism of experiential forces, and the implication of which for building a learning paradigm in the field of IC can be summarised as follows:

- (i) The process of implementing IC reporting systems is an affect-based learning experience that contributes to the generation and development of a firm's IC.

- (ii) In line with the philosophy of rhizomatic becoming, this experience should naturally involve creative disruptions due to the auto-subversive nature of affect.
- (iii) To uncover creative disruptions in practice, we need to pay attention to the connection and interplay between different forms of assemblage.

3.4 Conclusions

Table 1: An overview of a learning paradigm

Philosophical origin	Perspective	Learning as	Key process components	Approach to innovation
Habermasian	Critical	Reflection	<ul style="list-style-type: none"> • Communication • Critical reflection 	Dialectic dynamics rooted in communication
Vygotskian	Material	Participation	<ul style="list-style-type: none"> • Mediation • Inter-/Exter-nalisation 	
Deleuzian	Virtual	Affection	<ul style="list-style-type: none"> • Assemblage • Becoming 	Rhizomatic dynamics rooted in affect

The materials presented above demonstrated the possibility of finding the innate value of IC practice through the exploration of what I call “a learning paradigm”. This paradigm seeks to enable a flowing process, where a firm’s stakeholders, local practices, knowledge resources, and organisational experiences encounter each other and contribute to the generation and development of a firm’s IC. At the heart of this flowing process, it is a whole variety of learning initiatives and a strong learning motive that hold everything together. This learning paradigm contains six process elements that are accountable for organisational change and innovation. Table 1 summarised the various aspects of this paradigm. The theoretical foundation of this paradigm is primarily grounded in the philosophical thinking of Habermas, Vygotsky, and Deleuze.

A Habermasian reading of a learning paradigm entails a critical perspective that helps distinguish between harmful and progressive tendencies in respect of capitalising on IC in an organisational context. This critical perspective tackles the issue of political struggle

embedded in an organisational context by taking into account the dark side of IC, i.e. the possibility that IC becomes a liability. This issue relates to the problem of management control at a deeper level. This perspective insists that the critical potential of the concept of IC should be provoked by means of pursuing communicative action versus instrumental action, and making critical reflection by adopting a Lifeworld-in-System perspective. In doing so, an adaptive dialectics with a special focus on inter-subjective relationship (individual versus collective) begins to emerge within a symbolic domain that opposes a centralised approach to IC practice. By communicating and reflecting critically on ‘what IC is not or should not be’, organisations may acquire a shared intention to challenge the problematic orders or unfair arrangements in their respective business contexts. In short, “learning”, viewed in light of a Habermasian reading, equals reflection.

A Vygotskian reading introduces a material perspective that highlights the importance of contextualising the concept of IC in local practices. Through mediation and internalisation/externalisation, the question ‘what does IC do?’ in a given business context can be addressed. Accordingly, an adaptive dialectics with a special focus on intra-psychological relations (private versus public) comes to play a part within a symbolic boundary, which enables firms to engage with certain actions leading to change and innovation. Hence, “learning” in accordance to a Vygotskian reading can be interpreted as participation, i.e. participatory practice.

Finally, a Deleuzian reading involves a virtual perspective contingent on the notion of ‘difference’ (Deleuze, 1987). The creative encounter between IC and other beings in actions forms various assemblages that prepare their rhizomatic becoming – IC-becoming of affect and affect-becoming of IC. In this regard, IC is no longer a concept restricted to a

symbolic domain. Instead, a rhizomatic dialectics, which is rooted in a firm's daily experiences of making continuous improvement to their local practices, can be observed through a flowing process where people, knowledge, action, and human experiences become part of the evolutionary transformation of the firm. Viewed in this light, "learning" in a Deleuzian sense is the synonym of affection.

While the mainstream research and practice in the field of IC prioritise the logical sense that measurement makes the intangible tangible in economics terms, a learning paradigm seeks to create a space for the discussion of what really matters. The main issue is that a flowing process would allow the hidden benefits in the IC Statement to come to light: it is through learning that the evolutionary transformation of an organisation becomes possible. This is primarily because learning not only brings about new knowledge, but also enhances the interactions between learners as well as their critical thinking ability. In the meantime, learning may reinforce good organisational practices with the support of appropriate tools, and subsequently it might encourage learners' behavioural changes. Last but not least, learning may open up opportunities for creative encounters in the symbolic plane, which would add a different dimension to the existing being; it might also give rise to a new sense of being able to affect and to be affected. In sum, learning as a flowing process in an organisational context might generate and develop IC in terms of activating information/knowledge flows, practice/action flows, and energy/affect flows.

4. Research Design, Methodology, and Analysis

“Research is about finding out a pattern, relationship or regularity in the world out there that it is not well understood or even known”.

- Kallinikos, 2010

The thesis is aligned with qualitative researchers, such as Yin (2003), Bauer and Gaskell (2000), Flick (2006), and Bryman (2008), who called for strengthening the autonomy and credibility of qualitative research by virtue of specifying “clear procedures and standards to identify good and bad practice” (Bauer and Gaskell, 2000, p.10). Any credible research, be it qualitative or quantitative, is framed by the rigorous and relevant applications of appropriate methods. Therefore, data collection and data analysis should not be confined to any formalised prescriptions, but rather aim for establishing a rationale within a given context in which research aims, questions, and methods-in-use correspond to each other. This chapter is devoted to providing a rationale, both theoretical and empirical, for the selection of the InCaS project as a case study in the field of IC. In the following paragraphs, I will dedicate myself to specifying the design, construction, and analytical methods of research (Steinberg, 2005). I will describe all phases of the inquiry considered, from gaining access to the research subject to the methods of data analysis. In so doing, I acknowledge that research activities both constitute and are shaped by the field under investigation. I divide this chapter into four parts: the first part elaborates the research context, i.e. the possibility of gaining access to the subject under study; the second part is concerned with research design – the dynamic relations between research theories, processes, and sampling strategy; the third part illustrates methods of data collection and

data corpus construction; the fourth part specifies the techniques, steps, and procedures for analysing data.

4.1 Research context

In December 2005, I was invited to join a project that combined IC research and practice within the European Union’s Sixth Framework Programme called “InCaS: Intellectual Capital Statement – Made in Europe”. InCaS was a multilayered programme spanning a period of 30 months, and its overarching goal was to enhance the innovation potential of European SMEs by means of activating their IC. The main body of the InCaS consortium was the Research and Technical Development (RTD) Group, which included 25¹² pilot SMEs, trainers, country coaches, research assistants and/or trainees, and IC experts. The whole project revolved around the implementation and evaluation of the InCaS methodology in the three annual phases within the project timeframe (June 2006 - December 2006; December 2006 to December 2007; December 2007 to December 2008). Figure 3 shows the composition of the RTD group.

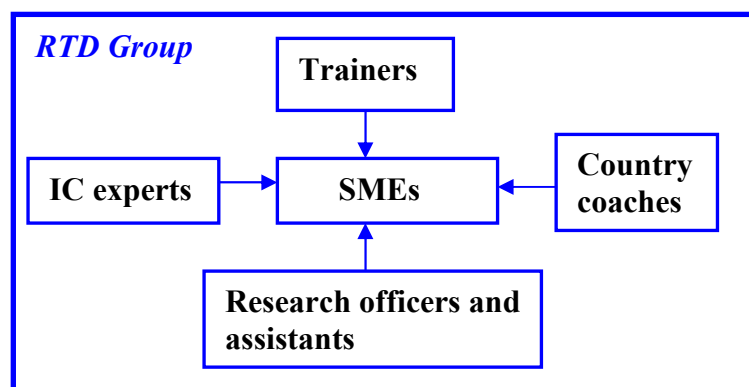


Figure 3: Constituents of the RTD Group of InCaS

More specifically, the 25 participating SMEs in InCaS came from 5 industries, namely, “machinery and equipment”, “electronics”, “retail and trading”, “business services and IT”

¹² 5 SMEs in each of the 5 InCaS core countries, including France, Germany, Poland, Slovenia, and Spain.

and “construction”, all of which had the great prospect of fostering the sustainable and innovative growth of the European economy (European ICS Guideline, p.3). The InCaS consortium appointed trainers and country coaches to implement the InCaS methodology with SMEs. These two groups played a key role in the implementation processes. Trainers were selected based on their professional merits in the general field of business consultancy, and they were asked to perform a set of functions in their collaboration with SMEs. Meanwhile, country coaches were nominated from collaborative universities for their thorough knowledge on IC research and practice. IC experts were those whose contributions to the field of IC were recognised internationally. Research assistants and trainees were composed of junior researchers who assisted trainers and country coaches in terms of collecting, analysing, and interpreting data.

In retrospect, my role as a research assistant within the RTD Group in the InCaS consortium enabled me to take part in the project throughout its full duration: upon joining the consortium, I was briefed the general information about this project. In particular, I attended the train-the-trainers workshops on the InCaS methodology, in which I got to know that the project was built upon the German model¹³ of IC practice. The German model had been applied and tested in German SMEs prior to the implementation of the InCaS project. This foundation appeared to give a warrant for the success of this project. However, the real implementation and evaluation processes were not as smooth as had been predicted. In order to identify the reasons of difficulties of implementation, and more importantly, to find a theoretical explanation to ground people’s various experiences of engaging with the InCaS methodology, I embarked on a journey of exploring the “innate value” of IC practice. Needless to say, I was privileged to access and collect data through

¹³ As I have explained in Chapter 2, the German model is famous for its focus on IC processes, and this feature distinguishes it from all the rest frameworks in use.

taking part in various activities that the RTD Group organised while performing my research assistant role. Figure 4 shows the key activities that I was involved in each of the three annual phases within the timeframe of InCaS.

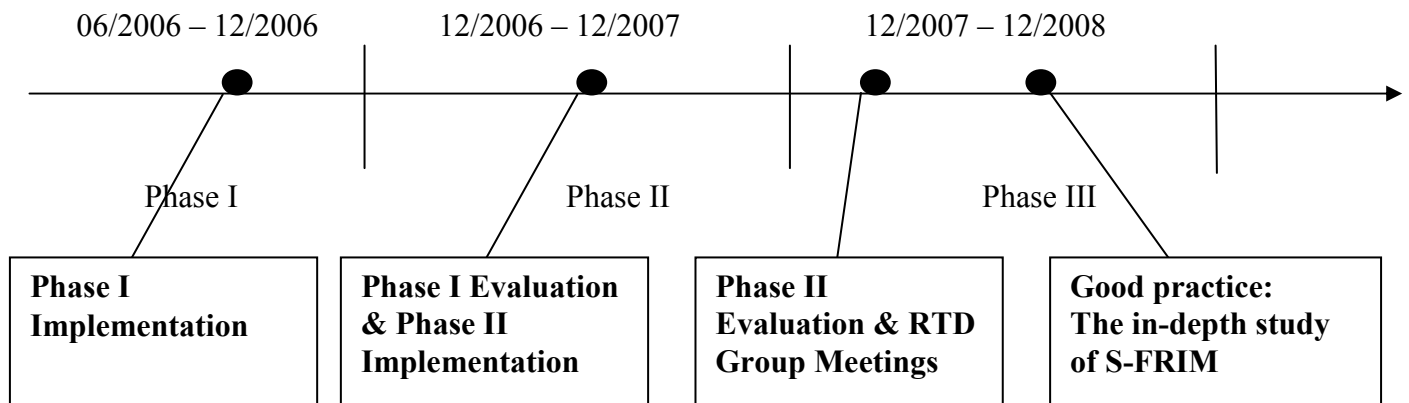


Figure 4: Timeline and major research activities of the InCaS case study

While the project was running, Phase I and Phase II shared a common focus: implementing the InCaS methodology in respective SMEs. In Phase I, the definition of IC in relation to SMEs' value creation processes was introduced, and the individual strengths and weaknesses of each IC factor was exploited. The potential of 'systematic IC management' was also mentioned. In Phase II, however, the interdependencies between IC factors, business processes, and strategic objectives as well as the meaning of managing IC systematically were explored in some SMEs. In addition, the Phase II implementation allowed more freedom to adjust the InCaS methodology according to the SMEs' feedback gathered from the evaluation workshops in each country at the end of the Phase I evaluation analysis. Subsequently, the results of those evaluation workshops were assembled and discussed in the InCaS Evaluation Conferences, in which I was able to observe and share my views with the rest of the RTD Group. InCaS Phase III was concerned with dissemination activities. At this stage, the RTD Group was very keen to know about the effect and the potential impact of the project. Therefore, a number of RTD meetings were organised to reflect on the problems and strengths of the original

methodology. Taking advantage of these opportunities, I conducted one-on-one interviews with trainers, country coaches, experts and other people who insisted that the improvement of the original InCaS methodology was essential. Toward the end of Phase II evaluation analysis, a participating SME (called S-FIRM) of InCaS was selected as a ‘good practice’ example for its positive experiences and “quick-win” accomplishments of implementation. I was fortunate to be part of the RTD-LSE team who took the lead in exploring and video documenting the case of S-FIRM’s stories.

4.2 The use of case studies in investigating approaches to IC practices

There are many different strategies in pursuing social science research. The case study is one of the most effective strategies for providing explanatory answers to the questions that deal with operational links over time (Yin, 2003, p.6). In other words, the case study method is particularly suitable to explore the “why” and “how” questions when an investigator wants to examine contemporary events within a real-life context. It is particularly useful when the researcher has little or no control of those events. It is also true that most case studies share a common feature - the boundaries between phenomena and context are not clearly evident. This commonality indicates that an investigator should cover contextual conditions deliberately since these conditions are pertinent to the event or phenomenon under investigation. In addition, the case study can deal with situations in which an investigator may be attracted by many variables at the same time, and thus multiple sources of evidence are commonly seen in case studies (*ibid*, p.7). Making effective use of multiple sources of evidence requires an investigator to work out the consistency behind various data sets, and as a general rule of thumb, the development of theoretical propositions can guide the investigator’s data collection and data analysis process. The above attributes of a case study distinguish it from laboratory experiments

(ruling out contextual conditions), histories (non-contemporary events), and quantitative survey methods (excluding a number of significant variables for the sake of verifying well-formulated predictions), and my own research of examining two paradigms in the field of IC that seem to capture all these attributes, be it the strengths or the concerns of the case study method.

4.2.1 The challenges of a qualitative single case study

In general, my research is a qualitative single case study with multiple embedded units of analysis, i.e. multiple sources of evidence are provided. The investigation was carried out within the time span of 30 months while the InCaS project was still running. Criticisms on an $n=1$ case study usually centre on the issues of validity (both internal and external) and reliability. To ensure the quality of my research, I will provide the following reasons to explain why the InCaS project fits nicely for my examination of the two paradigms in the field of IC. Additionally, I will specify why the single case that I chose needs to involve qualitative research.

First, internal validity should only be considered for explanatory studies, because these studies are supposed to establish a causal relationship, whereby certain conditions are shown to lead to other conditions (Yin, 2003, p.34). As for exploratory studies, internal validity is less relevant since no substantial causalities can be pre-determined before the actual research experiences give a revelation to the investigator. On the other hand, external validity is concerned with the generalisability of a study. Critics argue typically that a single case offers a poor basis for generalisation in comparison to survey methods. However, this comparison is misleading, since single case studies rely on analytical generalisation rather than statistical generalisation to achieve external validity. Analytical

generalisation aims at generalising a particular set of results to some broader theory so that the theory can be of value in identifying similar cases, whereas statistical generalisation emphasises that the same analytical results can be obtained as long as the same research procedure is followed. Thus, the selection of a single case should be justified by its theoretical relevance and explanatory power rather than by its statistical typicality or representativeness (Gomm *et al.*, 2000, p.98-100). Moreover, analytical generalisation may involve a kind of pattern matching between implications drawn from the theory and observations made in a local setting (Campbell, 1975), and it may also include systematic confrontations of rivalry explanations. These attributes certainly echo my own experiences, as shown when I unpack the details in section 4.3.

Second, reliability gives prominence to the operations of a study, such as the data collection procedures that can be repeated with the same results (Yin, 2003, p.34). The goal of reliability is to control or reduce the errors and biases of a study. As regards a single case study, reliability ensures that if a later investigator followed the same procedures and conducted the same case study again, he or she should be able to arrive at the same conclusions. It is worth mentioning that conducting the same case does not mean replicating the case results by doing so (*ibid*, p.37), since most single case studies are selected based on the consideration of uniqueness and sensitivity, replicating the results of such kind of cases by doing another case study is neither realistic nor desirable (Yin, 2003). Therefore, the central focus of acquiring reliability from a single case study is to document the procedures in a transparent and explicit manner. In practice, this can be achieved through clarifying operational steps and providing reflective thoughts on those steps, and I will provide details as such for my data collection process in section 4.3.

Third, as regards my specific research, qualitative research is both a 'suitable' and a 'rigorous' option. According to Flick (2006), the nature of qualitative research is inductive since it seeks to construct theories out of the empirical studies of local knowledge and practice. To 'understand' and 'interpret' why a learning paradigm in the field of IC is necessary and important and how to make this paradigm possible in practice, I need to construct a theory that will be of value when reflecting my empirical experiences. There are four things that I wish to elaborate: (i) the actual experiences of people who implemented IC reporting with SMEs; (ii) the texts that I obtained through in-depth exploration of the InCaS project; (iii) my own interpretation of the meanings of these texts; (iv) the critical reflections that I made throughout the research process. In contrast to quantitative researchers, I am less concerned with 'controlling' and 'generalising' my research findings (Bauer and Gaskell, 2000, Bryman, 2008). In the following paragraphs, I will make explicit the methods and approaches that I chose purposively for this study. In doing so, I wish to clarify the relationship between a researcher and the researched. As a rule of thumb, I am fully aware of the need of interpreting the subject of my study in accordance with the internal views of project participants. I respect the fact that their inner experiences of implementing the InCaS methodology are unique and authentic. If there were some counter-intuitive findings, I would definitely embrace them rather than preclude them from surfacing. This requires me to pay great attention to the details of the data generated in the exploration process. Without a doubt, all of the above objectives can be achieved only through a qualitative approach that deals with the complexity of a social phenomenon and its interpretation.

4.2.2 Empirical studies in the field of IC by using the case study method

Existing empirical research that has studied the approaches to IC research and practice can be categorised into two genres. First, the vast majority of research is concerned with formalising IC practice into a guideline. By virtue of case study methods, much of the ongoing work of this type has been summarised into a report provided by the European Commission under the acronym of RICARDIS¹⁴ (Leif and Kivikas, 2007, p.377). The ‘guideline’ centred studies are either too descriptive or too prescriptive: they simply informed readers of which IC model was used or which kind of information should be incorporated in the final IC reports; whereas the post-processes of implementing the guideline, the rationale of including/excluding certain information, as well as the impacts of implementation were hardly mentioned. The common deficit of this type of research is that human perceptions and experiences during a flowing process of IC were left unattended. Considering the variances of IC practice caused by different approaches, contexts, and experiences, it is perhaps “too early to define a common, standardised IC report guideline” (*ibid*). Second, by using comprehensive review methods, a number of researchers have suggested that different approaches to IC practice may lead to different results (Andriessen, 2001; Jørgensen, 2006; Mouritsen, 2006, Dumay, 2009). However, empirical studies along this line were rare. O’Donnell (2003a, 2004), Catusus *et al.* (2006), and Lonnqvist *et al.* (2009) are among a small number of researchers who tested the use of IC empirically so that this concept can be linked to strategising, organisational change, or business innovation. These researchers chose a single case study method insofar as it enabled them to tackle extremities; to observe a real impact in practice; and to display a complex network of relations within a preferably longitudinal time frame (Jørgensen, 2006, p.87). In line with the second genre, my own research will adopt a single case study by

¹⁴ RICARDIS is short for Reporting Intellectual Capital to Augment Research, Development, and Innovations in SMEs.

drawing on empirical evidences from a real-life, complex, and longitudinal project that combines both IC research and practice. Indeed, I seek to go beyond descriptive or prescriptive analysis by taking a distance from a 'guideline' centred perspective.

4.3 Preparing for data collection: principle and strategy

The strength of qualitative case study is that it does not have to follow a linear research process from theoretical assumptions to data validation (Yin, 2003). Instead, the investigator of a qualitative case study is allowed to go back and forth between theoretical sampling, theoretical coding, writing of theory, and investigation of the field. As Flick (2006, p.43) notes, "the close link between collecting and interpreting data on the one hand and the selection of empirical material on the other, unlike in the traditional linear method of proceeding, allows the research not only to ask the following question repeatedly but also answer it: how far do the methods, categories, and theories that are used do justice to the subject and the data". To reify this point, I shall elaborate on the principle and strategy that I employed for data collection.

Principle: triangulating for an in-depth understanding

The concept of triangulation refers to the rationale for using multiple sources of evidence. As Yin (2003, p.97) notes, a major strength of case study data collection, in comparison with other research methods, is the opportunity to use many different sources of evidence. The investigator is encouraged to collect information from multiple sources but aimed at explaining the same event or phenomenon by addressing a broader range of relevant issues. However, using multiple sources alone does not mean triangulation necessarily. Only if a case study is better supported through multiple sources of evidence than through a single source of evidence, triangulation would work. The key of maintaining a balance among

various sources of evidence is to familiarise oneself with the strengths and weaknesses of different data collection techniques. The appropriate employment of triangulation principle promises validity of empirical procedures and results and I will bear this point in mind when designing a strategy for data collection.

Strategy: a “plane-line-point” approach

The most vivid description of my data collection strategy is what I call a “plane-line-point” approach. The ontological foundation of this strategy is based on the Deleuzian (1987) philosophy of rhizomatic thinking - drawing a map of rhizomatic lines rather than a tracing: the task of this research is to capture events and connections that make a phenomenon stand out. Instead of relying on any *priori* structure, Deleuze argues that anything is mediated and transformed by its connections, and thus nothing has inherent power or attributes that should be defined as privileged inputs to analysis. For this reason, my assignment was to develop and find the connections that make a phenomenon under study (Mouritsen *et al.*, 2001, p.361) such as an actual practice. Meanwhile, I will pay particular attention to the variations, extensions, and transformation that the phenomenon may undergo throughout the discursive data collection and data analysis processes.

Specifically, the “plane-line-point” approach was invented to ensure the rigor of my data collection given the InCaS project was complex, longitudinal, and multi-layered: (i) a plane of voices sought to put together the direct experiences of people who implemented the InCaS methodology at the first two annual phases of the project; (ii) a line of thought focused on RTD partners, who had both practical and theoretical knowledge of IC practice. In particular, I paid attention to those who made critical reflections on the limitations of IC measurements and were determined to take IC practice to a new level of application; (iii) a

reflective point of application that documented the stories in/about a participating SME, through which RTD partners' discourses were examined. In the following paragraph, I will illustrate how I managed to take Flick's (2006) suggestion on board by working out the concrete criteria of selection (a priori definition); choosing and putting together empirical materials in a continuous process of collecting and interpreting data (theoretical sampling), and picking up events with special characteristics (case sampling).

Stage A: Tracing the "plane"

My research interest was guided initially by the motivation of understanding the various experiences of people who engaged in a variety of learning initiatives for the purpose of generating and developing IC in an organisational context. As a starting point, I faced the question of locating targets of observation in the implementation process of the InCaS methodology. I worked out two criteria to help me make up my mind, namely, (i) people who have direct experiences of implementing in their respective enterprises; and (ii) people who have an in-depth understanding of the InCaS methodology and its rationale. It turned out that the whole RTD group, including SMEs, trainers, country coaches, IC experts, and research assistants/trainees needed be given attention. This selection echoed the prominent status of the RTD group in the InCaS consortium. In choosing and putting together the empirical materials, I considered the possibility of obtaining data from the first two annual phases of the project. The SMEs evaluation reports coupled with trainers/country coaches' reflective summaries¹⁵ were assembled, circulated, and discussed in the InCaS evaluation conferences. On such occasions, I came to understand things that did or did not work on the ground. This batch of data provided a plane of mixed voices, which drew my attention to the various experiences and their interpretations of implementing the InCaS

¹⁵ The reflective summaries were a collective effort between trainers and country coaches, yet it were trainers who prepared the documents in which country coaches' contributions were recognised through their direct quotations. To simplify the name, I used "trainers' reflective summaries" below.

methodology. From there, I was able to tell the common problems, which were identified by SMEs and others, facing the InCaS methodology. These problems echoed the key findings of my previous literature research.

Stage B: Tracing the “line”

After the preliminary analysis of SMEs evaluation reports coupled with trainers’ reflective summaries in the first two annual phases of the InCaS project, I began to notice the divisions of opinions within the RTD group. Instead of implementing the InCaS methodology faithfully, some researchers began to probe a critical yet constructive approach that encouraged a learning-hinged process, which led eventually to IC generation and development in an organisational context. The ‘critical’ aspect was associated with the common problems identified with IC measurement results mainly. In reflection of these problems, the InCaS RTD teams were among the first who perceived sensitively the need for making adjustments to the InCaS methodology as well as its implementation focus. In Phase II implementation, these RTD teams put their critical yet constructive thoughts into practice and achieved different results. On such occasion, I sensed the need to conduct in-depth interviews with people who initiated this critical line of thinking and then operationalised it in practice. To understand the “constructive” aspect, however, I paid special attention to those ‘eureka’ moments in which trainers, country coaches, and their collaborating SMEs all acquired positive experiences from the InCaS project.

Stage C: Tracing the “point”

At a conceptual level, the in-depth interviews that I conducted with RTD members helped me streamline the components of a critical yet constructive approach to IC practice. Yet, I needed empirical evidences to verify if these components actually existed in practice and in

which order they were bonded together. Following Jørgensen's (2006) suggestion to identify special characteristics of IC practice, I reviewed the SMEs evaluation reports, trainers' reflective summaries, as well as the interview transcripts. It turned out that one Spanish SME, called "S-FIRM", experienced significant changes and achieved many positive results during the Phase III evaluation analysis of the InCaS project. These achievements were not only picked up by Spanish trainers, country coaches, but also noted by the firm's senior management, employees, and other stakeholders. In view of the positive energies and great enthusiasms coming out of the process of implementing the InCaS methodology in S-FIRM, I decided to make S-FIRM an example for examining the components of a critical yet constructive approach to IC practice. I considered this emerging approach as visible evidence for a learning paradigm that I explained in theory in Chapter 3. Parallel to the dissemination activities in Phase III InCaS, I was also able to immerse myself in S-FIRM's stories by analysing 6 group discussions conducted with S-FIRM management, employees, stakeholders, as well as trainers and country coaches.

4.4 Data collection: gathering the evidence

To operationalise my data collection strategy, I followed Yin's (2003) suggestion of constructing data corpus by combining different sources of evidence. According to Bauer and Aarts (2000), "corpus construction" refers to a set of selection procedures that typify the unknown attributes in a social space. It has its origin in linguistic study, which initially meant the inclusion of a body of complete collection of texts in the open system of language (Bauer and Gaskell, 2000, p.20- 23). French sociologist, Roland Barthes (1915 – 1980) emphasised that the notion of corpus should be extended to any materials, not limited to texts. Barthes also claimed that the selection of materials is less important than analysis, since any selection is purposively done and thus inevitably arbitrary to some

extent. Nevertheless, in-depth analysis within a corpus would account for all variations of that corpus and therefore bring meanings out and hold them together. Table 2 gives an overview of the corpus construction for my thesis on the ground of a qualitative single case study. I put together four sources of evidence, namely, documents, individual interviews, focused group discussions, and participant-observation.

Table 2: Corpus construction for a qualitative single case study in the field of IC

Research focus	Source of evidence	Research materials	Level of analysis
The problems underneath the measuring paradigm identified by SMEs	Documentation	Qualitative survey questionnaires covering 25 SMEs and the InCaS Phase I Implementation Guideline	A <i>plane</i> of mixed ideas
The aspects of a learning paradigm in IC practice	Individual interviews	15 individual discourses from selected members of the RTD group	A <i>line</i> of critical yet constructive thoughts
Making sense of a learning paradigm in an individuated case	Group discussions	6 group-level discourses in S-FIRM	A <i>point</i> of successful application

4.4.1 Documentation

Documentary information is widely used within case study investigations (Yin, 2003, p.85). This type of information can take many forms, such as minutes of meetings, written reports, proposals, and project records. These and other type of documents are useful even though they are not always accurate and may not be exempted from bias (*ibid*, p.87). As Bryman (2008, p.523) notes, “documents can be used as a platform for developing insights into the processes and factors that lie behind divergence”. The strengths of documentation include but are not limited to: (a) stability – can be reviewed repeatedly; (b) unobtrusiveness – not created as a result of the case study; (c) broadness – long time span, many events, and many settings. At the same time, many people have been critical of the potential over-reliance on documents in case study research, and the commonly mentioned weaknesses associated with documentation include incompleteness of information and potential

unknown biases of the author. Being aware the strengths and weakness of documentary information, I will provide my justifications for using qualitative survey (SMEs evaluation reports coupled with trainers' reflexive summaries) and administrative document (InCaS Phase I Guideline of Implementation). This will be followed by the specification of the procedures of collecting these documents.

4.4.1.1 Qualitative survey and administrative document

The reason of including a qualitative survey (which was called 'InCaS SMEs evaluation form' in practice) was that the high quality of these documents in terms of diversity, openness, and richness distinguished them from run-of-the-mill documentary materials. Qualitative survey is the study of diversity other than distribution in a population by means of engaging a sample of population members in either structured or unstructured discussions. The focus of qualitative survey is to understand people's experiences and interpretations (Fink, 2003, p.61; Jansen, 2010). Take the InCaS evaluation workshop for example, with the help of their trainers all SMEs were required to complete an evaluation form on the spot, and their various experiences of implementing the InCaS methodology were captured fully in their individual answers. On the one hand, the questionnaire was designed in the form of inviting open-ended questions. In doing so, unrestrained or free responses were encouraged. On the other hand, both a general assessment¹⁶ of the InCaS methodology and a step-by-step exploration of the implementation processes were operationalised through inquiring about SMEs' first-hand experiences. Appendix I is the template of this questionnaire (evaluation form), through which the *object* (InCaS methodology), *dimensions* (identification, measurement, reporting) and *categories* (IC

¹⁶ The general assessment was done twice in each of the first two phases of the project, and comparison between the assessment results helped me make an important decision regarding whom to interview, see more details on section 4.4.1.2 in this chapter.

definitions, categories, factors, indicators, reports) of this study, particularly in relation to the measuring paradigm can be explored (Jansen, 2010, *italic emphasis added*).

The InCaS Phase I Implementation Guideline, as a type of administrative document (Yin, 2003, p.79), was incorporated in the data corpus for the purpose of comparing it with the findings of the qualitative survey. This Guideline was prepared by a group of EU delegated IC scholars before the project was implemented. It provided specific details about the theoretical rationale of InCaS, from which observations and inferences (*ibid*, p.81) can be made with regard to the ontological and methodological foundations of the project framework. Since the InCaS project was believed to represent the state-of-the-art application of IC practice (European ICS Guideline, 2008, p.3), the contrast between its original project proposal and the results of qualitative survey can be understood as a mainstream ideal versus its realistic variances. In fact, the gap between these two motivated further investigation (by means of conducting individual interviews and group discussions) on the need for establishing a learning paradigm in the field of IC.

4.4.1.2 Procedures of document collection

The Guideline was shared within the InCaS RTD teams since the beginning of the project. As regards the qualitative survey, representatives of the 25 SMEs in 5 groups were assembled together in their respective resident country, where a one-day evaluation workshop was held at the end of each annual phase of InCaS. This also means that whenever SME representatives encountered a problem in the evaluation forms, they could get clarifications immediately from their trainers. The processes of completing these evaluation forms and the discussions between trainers and SMEs representatives were either audio or video recorded. Those recordings were consulted frequently when

ambiguous answers appeared on the paper. In addition, the procedure and requirements of the evaluation workshop were specified clearly in the beginning of the evaluation form. More importantly, trainers' and/or country coaches' reflective summaries attached to these reports contained detailed information that completed the evaluation reports: their collective experiences in situ gave a big picture of the overall implementation process and its potential impact.

I was able to obtain the SMEs evaluation reports and trainers' summaries during the RTD Group meetings in London, December 2006 (Phase I) and in Paris, October 2007 (Phase II). Thanks to internal information sharing and exchange, I collected these documents together. Table 3 shows the details of the documentary information that I included in my data corpus. Altogether these evaluation forms contain more than 110 A4 pages information, which provided rich materials for my preliminary analysis. These documents gave me a clear vision of what was going on during the implementation process of InCaS in its two consecutive phases and the real-life experiences narrated by SMEs, trainers, or country coaches were unobtrusive and wide-ranging. Bearing in mind the weaknesses of documentation, however, I followed the suggestion made by Bryman (2008) and Yin (2003): to deal with documentary information with caution, I paid attention to the specific purposes of producing these documents in the first place and I treated them more as clues for further investigation than as definitive findings. Additionally, I seized the opportunities to talk with trainers and SMEs representatives in the forthcoming events that the RTD teams organised. In particular, the following interviews scheduled with the various InCaS research partners also became a good occasion for me to clarify or discuss any doubts that I had with regard to these questionnaires.

Table 3: InCaS participative SMEs

Country	Type of industry	Number of employees	Years on the market	Coding
Spain	Electronics	120+	23	ES1
	Business services and IT	100+	19	ES2
	Machinery and equipment	200 ¹⁷ +	56	ES3
	Electronics	200+	9	ES4
	Construction	75	17	ES5
Germany	Business services and IT	20	8	DE1
	Electronics	150+	22	DE2
	Business services and IT	20	13	DE3
	Construction	50+	8	DE4
	Machinery and equipment	111	25	DE5
France	Business services and IT	3	3	FR1
	Business services and IT	400+	26	FR2
	Machinery and equipment	250+	62	FR3
	Business services	14	9	FR4
	Business services	62	11	FR5
Poland	Business services and IT	5 (permanent)	4	PL1
	Retail trade	107	15	PL2
	Machinery and equipment	45	13	PL3
	Business services and IT	10 (permanent)	15	PL4
	Business services	73	16	PL5
Slovenia	Machinery and equipment	40	18	SL1
	Machinery and equipment	29	17	SL2
	Machinery and equipment	25	17	SL3
	Construction	83	14	SL4
	Electronics	200+	18	SL5

4.4.2 Interviews

Most case studies are concerned with human affairs (Yin, 2003, p.92), which should be interpreted and reported through the eyes of their beholders. Interviews, in this regard, become an essential source of case study information. In this section, I specified the general considerations, the procedures, and the tools for constructing my data corpus based upon individual interviews.

¹⁷ The implementation of the ICS methodology was in the engineering department of this firm, consisting of 18 employees.

4.4.2.1 General considerations on interviewing

As Yin (2003, p.89) notes, one of the most important sources of case study information is that of interviews. Most interviews are guided conversations rather than structured queries. In other words, although an investigator wants to pursue a consistent line of inquiry, the actual stream of questions appeared in a case study interview seems to be fluid. To a certainly extend, both interviewees and interveners have to go with the flow in order to maintain a meaningful dialogue (Bryman, 2008). The obvious strengths of interviews include: (i) focusing directly on case study topic; (ii) offering special insights with perceived casual inference to an investigator. At the same time, interviews critic claims that biases can be produced during interview processes due to poorly constructed questions and interviewees' inaccurate recall or narration. With these pros and cons in mind, I sought to make the most of interviews by selecting a suitable interview type (semi-structured interview) and preparing a feasible interview instrument (topic guide).

4.4.2.2 Procedures of collecting interview materials

Semi-structured interview is a focused interview that can be distinguished from highly structured interview on the one hand and the less structured ongoing conversation of ethnography on the other hand (Yin, 2003, p.90; Bauer and Gaskell, 2000, p.38). The advantage of semi-structured interviews is that it allows an investigator to focus on his or her research question by constantly referring to a topic guide, while at the same time the investigator is also able to attend to the interviewees' personal style of presentations by allowing for *ad hoc* discussions (Flick, 2006, p.92). Using semi-structured interviews to inquire about interviewees' life world is a starting point for most social scientists (Bauer and Gaskell, 2000, p.39). General steps in conducting semi-structured interviews are: (1) selecting respondents; (2) conducting interviews.

Guided by the principle of primarily selection (Flick, 2006) as well as my own research interest in exploring the innate value of IC practice, I took stock of existing data before conducting interviews with RTD members: the qualitative survey covering 25 SMEs as well as the attached reflective summaries from trainers and/or country coaches provided an important cue for the selection of respondents. The decision was informed mainly by a set of statistics derived from the results of the general assessment in the survey questionnaire: in Phase I evaluation, 18¹⁸ out of 25 SMEs described their experiences with InCaS as ‘somewhat useful’¹⁹, yet none of them considered their experiences ‘very useful’; in Phase II evaluation, however, 22²⁰ out of 25 SMEs considered their experiences ‘somewhat useful’, and 4 of them found their experiences ‘very useful’. Amongst these four, two SMEs came from Spain, one Germany, and another France. Therefore, I decided to interview trainers and country coaches in these three countries with a special focus on their constructive experiences of working with SMEs, who acknowledged the value of implementing the InCaS methodology in their respective enterprise. Meanwhile, some IC experts and research assistants were also taken into consideration due to their constructive suggestions of improving the InCaS methodology on various occasions, e.g. InCaS Evaluation Conferences in Paris and Brussels. There were about 16 people in the InCaS Consortium who matched to the aforementioned interview criteria that I worked out. Among them, 15 persons accepted my interview proposal and their voices together constituted a critical yet constructive line of thought on IC practice. By taking advantage of

¹⁸ See the footnote below.

¹⁹ The evaluation report contained many questions to assess SMEs’ experiences with InCaS. To distinguish the degree from ‘somewhat useful’ to ‘very useful’, three questions were asked: (i) overall how satisfied are SMEs with the ICS results; (ii) would SMEs continue using InCaS methods in the future; (iii) would SMEs recommend InCaS to other firms. If any of the above questions were given a ‘yes’ answer, then SMEs’ experiences were considered ‘somewhat useful’; when there were three ‘yes’, their experiences were rated ‘very useful’.

²⁰ This is not to say that the rest SMEs did not find InCaS any useful. The basic principle of calculation herein was based on a definitive ‘yes’ answer, if some SMEs did not give a straightforward ‘yes’ or their answers were incomplete, they would not be included in the category of ‘somewhat useful’ or ‘very useful’.

RTD meetings in Phase III, I conducted interviews in and between these meetings, including face-to-face and telephone interviews.

Most face-to-face interviews were conducted in those RTD meetings, whereas telephone interviews were arranged due to the practicalities that arose out of tracking hard-to-reach respondents. Telephone interviews responses were little different to the kind of responses one may get by asking questions in person (Bryman, 2008, p.457). All of the interviews followed the same topic guide, and respondents were sent their interview transcription afterwards via email. I did this for two reasons, (i) accuracy check: I asked all the respondents to have a look at what they said and they were encouraged to raise any question regarding the transcription; (ii) clarification: if I spotted any inconsistencies in the transcription and could not derive an answer from just reading the text, I made use of the opportunity to ask my respondents to clarify the points. All interviews were conducted in English and were audio-recorded after obtaining the permissions from the respondents. Respondents were informed about their right to withdraw from the research at any point they like. In the middle of the interview process, I tried to reduce the times that I interrupted my respondents' train of thoughts. However, when a direction was obvious deviating from my research interests, I prompted them to move onto the next question. The duration of the interviews was between 29 minutes and 88 minutes, with an average length of 50 minutes. Table 4 summarised the details of interviews materials.

Table 4: Semi-structured interviews with InCaS RTD teams

Type	Role in InCaS	Code ²¹	Countries ²²	Time Frame
Face-to-face	Trainer	JJ	Spain	12/07 - 05/ 08
	Country Coach	JV	Spain	
	Country Coach	BM	Spain	
	Research Assistant	EC	Spain	
	Research Assistant	MR	Spain	
	Research Assistant	AVP	France	
	IC Expert	MT	NA	
Telephone	Country Coach	MW	Germany	01/08 - 06/08
	Trainer	ME	Germany	
	Trainer	DF	Germany	
	IC Expert	LF	NA	
	IC Expert	MB	NA	
	Trainer	JFM	France	
	Trainer	CL	France	
	Country Coach	PH	France	

Topic guide

The topic guide is a powerful instrument that affects the success of a study. Any topic guide is designed to capture the aims and objectives of the research. As regards semi-structured interviews, the topic guide in use should not be an extensive series of specific questions, but rather a set of paragraphs headings (Bauer and Gaskell, 2000, p.40). With my research question in mind, I came up with a topic guide (see Appendix II) based on my observation of a critical yet constructive approach to IC practice. I determined the main categories for discussion, but I also left room for the flow of conversations via open-ended questions. Three main categories included in the topic guide were: the individual experiences of implementing InCaS; in comparison to Phase I implementation, the changes or adjustments RTD members initiated during Phase II implementation; and the components of a learning paradigm in the field of IC. All these categories were derived from my previous investigation and a critical examination of relevant literature. I used the topic guide as a prompt when my mind went blank during the interview (Steinberg, 2005),

²¹ The codes are the initials of the interviewee's names.

²² The countries of the respondents only refer to their roles, such as country coach or trainers, assigned in the InCaS project, not necessary the same as their nationalities.

however, I did not assume the categories covered in the topic guide were fixed. Rather, I went with the flow of conversations when ideas evolved in a direction giving more senses. I conducted a pilot interview with a colleague in a similar position of mine in the InCaS project, after the interview, I refined the topic guide by taking her suggestions into consideration, such as adjusting the sequence of some questions, simplifying the language used in forming a question.

4.4.3 Group discussions

Similar to individual interviews, collecting data in a collective setting is particularly useful for exploring people's knowledge and experiences that can be used to examine not only what they think, but also how and why they think in a particular manner (Bryman, 2008). In the following paragraphs, I shall specify the general considerations, selection criteria, and procedures of conducting 6 group discussions in S-FIRM - a SME participated in the InCaS project.

4.4.3.1 Overview and selection criteria

According to Gervais (1997), the difference between focus groups and group discussions should be understood at a concept level: focus groups usually represent an instrument for market research, while group discussions are concerned with the value of emergent points of views through a setting where multiple participants are accommodated. In this regard, group discussion seems to be a theoretically and a methodologically more appropriate term for social science enquiry. In my case, I used group discussion as an opportunity to explore the homogeneity and heterogeneity of the ideas circulating in or held by a collective of people (Nolas, 2007, p.102). As Flick (2006) points out, group discussions reveal the way in which options are produced, expressed, and exchanged more naturally than in an isolated

interview settings. A total of six group discussions were conducted with S-FIRM management, employees, stakeholders, as well as trainers and country coaches. Given the nature of a single case study, the selection of respondents was chosen under the following criteria: (a) people who were part of the implementation process of InCaS (including Phase I and Phase II implementation); (b) people who took part in the “Knowledge Transfer Meeting” and/or the follow-up events with clients and suppliers hosted by S-FIRM. This meeting was one of the actions that S-FIRM took as a result of InCaS Phase II implementation. Table 5 lists the participants in the group discussions.

Table 5: Participants in the group discussions in S-FIRM

No.	Code ²³	Roles of respondents	Voice	Group
1	JJ	Trainer, InCaS RTD Group	Consultants	G1
2	BM	Country Coach, InCaS RTD Group		
3	JV	Country Coach, InCaS RTD Group		
4	SS	Purchasing, EBU	Employees in EBU	G2
5	FB	Mechanical technology Support, EBU		
6	SL	Commerce, EBU		
7	JD	Electronic technology support, EBU		
8	SC	Project manager, EBU	People from other BUs	G3
9	FM	IT programmer, EBU		
10	VF	Metal, former employee of CBU & collaborator		
11	AG	Environment, former employee of ESD & collaborator		
12	AM	Aluminium, CBU	Suppliers	G4
13	JM	Supplier, Manager of Stem		
14	MM	Supplier, Managing Director of Atotech	Clients	G5
15	AJ	Client, Director of Chrom		
16	JB	Client, CEO of Anodizing Technology	Senior Management	G6
17	JA	R&D Director of S-FIRM		
18	RC	Vice President of S-FIRM		
19	RP	General Manager, EBU		
20	CC	Financial Director of S-FIRM		

4.4.3.2 Procedures of collecting group discussion materials

All the group discussions were conducted in Barcelona where S-FIRM is situated. Due to the bilingual nature of this case study, interviews were performed in English and Spanish.

²³ The code is the initial of a person's name.

For those parts where Spanish was employed, two of my colleagues from the LSE-RTD teams who are native Spanish speakers translated the texts for me. Later, when I analysed these texts, I asked a professional translator from the LSE to check the translated texts. All in all, six group discussions were conducted in S-FIRM's Engineering Business Unit, and all of these discussions centred on the "the experiences of implementing InCaS methodology". Since my expectation was to obtain verification for a learning paradigm that stood out theoretically, I used an adapted version of the topic guide that sought to generate stories inherent to participants' experiences. This adapted topic guide can be found in Appendix III. These group discussions took place during several formal or informal visits to S-FIRM within a time span of 36 days starting from 9th June 2008 to 14th July 2008. All of the group discussions were video recorded with the permission of participants and the average length of these discussions was 1 hour 44 minutes of film footage. None of the group discussion participants was considered vulnerable since they all had complete capacity to understand the nature of interview and were completely free to take part in. It turned out that all of the participants showed a good disposition throughout the interview processes, and no information was withheld from them.

4.5 Data analysis

One recurring statement says that qualitative research differs from quantitative research based on the iteration of data collection and analysis in one project (Jansen, 2010). In this section, I detailed the analytical procedures and skills that I applied to my research, including thematic analysis and reconstructed story analysis.

4.5.1 Taking a distance from the focus of the InCaS project

As a reflection of the tension between my role of being a research assistant in the InCaS consortium and an independent researcher in my own right, I sought to achieve critical distance from the field of practice in two ways: first, by choosing a different research focus to that of the InCaS project; second, by creating a time delay between data collection and the analysis stages of the research (Nolas, 2007, p. 106). To balance my roles, on the one hand, I engaged in and committed myself to various activities that InCaS consortium organised while the project was still running, during which, I decided to go with the flow of the field, temporarily leaving behind my suspicions and doubts. On the other hand, in time periods outside the enactment of participation, I reminded myself constantly to keep a detached and critical eye. This was done through paying special attention to the divergences of opinions within the InCaS consortium. Going back and forth between literature review and preliminary analysis also deepened my understanding of those divergences. In doing so, I was able to take a critical distance from the focus of the InCaS project in terms of increasing the buy-in of its methodology.

4.5.2 Interpretive thematic analysis

(a) Key issues of the analysis

In order to extract themes from discursive data, researchers have to be clear about two things: (i) the traces of themes that he or she looks for; (ii) the consistent principles that he or she would comply throughout the analysis. As to the first point, theoretical sampling and my own research experiences in the field served as the compass that guided me through the process of coding. With regard to the second point, I asked myself to always bear in mind that the aim of data analysis is about generating data that reflect the diversity of opinions in a particular social grouping. This diversity is expressed by both the various views of a

single respondent and differences between members of a given social group. As Said (1983) notes, the role of an intellectual is to theorise the world in a way that would render alternative perspectives, which could inform people a new way of being. In the same vein, I also agree with Billig (1996) that good qualitative research should open people's eyes insofar as helping them understand the complexity of the world and their individual lives. However, this kind of complexity must be revealed carefully through continuous dialogues between researchers and their subjects under study. The challenge of doing so is to come up with meaningful research findings that capture the dynamics of these dialogues, in other words, to depict the realm of study as process rather than product.

(B) Key stages

Becoming familiar with the procedure of coding was a discursive practice. In general, I followed through the six steps of the network thematic analysis proposed by Attride-Sterling (2001), however, for practical reasons, I blended several steps and summarised them into a three-stage framework. Specifically, Stage I corresponds to Attride-Sterling's "Step 1 Coding Materials"; Stage II entails "Step 2 Identification of the Themes" and "Step 3 Construction of the Thematic Network"; Stage III includes "Step 4 Description and Exploration of the Thematic Networks" "Step 5 Summary of the Thematic Network" and "Step 6 Interpretation of the Patterns".

Stage I: Coding

I had two batches of data in need of thematic coding: the first batch consisted of documents collected from the InCaS Phase I and Phase II evaluation workshops in 5 countries. In the

evaluation workshops, SMEs representatives from 5 companies²⁴ discussed their encountering experiences with the InCaS methodology. First, they were allowed time to recall their positive or negative experiences in accordance with the process model (five steps plus prearrangement) specified in the InCaS methodology, and then they were each invited to report their experiences. Trainers used a prepared evaluation form to record SMEs' comments. After the evaluation session, trainer and/or country coach supplied their reflective notes regarding the evaluation workshop as well as their experiences of implementing InCaS with SMEs. In their notes, they did not follow any linear structure, but summarised the points that they believed to be significant. A caveat must be given: although the requirement of evaluation was the same, the quality of the reports was varied owing to trainers' skills, experiences, and habits of documenting. For instance, the Spanish team (trainer and country coach) excelled at putting down every single detail of the discussions between SME representatives and other members who presented the workshop. They provided many direct quotations from SME representatives and even attached extra notes to explain the workshop proceedings (such as when and why the workshop session was interrupted). By contrast, the Slovenian team provided bullet points when noting SME representatives' comments.

Despite these differences, I acknowledged the overarching goal of these reports was to reflect the implementing experiences of SME representatives, trainers, and country coach. Therefore, in the first round of coding, I categorised their experiences into "positive", "negative", "uncertain" and "forward looking". The first three were self-evident, while the last one referred to the wishes, suggestions, or proposals that people mentioned in the evaluation workshops. The reason that I adopted these very general categories was to avoid

²⁴ In only 2 cases (German Phase II and Spain Phase II), representatives from one SME were missing, however, they all sent notes that summarised their experiences to trainers in advance.

what Bauer and Gaskell (2000, p.148) warned “pre-determined categories might neglect the rare and the absent”. These categories not only reflected the theoretical framework that I had in mind, but also left space for unexpected themes and surprises. By virtue of this exercise, I derived a small group of thematic codes that seemed to be able to account for a large part of the data. This was manifested by the fact that (i) the codes strongly fit in with particular paragraphs, and (ii) the codes tied materials together throughout the 20 documents. However, before I taking notes down on these themes and highlighted the corresponding quotations with strong explanatory power, I double-checked the thematic codes by comparing (a) country differences; (b) differences between comments from SME representatives and comments from trainers/country coach. Herein, my aim was not to reconcile, but “acknowledge” the nuances so as to avoid neglecting or misinterpreting.

The second batch of data came from the semi-structured interviews that I conducted with members of the InCaS consortium. As mentioned previously, a topic guide was developed in order to ensure the key aspects of the research were addressing during the interviews. The aim of these interviews was two-fold: on the one hand, interviewees were asked their perceptions, in terms of how and why, on the “successful” or “unsuccessful” aspects of implementing InCaS. On the other hand, they were asked to think of which conditions, factors might affect or shape the “successful” aspects of implementation. The coding work, therefore, overlapped partially with the categories developed for the first batch of data. And yet, new categories with reference to relevant literature were added to the existing framework, including “knowledge/information”, “action/practice” and “emotions/feelings”. These four categories helped generate a few more thematic codes, which helped me make sense of the vast majority of interview discourse. Later on, looking within each of these categories, I mapped out the recurrent themes and paid attention to the subtle differences

amongst individual expressions. The comparative dimensions used were: common, rare, interesting/new, and blank. Appendix IV shows the coding frames.

Stage II: Refining and arranging recurrent themes

I loaded the secondary data as well as the interview transcripts into ATLAS.ti in order to extract systematically the thematic codes that render meanings to my research. ATLAS.ti is one of the computer software programmes used frequently in qualitative data analysis. The programme provides tools that enable the users to locate, code, and annotate findings in primary data sets, to weigh and evaluate their importance, and to visualise complex relations between processed data. I chose ATLAS.ti over other software packages, such as Nvivo, NUD*IST, mainly because ATLAS.ti is compatible with the grounded theory and it “offers a graphical interface function drawing on ideas from semantic memory theory” additionally (Bauer *et al.*, 2000, p.55). To put it simply, ATLAS.ti has some kind of co-occurrence reporter that allows researchers to display their coding groups and instances visually. Although the software saved researchers a lot time to handle large corpus of data, I have to agree with Bauer and Gaskell (2000) that “it cannot do the intuitive and creative work that is an essential part of qualitative analysis” (*ibid*, p.55). Hence, I tried to free my mind by going beyond the structural relations (casual, associative etc.) predetermined by ATLAS.ti, instead, I began a new round of analysis with special emphasis on refining and arranging recurrent themes.

In order to establish coherent groupings, I re-read the materials and let ATLAS.ti count the frequencies of extracted themes. More than that, I also focused my attention on the theoretical grounds when appropriate. According to Attride-Sterling (2001), each grouping should result in a distinct global theme, supported by discrete organising and basic themes.

Global themes are highly condensed themes that encompass the overarching symbolic meaning of the data as a whole. The aim of finding global themes is to identify the final tenet of the thesis. As such, global themes govern organising themes that produce an argument or an assertion together (Attride-Sterling, 2001, p.389). Organising themes are a middle-range grouping that sets basic themes into clusters of similar issues. They dissect the main assumptions underlying a broader theme and therefore provide more details to account for the global themes. The basic themes have the most intimate relations with textual data. They are simple demonstrations of what is going on with the text, yet a single basic theme is meaningless, since it needs to be interpreted within the context of other basic themes. Taken together, basic themes support an organising theme. To identify the hierarchy underneath my themes, I selected themes that were (i) independent enough to be defined in its own right; (ii) broad enough to encapsulate a number of ideas (*ibid*, p.389-91). In total, I obtained 8 organising themes and 26 basic themes throughout the entire corpus of textual data.

Stage III: Analysis and Interpretation

Analysis and interpretation are a systematic effort that links data (texts) to meanings (theories). With the help of ATLAS.ti, I was able to visualise two thematic networks side by side. According to Attride-Sterling (2001), the ultimate purpose of analysis and interpretation is to present the thematic networks succinctly and explicitly to the audience. Hence, I re-examined the principle themes hinted at the previous stage and recorded the interpretations of each theme. I read them through and imagined myself as the layman – when the meanings of the principle themes stood in their own rights, I stopped refining them. During this process, I was also able to question my research topic and the theoretical interests underpinning it. Specifically, the first thematic network I extracted from the

textual data answered the question “why it is necessary and important” to highlight a learning paradigm, whilst the second thematic network explained the possibility or the conditions of making the learning paradigm happen in practice. All in all, the 27 basic themes, from different angles, helped clarify the research questions that I have in mind. This resulted in my confidence in presenting my findings in chapter 6, 7 and 8.

4.5.3 Reconstructed stories analysis

After analysing the survey questionnaires, original project proposal, and 15 in-depth interviews, I felt the increasing need to verify my preliminary findings (process elements of a learning paradigm) through analysing in great detail a case that took place on the ground. The group discussions conducted in S-FIRM seemed to be a good starting point. However, I noticed that there were not only stories “in” S-FIRM, but also stories “about” S-FIRM. The difference between the two lies in the fact that the narrator of this story does not have to be an employee in S-FIRM. For me, the challenge and the meaning of reconstructing the stories about S-FIRM are the same: how can I capture the essence of a learning paradigm through telling a consistent story whilst reserving the original flavour of my data? More than 40 years ago, Roland Barthes (1915-1980), the French sociologist announced, “the narratives of the world are numberless, narrative is first and foremost a prodigious variety of genres, themselves distributed amongst different substances” (Barthes, 1983, p.79). His announcement illustrated the fact that narrative is widely present in any form of human activities and carried by a variety of articulated language, but more importantly, it confirmed the possibility of using narrative as a mode of knowing (Czarniawska, 2008, p.10). To acquire a new mode of knowing, as opposed to “knowing from others’ eyes”, I become actively involved in the reconstruction and reinterpretation of the stories in and about S-FIRM.

4.5.3.1 Reconstructing stories

The reconstructed stories contained two different perspectives. First of all, how did people in/around S-FIRM recall their experiences of taking part in the InCaS project? Second, what was the repercussion after implementing the InCaS methodology in S-FIRM? In order to tell a smooth story without many “jump cuts”, on the one hand, I paid attention to what Spradley terms “the 9 dimensions of social situations” (Flick, 2006, p.141). Spradley’s framework anchors an order to the stories and I made sure some of these dimensions were considered, such as actor, activity, and event, in reconstructing the stories. This was because the aim of the reconstruction was to look for traces that may or may not echo the elements of the learning paradigm. The signposts (subheading) of the stories followed the coding frame that I derived from previous data exploration, whereas the 9 dimensions were only referred to where possible. As mentioned earlier, the coding framework consisted of two thematic networks, consonant with the necessity, importance and possibility of constructing a learning paradigm in the field of IC. Consequently, the reconstructed stories were expected to reflect this coding frame.

On the other hand, as the author of these reconstructed stories I appreciated the principle of following the art of fiction (Imas, 2004). The main idea of this principle is to follow what Eco (1994, p.1-2) argues in his book *Reflections on the name of the rose* that “a narrator should not supply interpretations of his work; otherwise he would not have written a novel, which is a machine for generating interpretations”. I assembled project artefacts (proposal, reports, summaries), transcribed individual interviews, transcribed and translated group discussions (major data input), plus my own experiences of engaging in various stages of the project, to guide the process of reconstructing S-FIRM’s stories. I did not follow a systematic way of writing them. Rather, I followed the suggestions of post-modern

precursors like, Shotter, Bakhtin, and Barthes, to weave together novelty, creation, as well as prospective-relational stance to people by interweaving different dimensions of social situations. Herein, people are seen as providing different possible relational opening and opportunities of a poetic kind. As Bayer and Shotter (1998, p.38) emphasises, “we do not write about, talk about or categorise them, but fully engage ourselves with them, and with them we create something different something new”. With this notion in mind, I seek to stimulate my readers’ imagination: a re-interpretation of a critical yet constructive approach to IC practice by presenting them with multiple voices. My aim is to create stories guided my search for meaningful experiences of life, i.e. experiences of real characters and their social milieus (Imas, 2004, p.74). Furthermore, Eco (1994, p.8) once said that “the author must not interpret, but he may tell why and how he wrote his book”. So at the end of the story, I will not provide over-interpretations, but a few more details about how I wrote these stories and why I did so.

4.6 Conclusion

In this chapter, I have shown the research question of how and why “constructing a learning paradigm in the field of IC” was translated into an interpretative research design, which comprised three types of analysis. First, through secondary exploration, I gained a general understanding of the evaluation results of implementing the InCaS methodology, which comprised of different views from SME representatives, as well as from trainers and country coach who implemented the InCaS methodology with SMEs. This was the “plane” of my study, in which different voices were mixed up. Second, I analysed the in-depth interviews that I conducted with members of the InCaS consortium. My interview respondents supplied me with various insights into ways of improving InCaS through the establishment of a learning paradigm and attending to its enabling factors. Their voices

formulated a clear “line” of investigation that acknowledges the tension between process-result (learning-measuring). Third, I channelled my attention to a special case in line with a critical thinking of IC practice. By observing this case “point”, I was able to contextualise my preliminary findings and attributed an order to them. At the very beginning of this chapter, I mentioned that any credible research should be rigorous and relevant in its own research context by linking research questions and methods of investigation together. What I have revealed above, hopefully, casts some light on the “confidence” and “relevance” issues lying at the heart of qualitative research (Bauer and Gaskell, 2000). Looking back, I summarised the criteria that I had adopted to establish the confidence and relevance of the present study, all of which had been explained throughout this chapter. Table 6 gave the quality assurance of the methods being used in this thesis.

Table 6: Quality Assurance of the methods

Quality criterion	Aim	Method
Corpus construction	Confidence and relevance of findings	Purposive construction of data corpus through a “plane-line-point” design that mixed up several sampling strategies.
In-depth exploration	Confidence of findings	Systematic interpretation on the basis of coding frame in thematic analysis
Triangulation	Confidence of findings	Combination of multiple data sources and methods of data collection and analysis
Transparency and procedural clarity	Confidence of findings	Pilot interview and refined topic guide; Self-reflexive documentation of research
Communicative validation	Relevance of findings	Constantly exchange ideas with interviewees by reaching mutual agreements; providing clarifications when collecting and analysing data

(Source: adapted from Steinberg, 2005)

5. Problematising the measuring paradigm

“The main problem with all measurement systems is that it is not possible to measure social phenomena with anything close to scientific accuracy”.

- Sveiby, 2004

This chapter maps out the symbolic universe in which the RTD members, including SME representatives, trainers, and country coaches, are located and which inform the possibilities of developing a learning paradigm in the field of IC in later chapters. The survey results of 25 pilot SMEs who participated in the first two consecutive phases of the InCaS project as well as the contrasted project artefacts before and after the implementation processes are analysed. My aim here is to present clearly, for my readers, the major themes underpinning SMEs’ discourse to the measuring paradigm, particularly with regard to the calculation, numbering, ranking, and quantification of IC and its sub-categories. From there, I question the legitimacy of making use of IC reporting as a tool/instrument for strengthening internal management control on the one hand, and for manipulating public relations on the other hand²⁵. The question guiding this chapter is: what could be the challenges and/or opportunities of involving SMEs in the process of assessing and reporting IC and its sub-categories?

The original InCaS methodology²⁶, called “InCaS Phase I Implementation Guideline”, was built upon the German ICS Guideline. It was supposed to make a breakthrough from IC

²⁵ This is also to ask if IC reporting should be concerned with the fundamental relations and paths between elements of IC and the performance of the ‘firm’ or the ‘capital market’ (Mouritsen, 2006, p.823).

²⁶ I distinguished the original InCaS methodology (called the “InCaS Phase I Implementation Guideline”) from the final methodology (the final “European ICS Guideline”, which made significant adjustments according to SMEs’ and RTD members’ feedback).

measurement results (quantified each IC factor or indicator in numbers) to IC processes (Edvinsson and Kivikas, p.382). In practice, however, the attempt of implementing the original InCaS methodology faithfully in Phase I InCaS was no more than another replication of the measuring paradigm, since there had been a strong focus on the assessment and reporting of the individual IC elements. As Mourtsen has noted (2006, p.826), every linear model assumed predictable effects, and this was precisely the expectation of the InCaS consortium at the outset of the project: making IC measurement results comparable and standardised across selected firms. To gain a deeper understanding of the pitfalls of a linear process, I shall make explicit the limitations of IC measurement results inherent in the qualitative survey results covering 25 pilot SMEs. Two observations can be made from the data analysis. First and foremost, the ambiguity and incomparability nature of IC made the assessment of IC fragmented, i.e. IC is broken down into definitions, factors, and indicators. Viewed in this light, the assessment of individual IC elements was lacking internal validity in practice. Furthermore, various firm-bounded constraints coupled with the immature market conditions discouraged SMEs to disclose their IC-related information to the public in a transparent and reliable manner, and subsequently it caused the lack of external validity as to reporting IC.

Having pointed out the deficits of the measuring paradigm, I will move on to the discussion of the potentiality of measuring: as long as the ontological position of measuring IC is shifted from ‘a definitive answer’ with an ‘output’ perspective to ‘a learning process’ with an ‘input’ perspective, SMEs are likely to gain more positive experiences and results from engaging with IC practice. The cause of this change is that “if the purpose is learning, not control nor reward, the employees and managers can relax” (Sveiby, 2004). According to the pilot SMEs, there were certain ‘highlights’ of measuring that they could associate with

the process of implementing the ICS approach. However, the way that SMEs described their positive experiences can never be fully understood without taking a discursive learning process into consideration. In line with an emerging critical perspective on IC practice (Mouritsen *et al.*, 2001, 2003, 2006; Cuganesan, 2005; Catasús and Gröyer, 2006), the pilot SMEs in the InCaS project identified the following aspects as positive experiences as a result of engaging with IC practice. First, ‘narrative achievements’ and ‘diversified values’ illustrated the numbers in the IC report can be folded into a narrative of what the organisational reality is and could be. The power of a narrative of achievement is that it elicits the much-needed attention on different kinds of value in organisations. Second, ‘boundary objects’ and ‘mobilisation’ demonstrated the possibility of considering IC as boundary objects so that firms can keep track of its loose formation in the narrative of achievement. During this course, ‘mobilisation’ in terms of identifying the operational conditions of the firm helps them understand why and how IC elements are connected to some strategic decisions but not others. Third, “measurement as convention” and “the emergent flow of energy” stressed the possibility of making the exercise of measuring IC as an opportunity for connecting a network of entities in the focal organisations. In particular, capturing the emergent flow of energy seemed to be conducive to nurturing an evaluation culture of intangibles within the pilot SMEs.

According to the thematic analysis (see Appendix 4), I derived two organising themes under the global theme ‘problematizing the measuring paradigm’, namely, ‘the limitation of assessing and reporting IC’ and ‘rethinking measuring’. These two organising themes then become section 5.1 and 5.2 of this chapter and are developed further by unpacking the nine basic themes. More specifically, section 5.1 will deal with the fundamental problems of the measuring paradigm, whereas section 5.2 shall explore the potentiality of measuring

IC by adopting a different ontological position. Before I draw the conclusions of this chapter, section 5.3 provides an extended discussion on the contrast between a measuring paradigm and the potentiality of measuring IC when a discursive learning process is taken into account. The detailed exploration of a learning process will be illustrated in Chapter 6.

5.1 Confronting the limitations of IC measurement results

Despite the intention of shifting the focus of attention from IC measurement results to IC processes, the original InCaS methodology (*InCaS Phase I Implementation Guideline*, p.8) was still under a strong influence of the measuring paradigm, which made the implementation of the ICS approach a linear process leading to the wish for a definitive answer. The legacy of the measuring paradigm can be captured through the definitions of IC and ICS:

- *“IC comprises all the value creating elements in an organisation that are not captured in traditional financial statements, but are of critical importance to a company’s long-term profitability. It is divided into human, structural, and relational capital”.*
- *“An ICS is the structured visualisation of IC of an organisation. It is an assessment tool that takes quantitative and qualitative factors into account and describes and values IC by using indicators”.*

Once the above definitions are accepted, people are likely to come up with the subsequent conclusions: First of all, human capital, structural capital, and relational capital seem to be self-standing sub-categories of IC. Secondly, these three elements are associated with a firm’s profitability and value creation in financial terms. Thirdly, the ICS should be

considered as an assessment tool that contains IC factors and indicators. In fact, none of these conclusions has a solid ground in practice. In the following paragraphs, I will report the problems associated with the measuring paradigm that were reflected by the pilot SMEs of the InCaS project. My findings went against the three conclusions that are grounded in the above definitions of IC and ICS.

5.1.1 Assessing IC

In the context of the InCaS project, the focus on measuring IC and its sub-categories was mainly manifested by the “QQS” task, short for the “Quantity, Quality, and Systematic” assessment of individual IC factors. The “QQS” task led to the weighting of IC factors. To start with, an IC project team consisted of 2 to 10 people were picked up from either a department or the whole organisation, depending on the scale of implementation that the pilot SME chose. The QQS task sought to answer the following questions: What is the status quo of a given IC factor? What evidence – preferably in the form of already existing indicators – is available to support this perspective? What is the definition of this indicator? (Bornemann and Alwert, 2007, p.567) While the quantity assessment of IC (the 1st “Q”) dealt with the question that ‘how much of a given resource does a firm have’, the quality assessment (the 2nd “Q”) added another perspective, i.e. how good is the firm’s intangible resource? Meanwhile, the systematic assessment of IC (the “S”) tackled the systematic management of intangible resources ranging from “no structured handling at all” to a “differentiated monitoring”. Finally, the relevant importance of every IC factor was calculated through the arithmetic mean for each factor from the numeric assessment of quantity, quality, and systematic assessment:

Where Q_n is the numeric value of quantity, Q_l is the numeric value of quality, and S_y is the numeric value of systematic management. The mean $A(D_n)$ shows which IC factor is poorly or well developed. As a rule of thumb, a value measuring scale (Figure 5) was provided, when an IC factor's value is over 60%, it is considered well developed, whereas below 30% is considered poorly developed. It is worth noting that all the rest of IC measurements were based on the initial analytical results of the QQS task in the context of the InCaS project. Interesting as it may appear, the QQS task faced the following problems.

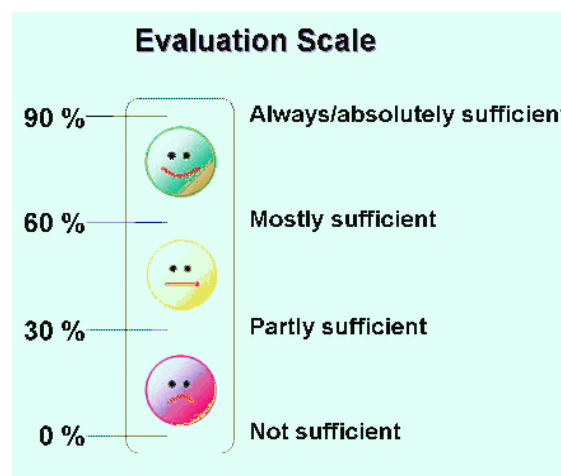


Figure 5: QQS Evaluation Scale
(Source: European ICS Guideline, 2008)

(a). IC definition

Apart from the generic definition of what IC is, the classification of IC, i.e. the three sub-categorical elements of IC, including human capital, structural capital, and relational capital, were also given definitions respectively in the context of the InCaS project (*InCaS Phase I Implementation Guideline* p.23):

- Human capital refers to “*attributes of the people such as intellect, skills, creativity, experience, values and beliefs*”.

- Structural capital is defined as “*firm-owned items, such as systems, IP, processes, databases, values, culture etc*”.
- Relational capital is defined as “*external relations with customers, suppliers, partners, regulators etc*”.

However, a problem was soon spotted by the pilot SMEs: in many cases, it was not very clear how the three sub-categories capture a complicated event and make them part of a reporting procedure. For instance, “professional training” is considered a major element that constitutes employees’ professional competence, which is a key factor explaining human capital. In practice, however, if the purpose of training is to develop competencies to make people more familiar with the firm’s newly acquired sophisticated technology, then “training” is not only related to human capital, but also structural capital. And yet, when this sophisticated technology relates to customer relationship management, then the training suddenly becomes an investment in maintaining customer relations – this is the ‘domain’ of relational capital. That is to say, a complicated event can be explained in different ways, and it depends on how people frame the problem in the first place. It can be inferred that the ICS approach started from the definition of IC and its sub-categories to seek for specific measures, and yet the boundaries of these concepts in practice were ambiguous, overlapping, even conflicting. The problem with IC definition indeed caused more troubles when there was no clarification during implementation: “*we found the definitions used in the ICS document were way too complicated and ambiguous*” (FR2), and “*the definition of IC was not very helping, we couldn’t tell what factors fall exactly into which category*” (PL5).

At a deeper level of analysis, the boundary issue with IC definitions reflects the incompetence of IC and its sub-categories in signifying the practices that they represent

(Andriessen, 2006, Jørgensen, 2006, all cited in Mouritsen, 2006, p.831). For instance, human capital is typically associated with creativity since human resource is seen as the source of innovation. Nevertheless, some measurement of human capital in the context of the InCaS project was more about the structure of a firm's workforce, such as tenure, age, education, less about creativity. As the director of a Spanish firm commented: "*tenure is not a good measure of loyalty of the employees toward the company, since we'd like to believe everyone works in our firm because he or she wants to but not because they lack other options*" (ES4). Herein, the director hinted that 'tenure' as a measure of employees' motivation under the sub-category of human capital was not an appropriate representation of practices, since long tenure might indicate loyalty or high motivation in theory, and yet, it might simply mean that an employee is lack of options of going elsewhere in practice. This example showed clearly that the boundaries between IC elements are weak and fragile: they cannot stand up to robust phenomena in the world, and therefore the IC model used in the field of IC, which privileged measurement results, faces the problem of external validity (Mouritsen, 2006, p.831).

(b). IC factors

To help SMEs understand the three IC elements and their effects on improving a firm's business performance, a list of 'commonly seen' IC factors was provided to the pilot SMEs. In total, there were 15 IC factors identified: 4 of them were used to account for human capital, 6 were associated with structural capital, and 5 were related to relational capital. By using a Structural Equation Model (SEM), the investigation into the correlation of each IC factor with its respective capital was carried out by an independent researcher (Halim, 2010, p.61). The result showed that among those 15 factors, 14 of them have strong correlation with their respective capitals statistically (at 5% significant level, $\alpha = 0.05$). Only "investor

relationship” was proved to be of insignificant influence to the relational capital (*ibid*, p.69). At first glance, this result seemed to justify that the IC model used in the InCaS project was a good fit after eliminating the “investor relationship” factor. However, my findings derived from analysing the SMEs’ responses indicated that a careful interpretation is needed before we reach this conclusion.

First of all, as Leitner and Warden (2004, p.8) point out, one of the biggest dangers in the field of IC is to define too many factors, and yet the connections between them are rarely explored: “if neither the picture of the company’s future development nor the important intangible resources required are clear, people or organisations tend to want everything”. This was precisely what a Spanish firm had experienced: “*if you choose too many factors you end up seeing nothing; there is no value adding in that*” (ES3). A German firm who commented: “*we selected too many IC factors and indicators, but sometimes only a loose connection between indicators and IC factors, and sometimes we felt confused about indicators*” shared this concern as well (DE2). Moreover, according to a Polish firm, “*it might be a waste of time to develop indicators to all IC factors. Maybe in order to simplify the process, the indicators should be developed to the IC factors only in the development area to our concern*” (PL3). These comments gave a footnote to the automatic adjustments in InCaS Phase II that why “*all Spanish SMEs selected less IC factors, since they realised they needed to identify the ‘right’ factors – and the nature, dynamism and relationships between the different IC factors*” (BM). This view echoed the aforementioned point made by Leither *et al.*: in the end, it is not the number of IC factors that determines the success of IC reporting, but the profound associations between various factors.

Secondly, the proposition that the three IC elements can be used to define a statistical model is problematic since: “statistical relations may be stable on average but may not be useful for prediction in the individual case” (Mouritsen, 2006, p.825). This warning reminded us that even common IC factors could be misleading, irrelevant, or distorted without adapting to the specific context where they were identified. One such difficulty relating to contextualisation was what Leitner *et al.* (2004, p. 9) noted: “not everything can be made explicit in terms of figures, not to mention the question of validity...often the context of the data, necessary for reasonable interpretation, is missing”. This point explained a German firm’s experience: “*when we were asked to rank IC factors, we found the rule was not to allow us to rank two factors at the same level, we must give two different numbers in order to proceed, but that does not reflect our reality at all*” (DE5). The other difficulty related to contextualisation was the assumption that a firm’s business model can be defined by a limited set of factors (*ibid*: 12), nonetheless, different organisations pursue different objectives, and it was impossible to explain everything in accordance with a fixed number of IC factors. Even if commonly defined indicators are necessary for comparison reasons, individualised and context-specific indicators are much more vital, since they reflect the specialities or the core competencies of the firm under study. “*The IC factors were imposed for the purpose of the QQS task, but we would prefer to give priority to factors defined by ourselves, specific to our business goals... unfortunately, they were not represented amongst the factors that could be selected from within the ICS toolbox*” (FR4).

Thirdly, the weighting of three types of capital as an extension of the QQS analysis was misleading, since the weights calculated for each capital could not reflect their respective importance. Figure 6 is an example of the weighting result. This pie chart was intended to

show the weighting distribution among the three types of capital and their respective importance thereof. And yet, “*it was not appropriate to make the number of IC factors selected as an importance or weighting multiplier*” (FR3), because “*(people) chose IC factors from the list as if it were a restaurant menu ...*” (JJ, Spanish trainer). That is to say, the quantity of selected IC factors does not necessarily represent the importance of such factors in the focal organisation.

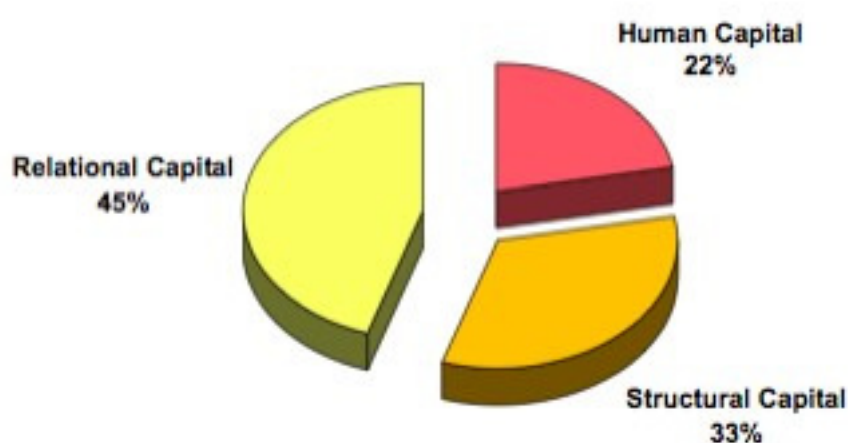


Figure 6: An example of the weighting of three types of capital

(c). IC indicators

Before the ICS approach was implemented, the original InCaS methodology stipulated that the use of qualitative and quantitative indicators was to “*value IC*” so that the results can be “*communicated in an intellectual capital statement*” (*InCaS Phase I Implementation Guideline*, p.8-9). This stipulation reflected a fundamental problem of IC practice, namely, the IC information was deemed as the ultimate target that people are interested in (Mouritsen, 2006, p.834). Accordingly, IC indicators were understood as the most powerful measurement to capture the value of IC. The attempt to capture the value of IC linked to an implicit agenda: to make managers and policy makers the confident adopters of IC (*ibid*), since indicators usually assume standardised interpretations and comparability between organisations. If valid, these indicators would then be used as a frame of reference

for management interventions, as the adage ‘what gets measured gets managed’ implied. However, the feedback from pilot SMEs was opposed to this attempt, and consequently it rejected the implicit idea that IC indicators can be used directly for management interventions (Catusus and Grojer, 2006, p.189).

Instead of seeing IC indicators as an effective benchmark for making management objectives, most pilot SMEs found IC indicators “confusing” or “of little help”. This was primarily because of the impossibility of framing certain measurement in an indicator setting: *“we thought we had this aspect under control, but we realised different people had different measures about the same indicator, they defined the indicator the way they liked it, and they measured it the moment they liked it”* (ES1). To reify this point, the director of this Spanish company continued his explanations by mentioning the following example, *“... indicators that we thought around 2 – 3 minutes have turned to be 5,000 minutes; why was that? For instance, the time dedicated to solve the problems for clients, they reported 2 – 3 minutes, of courses, they only considered the period of time since they pick up the phone and hang it up, but when you consider the time that takes to solve the problem, you get a number of 5,000 minutes”* (ES1). It was a common belief that *“the process of valuation generated the greatest controversy...and SMEs all considered that the valuations would have been different if they repeated the exercise 2 – 3 days after the meeting”* (JJ, Spanish trainer). The above examples suggest that the measuring process for these indicators of intangible qualities was inherently unstable. As Reinhardt *et al* (in Direkes *et al.*, 2003, p.812) summarise, “the measurement of IC, because of its idiosyncratic characteristics, would not be accorded the same status as traditional accounting”, and hence the intention of making IC indicators as a benchmark for making managerial objectives is doomed to fail.

5.1.2 Reporting IC

The problems associated with the action of reporting IC include the overemphasis on the use of quantified outputs in IC practice, and the demand and supply gap of IC reports in the capital market.

(a) Quantified outputs

In most cases, quantified outputs in the field of IC were seen as a direct result of measuring IC elements within a standardised model/system that produced desired effects. There has been an unrealistic expectation on those quantified outputs to be accumulated into one definitive answer that addresses the fundamental relations between IC components (Mouritsen, 2006, p.825). Viewed in this light, quantification stands for the ambitions of looking for causal relations, predictability, comparability, or standardisation. The original InCaS methodology revealed such ambitions in terms of defining an external stream of ICS standardisation (*InCaS Phase I Implementation Guideline*, p.17):

- Intellectual Capital Reporting: *“setting standards for the form and structure of reporting IC to the financial market, i.e. SMEs’ investors and creditors.”*
- The effect of this stream is to *“enable external stakeholders such as the financial sector to evaluate credit risks and the comprehensive company value on a solid basis”*.

Here, SMEs’ investors and creditors were highlighted in particular as the consumers of IC reporting. Ironically, based on the statistical analysis of 25 pilot SMEs’ evolution reports, amongst 15 common IC factors, only “investor relationship” was proved to be of insignificant association with relational capital and subsequently IC in general (Halim, 2010, p.61). Taking SMEs’ feedback qualitatively, my findings challenged further the idea

of overemphasising on the quantified outputs of a firm's IC so as to attract investors or external financial resources. Amongst 25 SMEs who participated in the InCaS project, only 1 SME from France saw the immediate use of the final ICS documents as an external communication tool with banks. However, this conclusion was based on their pre-established relationships with banks: *"we proposed to use the ICS to support our continuing relationships with the bank, but it is based on trust and confidence we've been trying to secure all along"* (FR3). For the rest of the pilot SMEs, they could not see the direct link between the ICS and investment opportunities: *"we don't know how banks could base decisions on the ICS since ICS doesn't seem to be comparable"* (DE1). As the director of a Polish firm put it: *"the promise that the InCaS exercise could lead to better conditions for credit with the banks was doubtful... we concluded that the ICS document could not be used towards the banks immediately... the numbers on the ICS were only a result of our recognition"* (PL4).

On the other hand, the overemphasis on quantified outputs to be summarised in a single format report, called "IC Statement", ran the risk of covering what really matters on the ground, i.e. the difference between a meaningful process and a snapshot result. As a French SME recalled, *"when the ICS process was introduced inside the firm, starting with the 'Intellectual Capital Statement' was not helpful, it was misleading in effect... trainers had to explain again and again that the core process, that is, supporting IC strategy related activities, was something else"* (FR3). In retrospect, IC reporting has been in part motivated by the market-to-book ratio and its equivalent, which have been explained as the extra value that intangible resources bring to the firm. However, the downside of this explanation is that financial value becomes the end point of a valuation exercise, and the process of creating values is ignored completely (Mouritsen, 2006, p.832). At most, the quantified

results that appeared on the IC Statement were only a snapshot result of a firm's IC stock rather than IC flows. Investigating past patterns of value creation is important, yet other values, such as strategic value or user value, which are derived from a firm's existing knowledge resources, can push forward the search for new business or new market opportunities. And thus, they also deserve our attention. As a German firm stated: *“if quantified outputs are only the deliverables within the scope of the ICS, they will not bring any benefit... continuous monitoring is a basic requirement for much more illuminating interpretations”* (DE5).

(b) The 'demand-supply' barriers

In the original InCaS methodology, the assumption that IC reporting results in a better response from capital markets to investments in intangibles was self-evident. The real implementation process within pilot SMEs, however, indicated that there is a significant gap between the perceived impact of IC reports and their real impact in practice. This gap can be referred to the 'demand-supply' barriers that SMEs identified, in particular, most of the barriers related to the problematic quantified outputs. As Guimon (2005, p.29) notes, the exchange of corporate information can be conceptualised as a market, where the demand side consists of people from the capital markets (investors, financial analysts etc.), and the supply side comprises firms and possibly other information producers (rating agencies, financial journalists etc.). In this market, however, there are both demand and supply barriers that reduce the effect and efficiency of reporting IC.

In the context of the InCaS project, the pilot SMEs cited frequently the following three supply barriers with regard of the IC Statements:

- 1) IC reporting as a voluntary practice: 18 SMEs mentioned that they were either reluctant to publish external IC reports or not in need of doing so. For those who were reluctant to publish, they feared that unveiling sensitive information could harm their competitive position: *“we are afraid of releasing our weaknesses to the public, and we also fear our competitors may grab the useful information from the report and use it against us”* (DE4). For those who did not feel the need of publishing, two major reasons were stated: *“(our firm) is running well and do not need to borrow any loans at the moment... once giving out such reports, the banks might expect something like this every year”* (DE1); *“banks in this region are not familiar with the IC report, they simply don’t know what it is”* (SL1). That is to say, the perceived over-reporting burden and the lack of attention from the financial institutions posed a challenge for reporting IC externally.
- 2) Lack of generally accepted framework for preparing IC reports: the indicators contained in IC reports are very heterogeneous across firms or sectors, even a minimal set of indicators are hard to be agreed on. The overwhelming variability of measurement results creates confusion and becomes an obstacle to the readers of the report: *“(we) found it difficult to handle the numbers on the reports... banks in Poland don’t have ready-made framework to deal with such information”* (PL3).
- 3) The missing link to the future value creation opportunities: although the original InCaS methodology did encourage SMEs to put a monetary term to their calculated measurement results, most SMEs found this exercise meaningless, since those numbers were not even close to the estimation of the firm’s future cash flows: *“it’s difficult, if not impossible at all, to establish the connections with cash flow*

projections” (FR2). Similarly, the director of a German SME sensed: “the ICS approach evaluates the status quo of IC in the company, but it gives little support for thinking about the future, and how IC considerations can be incorporated in(to) this” (DE3).

In relation to the supply barriers, the InCaS pilot SMEs sensed frequently that the demand side of IC reports also posed challenges as follows:

- 1) Lack of knowledge: some financial analysts fail to understand the impact of intangibles on value creation, partly because they have not been trained to do so, and they also lack of specific tools to analyse intangibles: *“maybe a personnel in charge of credit risk in a bank is a good guy, but he simply doesn’t have any frame to evaluate intangibles” (DE4).*
- 2) Validity concerns: the readers of IC reports might question the validity of indicators provided by the firm since they could not tell if firms would publish only positive data while hiding the information that could have a negative effect: *“the information on our report may be too positive, because it’s voluntarily published anyway” (FR1).*
- 3) Unspecified consumers: although the target audience of IC reports was generally defined as “external stakeholders”, in practice, different stakeholders might demand different types of information: *“(we) doubt the same report can be used to communicate with commercial banks, venture capitalists, or financial regulators, because all of them would require different information, even it is all about IC or intangibles” (DE2).*

5.2 Reconsidering the potentiality of measuring in the field of IC

Although the measuring paradigm caused many problems in the field of IC, ‘measuring’ *per se* is not the root of the problems. It is the motivation behind ‘measuring’ that somehow determines the effectiveness of IC practice. Thus, building upon previous research, I propose to reconsider the potentiality of measuring in the field of IC by taking into account new representations of IC and desirable outcomes.

5.2.1 Narrative achievements and diversified values

In the context of the InCaS project, one of the potentialities of IC reporting in relation to the quantified IC measurement results was what Mouritsen (2006, p. 867) called “the narrative achievement”, that is, the numbers in the IC Statement can be part of the world and they have to be accounted for or folded into a narrative of what the organisational reality is and could be. The IC Statement has to be inserted into a narrative where the achievements of a firm’s intangible resources can be presented in terms of time sequence, a plot, a voice, and a point of view. Herein, the IC Statement *per se* does not produce the realisation of the narrative, since all the people participate in the process of implementing IC reporting systems can define and interpret organisational events in their own rights. However, when everyone develops his or her individual self-account, these new narratives altogether will challenge and reform a firm’s existing narrative and direct the focus of attention to the relationship between individual narratives and their relations to the firm. Clearly, managers play a part as everyone else does in this open-ended narrative construction. And yet, they do not hold any priority to pre-determine the relations between IC elements and value creation processes. Everyone who participates in this process is equally responsible for deciding how the quantification and the development of narratives can inform each other. As a German SME commented, “*as soon as we started talking*

about the differences of our measurement results, we knew immediately that everyone's interpretation is important... by just talking (about) these differences, the ICS has been very good to us, because it has allowed us to take other's perspective into account" (DE5).

The power of the narrative of achievement is that it elicits the much-needed attention to different kinds of values, or different pathways to value, in an organisational setting. For instance, strategic values derived from a firm's existing knowledge resources can advance the search for new business and market opportunities (Mouritsen, 2006, p.833). The narrative of achievement reveals the internal capabilities of a firm, and thus constitutes the basis for the sustainable development of the firm. In fact, the narrative of achievement reflects on how strategic values may be possible to leverage what is already there. On the other hand, people who are able to contribute to the internal capabilities of a firm should have a place in the narrative as part of its plot. Valuing, in this sense, also means creating value to somebody, i.e. making something relevant to somebody. Here, 'somebody' does not have to be a specific person; rather it can be considered as an organisational unit that is capable of producing the justification for a specific investment for the purpose of strengthening a firm's knowledge resources or internal capabilities. In this regard, user value may serve as social glue that binds people, value, knowledge resources, and internal capabilities together. As a consequence of this binding, the chase of financial value will be challenged as the only legitimate value form in organisations. As a French firm recalled, *"the process of implementing the ICS was very meaningful since it demonstrated what kind of 'value' can be aimed for... at a strategic level or an operational level, to whom the firm may provide value"* (FR2).

5.2.2 Boundary objects and mobilisation

According to the pilot SMEs, the essential IC elements of the IC Statement are problematic, since the boundary of each IC elements is not clear-cut and altogether they cannot fully represent the whole substance of an underlying reality. Nevertheless, it is useful to compare IC to boundary objects, i.e. objects that both “inhabit several communities of practice and satisfy the information requirements of each of them...(and thus) plastic enough to adapt to local needs.... and robust enough to main a common identity across sites” (Bowker and Star, 1999, p.296). By considering IC and its subcategories as boundary objects, we can keep track of their loose formation in the narrative of achievement where they are embedded in (Mouritsen, 2006, p.827). From there, narratives around IC and its subcategories can re-organise the boundary between complicated events that remain outside the current narrative in an organisation. The use of boundary objects is therefore linked to a means of representing, learning about, and transforming organisational knowledge to resolve the consequences that exist in a given boundary (Carlie, 2002, p.442). As a Spanish firm elaborated, *“when talking about ‘professional competence’, for example, if our firm can manage to better relate strategy to business successes and the principal processes of value generation, then this IC factor will be able to open itself up to a level of details that allow the adaptation of the ICS model to different fields of activities working across our functional departments”* (ES3).

When IC and its subcategories function as boundary objects, they can be loosely coupled to organisational actors and their action. However, before it travels the sphere of organisational behaviours in multiple ways, IC needs to undergo many trials and tests concerning its relevance and strengths. During this course, the construction of organisational realities will be in question, since IC elements (as coined in the IC Statement)

and their effects are separated and there is not a definitive causality between them. Hence, as a mediating force, ‘mobilisation’ in terms of identifying what conditions the functioning of the firm (Mouritsen, 2006, p.827) becomes prominent. Herein, mobilisation concerns with the question of how organisational actors mobilise IC elements and how the IC elements are connected to some management decisions but not others. It is therefore related to the type of reflexive thinking affected by the transfer of dialogues or argumentations within (Shotter, 1993, p.388). As a German SME commented, “*the arguments we had about IC measurement results were very useful when they were linked to our everyday practices or when they reminded us to think of our daily operations in a different light*” (DE4). The importance of this kind of reflexive thinking lies in the fact that it opens up the possibility for eliciting long-term based behavioural changes or change of practice in an organisation. At the same time, it reinforces a future dimension to the firm’s management, i.e. how the firm will fare in the future.

5.2.3 Habit of evaluation and the emergent flows of positive energy

Although most SMEs found the quantification process inherent in the IC Statement confusing, the quantities can be a reference to the firms’ continuous improvement when IC measurement results and the development of narratives of achievement inform and reinforce each other. Viewed in this light, IC measurement results would never become the focus of practice as *a priori*; on the contrary, they can be understood as convention or a habit of evaluation that can be applied in a closed system of classification, in which transactions are merely handled according to rules and procedures on the basis of agreement. Mouritsen (2006, p.832) used the term “measurement as convention” to highlight that quantification is only an institution with its own procedures and rules, and yet “*the exercise of measuring IC indicators fostered a culture of evaluation... (which is)*

about monitoring key business success factors, taking a more objective view, and making continuous improvement” (ES3). More importantly, “convention” also entails the meaning of bringing things together, which opens up a whole new opportunity to think of IC measurement results as a network of entities that can be connected and transformed in their own rights. As a German company stated, *“IC indicators serve as a useful input for the discussions in the ICS workshops by convening a whole variety of people, ideas, and resources together”* (DE3). Hence, quantification can be loosely coupled with the efforts to develop the narrative of achievement, in which the act of measuring helps foster an evaluation culture of intangibles.

Last but not the least, a remarkable yet surprising advantage associated with the process of implementing the ICS approach was the emergence of a flow of positive energy, which was believed to be conducive to establish a long-term based evaluation culture of intangibles within the pilot SMEs. This entailed both the internal and external positive energy that the exercise of measuring IC engendered, which was consistently and systematically oriented towards a firm’s clear, well-communicated and shared strategic objectives. However, the flows of positive energy inside and outside a firm stood for different meanings, which included, but were not limited to, tremendous enthusiasm, a high level of motivation, and a sense of trust, care, commitment, or readiness. In the context of the InCaS project, 22 (out of a possible 25) pilot SMEs’ employees and/or other stakeholders were reported to experience firsthand this kind of positive energy. Without such positive energy flows, IC measurement results would have turned out to be dry and tedious, since they lost sight of the emotional side of intangibles that would otherwise be able to inspire individuals and organisations to solve problems creatively, live a more effective life, or deal with current social and economic challenges more successfully (Grandey, 2000, p.101). As a Spanish

SME summarised it, *“I don’t know if we will end up measuring more accurate indicators, but above all what I considered as a prime conclusion is that the positive energy exacted from the process of measuring in line with our strategy is extremely valuable... it is important for people to know and to experience this vivacity”* (ES1).

5.3 The potentiality of measuring beyond IC reporting

To expand the discussion on the limitations of the measuring paradigm as well as the potentiality of measuring IC, Table 7 provides a summary of the key themes in the field of IC. To keep in accordance with this line of thinking, I will explain in details the differences between them in accordance with the basic assumption and three fundamental questions listed below.

Table 7: Themes in the field of IC

Theme	IC1: The ‘measuring paradigm’ in IC reporting	IC2: The potentiality of measuring beyond IC reporting
Basic assumption	IC is related predictably to value objects and management objectives in a pre-set model	Measuring IC is part of a flowing process where IC can be mobilised towards change and innovation
How is IC related to value creation?	Concerned with a firm’s financial performance and individual success as reflected in its quantified IC report, i.e. the ICS	Concerned with a firm’s diversified values and interpersonal relations as reflected in its narrative of achievement
How does IC work in an organisational and social context?	IC and strategy are linked through causal mapping and related to effects of IC on the firm’s financial performance or individual success	IC is mobilised idiosyncratically in attempts to make a firm performing towards endogenously defined values
How are IC elements to be understood and analysed?	IC consists of three ‘well-defined’ sub-categories (human, structural, relational) that have functional qualities; measurement is essence	IC is an assemblage of intangibles whose transformative qualities emerge in application; measurement is convention

(Source: adapted from Mouritsen, 2006, p.824)

As I have elaborated in the previous section (5.2), the measuring paradigm is manifested in the overemphasis on the definitions, assessment, and reporting of the weaknesses or strengths of individual IC factors or indicators. Looking back, the linear model that the measuring paradigm relies on follows the logic of ‘identify – measure – report’ and it

consists of the following five ‘standardised’ steps, including (i) pre-defining a firm’s strategy, the boundaries of IC and its three sub-categories; (ii) choosing from a list of ‘commonly observed’ IC factors and indicators; (iii) calculating numbers, ratios, weight, percentages for each of these factors and indicators; (iv) relying on the calculation results to work out a specific strategic goal, preferably in numerical terms, as the ‘rationale’ for management decision; and finally (v) summarising everything in a report for internal or external distribution purposes. These standardised steps revealed the basic assumption of the measuring paradigm in the field of IC, that is, IC is related predictably to value objects and management objectives in a pre-set model. Clearly, the original InCaS methodology seemed to rely on this linear process in the sense that measurement is largely understood to capture the value of IC and its sub-categories. The attempt to stabilise IC in such a measurement system might be useful for analytical reason, but the irony is that, the more general a point of view is developed, the less is known about the individual case, and consequently the less useful the measurement results are for a firm’s sustainable and innovative development (Mouritsen, 2006, p.834).

From a practical point of view, the 25 pilot SMEs who participated in the InCaS project provided an alternative way of understanding the meaning of measuring IC and its sub-categories. Instead of following the five linear steps, IC information can be considered as input rather than output and the concern is therefore to study how IC measurement results may play a role in mobilising action and producing effects that no one could take full control in advance. In light of this, measuring is a point of departure rather than a finished article, and subsequently the process of engaging with IC practice becomes a learning experience in an organisational context. This flowing process is aimed at mobilising IC so that it can foster organisational change and innovation. As a number of researchers have

noticed (Cuganesan, 2005, Catasús and Gröyer, 2006), the meaning of problematising IC measurement results lies in eliciting questions beyond what is prescribed as a statistical model. There are a number of different ways in which the relations between wealth/value creation, strategy, and IC can be carved out (Mouritsen, 2006). On account of this, the potentiality of measuring IC and its subcategories is fundamentally concerned with the complexity of intangibles as well as their roles in support of change and innovation in a given context.

5.4 Conclusion

Historically, IC reporting has been partially motivated by the ‘market-to-book’ ratio to explain the extra value outside a balance sheet as if it were the ultimate ‘value’ of intangibles (Roos *et al.*, 1997). The measuring paradigm in the field of IC inherits this idea of treating ‘value’ as the end point of an evaluation exercise. The original InCaS methodology seems to entrap ‘value’ into a noun: it attempted to identify the configurations of individual IC elements and impose ‘value’ on them. Correspondingly, a predictive model was invented to look backwards at the firm’s past performance in the hope of analysing historical data to foretell the future. To a large extent, however, the future value of a firm privileged the unjustified interventions of the firm’s senior management. The rationale for making these interventions feasible was barely talked about and the only way of understanding them was to refer the senior management’s decision back to the quantification appearing on the IC Statement. Unfortunately, none of the numbers, ratios, or percentages was capable of replicating itself due to the ambiguity and incompatibility nature of IC elements. More importantly, in the radicalism of a knowledge-based society, the past will be in discontinuity with the present, and thus it is change and innovation other than stability that will govern the future development of a firm (Mouritsen,

2006, p.833). In a nutshell, the measuring paradigm in the field of IC is concerned with a firm's financial performance and management's individual success, and thus it runs the risk of reducing the irreducible to a malfunctioning statistical model.

In contrast, the potentiality of measuring IC concerns itself with the practices and challenges of valuing that go beyond the constraints of conventional IC reporting. In the end, it is a flowing process in an organisational context that generates diversified value for the focal organisation matters most. Measuring IC is seen as part of a learning process in which the narrative of achievement is developed according to different kinds of value. Although this narrative of achievement reflects the relation between a firm's internal stability and external environment, it is by no means a linear prediction of market success. The space that the narrative achievement creates, for instance, between the existing and potential capabilities, the actual and potential users, and the actual and potential resources etc., will help firms develop opportunities facing the future that can be envisaged in order to negotiate the relations to the past (Mouritsen, 2006, p.834). While the measuring paradigm finds the past and makes it the future, the potentiality of measuring IC, as a learning exercise, deals with the complex situations it creates. On account of this, past is not necessarily in continuity with future, and yet it is important insofar as it develops a new space for valuing. In relation to different kinds of value, interpersonal relations will be privileged over individual success. This is not only because the construct of narrative achievement involves social interactions naturally, but also because non-financial value, such as strategic value and user value requires the information input from more than one party. In Chapter 6, I will demonstrate the possibility of constructing a narrative of achievement and realising different value through two Habermasian concepts: communicative action and Lifeworld-in-System.

The measuring paradigm in the field of IC assumes a generalised statistic model, which can be dissected according to the three elements of IC (human, organisational, and relational capital). This proposition sounds appealing, since it implies three levels of control in the form of three kinds of IC elements. However, as I have demonstrated previously, the casual relations between IC and strategy are not close to being stabilised. Although IC and strategy are to some extent associated, the directions of the arrows that link them cannot be predetermined, since there is more than one possibility of explaining the impact of different factors on their specific contexts. Taking different factors into consideration, it can be said that the fluidity between them means: it is the movement within the system that counts, not the system itself. As Mouritsen (2006) notes, exploring the relationships between IC and strategy is meaningful, yet the assumption that all these relationships accumulate into one definitive answer, which can be used to explain a firm's financial performance or justify its senior management's investment decision, is unfaithful to the meaning of IC reporting. The correlation between IC and a firm's strategy might speak to the firm's management and/or policy makers, but it is useful only because they will use this knowledge about relations to intervene or develop investments in IC components. In fact, investing in the different components changes the relationships between the components and subsequently the analyses will develop new casual relations, and therefore IC measurement results can never be fixed as a finished article.

On the other hand, the potentiality of IC practice sees 'measuring' as part of a learning process: it does not require IC elements to be interrelated systematically, let alone presumes a stable relationship between IC, strategy, and a firm's financial performance. By considering IC as a boundary object, it is individually constructed in each application where IC gains its particular identity or capability to maintain the narrative flow between

different entities. The firm's management decision on making use of its intangibles depends on the particular knowledge available on IC, the strategic situation at hand, as well as how this type of knowledge is represented and related to its users. During this process, "imposing" IC-related decisions on people is not feasible, since IC elements are separated from their effects, and yet "mobilising" IC shall prove to be useful as the measuring exercise provides loosely coupled information between different entities within a domain of action. Along with the production of a narrative of achievement, IC elements can be mobilised into a strategic situation in which the investment on these elements and the desired value creation can be discussed and negotiated openly. Since any narrative is not a stable construct, the firm's management can only mobilise the numbers on the IC Statement towards several possible futures, that is to say, a transformation of the future is subject to collective choices (Mouritsen, 2006, p.828). In the following chapter, I will draw on two Vygotskian concepts "mediating" and "internalisation/externalisation" to explain the use of IC as boundary objects as well as the possibility of mobilisation.

Without a doubt, the measuring paradigm in the field of IC sees measurement as a strong and essential construct, since IC elements are deemed as *a priori* that result in an isomorphic numerical measurement system corresponding to the real world they represent (Roos *et al.*, 2005, p.235). As I have showed in the case of the InCaS project, the very fact that IC elements do not have clear-cut boundaries and subsequently well-defined definitions indicates that a strong measurement ambition is unattainable. In fact, developing quantifications of IC only helps researchers and practitioners understand the classification of IC better. Classification, however, does not always imply to explain the functional qualities (essence) of something. It can be an organising list of content as well (for instance, think of language corpora). To this end, the proposition that measurement is

essence should be challenged. Since none of the IC measurement results can be used to represent a set of behaviour effects, no functional order should be sought as a result of identifying the relationship between IC elements, strategy, and financial value. As Mouritsen (2001, 2003, 2006) summarises it, measurement is useful for hermeneutical reasons, but measurement systems do not find much respect in the field of IC.

If measuring IC does not produce a definitive correspondence between quantity on the IC reports and the external world, what does it produce? In fact, the quantity is merely the result of a procedure of agreement and recognition. The potentiality of measuring IC seeks to institutionalise this measuring exercise as part of a learning process in which the habit or the convention of evaluation can be established. As many pilot SMEs in the InCaS project mentioned, small firms usually lack an evaluation culture that relies on data, facts, or relevant information to support their management's decision-making process. The qualification process inherent to the IC Statement together with the opportunity to construct an IC narrative together will make management decision making a much more transparent process. In addition, everyone who is involved in this process will be automatically given a chance to contribute value and feel valued at the same time. Therefore, quantification alone cannot hold all things together as the measuring paradigm prescribed, however, it can address the realm of IC activity through offering the chance of problematising the present and eliciting the emerging and transformative qualities of IC in the future. In the following chapter, I will borrow two concepts from Deleuze, namely, 'assemblage' and 'becoming', to illustrate the potentiality of measuring IC a step further.

6. Elucidating the characteristics of a learning paradigm

“If the intellectual capital concept is as central as some claim it to be, it is vital that it is fully understood and exploited in the quest for social betterment”.

- Mouritsen and Roslender, 2009

The previous chapter discussed the complex roles of measuring in the field of IC. It confirmed the necessity of thinking beyond the measuring paradigm. Against this background, this chapter sets out to map out the process components of learning paradigm for the purpose of overcoming the limitations of the measuring paradigm. The thematic analysis (see Appendix 4) allowed me to flesh out the details of three pairs of organising themes in accordance with a Habermasian (section 6.1), a Vygotskian (section 6.2), and a Deleuzian (section 6.3) analysis respectively. Since all my interviewees have sufficient theoretical knowledge and first-hand practical experiences, I was able to ask the question: how to account for the successful factors of the InCaS methodology? Overall, my interviewees evaluated the InCaS methodology positively when the focus of implementation was not fixed upon the quantified results of IC measurements. Their perceptions can be summarised into six major themes that fit in with the theoretical framework regarding a learning paradigm, which I have demonstrated in chapter 3. A learning paradigm is fundamentally concerned with enabling a flowing process that contributes to the generation and development of IC in an organisational context.

A Habermasian reading of IC practice highlights the necessity for reformulating a firm's strategy by enabling a changing mindset rooted in inter-subjective perceptions.

“Communication as a vehicle” (theme 1) refers to the opportunities of having decentralised dialogues about a firm’s strategy by means of creating conditions similar to those of an ideal speech situation (Habermas, 1984). “Making critical reflection” (theme 2) illustrates the necessity for clarifying the motivation of engaging with IC practices in SMEs. Reflecting on the managerial intentions of implementing the InCaS methodology as well as the corresponding treatment on IC indicators evokes the critical potential of the concept of IC: it becomes a source of resistance to the existing power discourse embedded in a firm. To this end, a project team’s re-composition serves as a coping strategy that widens employees’ participation. This strategy helps transform an IC project team into an IC community. The latter is in favour of diversification, inclusion, and flexibility. It can be inferred that critical reflection strengthens communicative action in terms of encouraging new knowledge generation in the field of IC (O’Donnell, 2004).

A Vygotskian reading of IC practice emphasises the importance of contextualising the concept of IC in SMEs’ daily operations. For this reason, “the role of mediation” (theme 3) gives importance to IC-focused participatory activities and artefacts insofar as they facilitate an in-depth understanding of the interdependences between a firm’s strategic objectives, business processes, business success, and IC factors. This understanding is the premise of “internalising/externalising a systematic standard” of IC management (theme 4), which enables SMEs to engage with innovative action as part of the process of their systematisation. The oscillation between internalisation and externalisation propels the boundary of systematisation to span continuously. An IC network that aligns a focal SME with its external stakeholders comes into being eventually, and it substitutes for an IC community that only focuses on systematising a firm’s internal problems.

A Deleuzian reading connects a firm's IC with its business environment, in which the affects and relations between the firm and its external stakeholders become salient. When IC encounters other symbolic beings, such as leadership, concepts, and events, it forms a new assemblage with each one respectively. This kind of 'IC assemblage' (theme 5) adds a different dimension that differentiates itself from its predefined meanings. Identifying 'IC assemblage' is a rhizomatic process that double captures the affect-becoming of IC and IC-becoming of affect (theme 6). Eventually, various assemblages mingle together and dissolve themselves into a larger assemblage at a macro level, and this macro assemblage continues to be sustained by the formation of new affects and new relations.

As regards the thematic analysis, I distinguish 'themes' from the actual data units of discourse, such as conversational topics and recurring discussions (Steinberg, 2005, p.134). What I was looking for was a deeper logic of thought that became most salient in the eye of its beholder – my interviewees. In the section that follows, I will describe each of the six major themes in detail and highlight the connections between them. This will be followed by a further discussion in section 6.4, which seeks to integrate analyses on various levels. In closing, I assemble the characteristics of a learning paradigm in a diagram.

6.1. A learning paradigm: a Habermasian analysis

A Habermasian reading is concerned with the innate value of IC practice insofar as it generates shared intentionality to reformulate strategy in an organisational context. This value is made evident from the RTD members' recollection of those constructive and memorable aspects of implementing the InCaS methodology in SMEs. All my interviewees acknowledged that the lack of communication on strategy-related issues was a common problem facing most SMEs. At the heart of the problem is the fundamental assumption that

a firm's strategy is given. The emphasis on communicative action and critical reflection in a Habermasian sense creates opportunities to challenge this assumption and a set of organisational arrangements associated with it. These two aspects complemented each other and influenced the result of enabling a flowing process in IC practice.

6.1.1 Communication as a vehicle

According to my interviewees, one of the common problems facing most SMEs was that their existing business models had 'face value' only: either the models were incomplete or lack of practical application. The complete business model, if there were any, seemed to be implicitly built and understood by the firm's senior management alone. In response to the requirement on the InCaS methodology, each SME was asked to form an IC project team when the project started. Under the guidance of InCaS trainers, members of the project team worked together to discuss their firm's business model, business processes, business success factors, as well as its external business environment (Mertins and Will, 2008). During this process, participants were allowed many opportunities to engage in conversations and dialogues in a decentralised manner. These opportunities provided means for criticism potentially and for a learning situation in which inter-subjective relationships came to the forefront. The inter-subjective relationship has a paradoxical character. On the one hand, as human beings, we all have the tendency to construct negatively other people who are not like us. On the other hand, it is precisely in our relationship to significant others that we find both the drive and the social resources to become what we are (Jovchelovitch, 2007, p.127). In the context of the InCaS project, most SMEs experienced this double-sided nature of inter-subjectivity through the conversations and dialogues that they had with each other in the InCaS workshops. This was the point of

departure for a learning paradigm, which diverted SMEs' attention from IC measurement results to a non-linear process of learning.

“Once you started communication, you will not only see a process, but a process of value creation, you start to appreciate the importance of others' work ... it makes you think completely different about your own task ... once you become aware of that, you will be more actively listening to or talking to someone at a relevant position” (BM, country coach).

6.1.1.1 Opportunities for knowledge transfer and creation

More specifically, as an integral part of the InCaS methodology, the requirement of making explicit the firm's business models as well as its associated communicative actions taking place simultaneously within an IC project team provided at least three opportunities for SMEs' change and innovation from the perspective of knowledge transfer and creation (Lyytinen and Hirschheim, 1988; O'Donnell, 2004): (1) by establishing new channels for elucidating strategy (Child and Heavens, 2003); (2) by redistributing access to existing information; and (3) by providing new information that can act as input for the following discussions on IC:

(1) Establishing new channels for elucidating strategy. As a starting point, the lively communication occurred which occurred within the IC project team helped build discourses that would otherwise be impossible due to organisational hierarchies and time requirements. Figure 7 reveals the two-way communication. The existence of IC project team added a mode of vertical communication, and thus it broke through the hierarchical mode of communication centred by a firm's senior management.

“The project team was a mixed arrangement...people in different positions mingled together... the senior management realised they have to commit their time to do this... the bottom line... they couldn’t keep it (strategy) to their own” (ME, trainer).

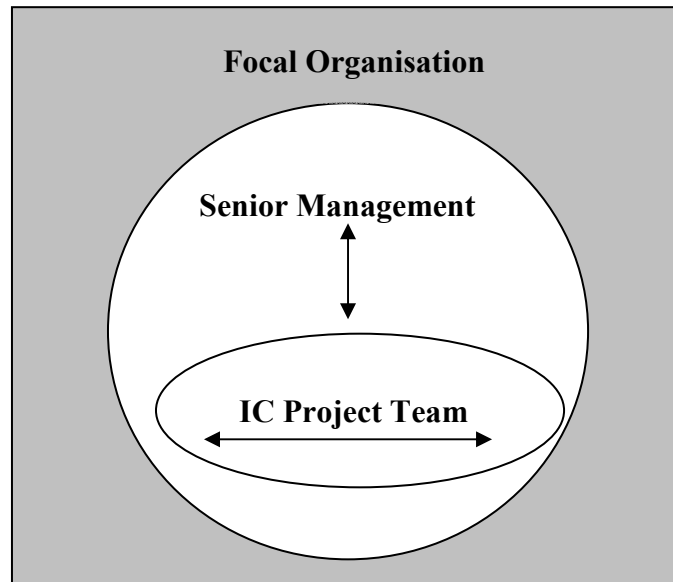


Figure 7: Two channels of communication for strategic learning
(Source: adapted from Child and Heavens, 2003, p.314)

(2) *Redistributing access to existing information.* In some cases, the communication revolved around a firm’s strategy-related issues within an IC project team can redistribute access to organisational information, leading to an emancipatory effect: new interpretations or a questioning of the rationality of interpretations that have been previously associated with pre-existing information can be triggered.

“When the senior staff explained a strategic decision they made previously, the younger ones demanded more details or justification for that decision” (JFM, trainer).

(3) *Providing new information in the following discussions on IC.* The processes of clarifying a firm's business models via encouraging lively conversations and dialogues during the InCaS workshops elicited local discourses and new insights to study and assess the validity of the reasons for a particular organisational arrangement. The result of this study and assessment was the creation of new information that served as input for the following discussions on IC.

“The first workshop focused on strategy generated raw materials and new perspectives that can be processed later on for the discussion on IC, you see, IC is not the key, but the alignment between IC and a firm's business strategy” (MB, IC expert).

6.1.1.2 Learning from communicative action

To encourage 'genuine' communication (Habermas, 1984) for the purpose of reaching understanding, it is crucial that the members of an IC project team accept certain ground rules at the beginning of the InCaS workshops. For instance, the *Trainer Guideline* stipulated three general workshop rules, including 'each member represents a specific function, department, or unit and speaks on its behalf', 'stick to facts', 'each opinion has the same weight, and the opinion of the CEO has the same weight as the one from the employee at the assembly line'. These general rules and their variations conform to two tenets: (i) allowing people a chance to express their opinions and at the same time to take the perspective of the other, and (ii) honouring and recognising the legitimacy of a better and more rational argument. In the context of the InCaS project, the interactions that occurred in the workshops had a clear focus, that is, giving explicit reasons for different interpretations of strategy-related issues. In doing so, members of the IC project team were encouraged to provide reasons for their interpretations. Discussions for or against these

reasons then might serve as “*quasi-*” validity claims (Habermas, 1984, p.302) that prepare people to engage in decentralised dialogues. As Habermas notes, as soon as agents begin to use language coordinating their actions – in the course of communicative action – everyone needs to enter a stage where justifications for one’s action or words on the basis of good reasons become essential (Finlayson, 2005, p.26).

“There was a question regarding how quick a customer should get a response from A-FIRM, the top management said ‘a couple of hours’... a girl from technical assistance murmured ‘perhaps, it’s not enough’, so I encouraged her to speak out loudly... (it reminded me ... young staff should express their views before senior members show their cards ... by setting up this kind of rule we had a lot more interesting discussions” (JJ, trainer).

6.1.2 Making critical reflection

Most SMEs had never heard about IC or IC reporting before the InCaS project was introduced to them, and therefore their understanding about IC and its framework was gradually built up whilst the project proceeded. This created a unique opportunity for the IC project team members to familiarise themselves with a less structured and little regulated domain of knowledge, in which intangibles became the focus of attention. Before this IC perspective reached out to a wider audience (e.g. employees across different departments), however, SMEs’ senior management held the power to make a judgement on the potential use of the InCaS methodology. Viewed in this light, an IC project team’s capability to make critical reflection on the issue of power or management control became crucial to the success of implementing this methodology. One way to enhance this capability was to go through the exercise of making sense of a ‘Lifeworld’ versus a

‘System’ perspective (Habermas, 1987), which can be done through engaging organisational actors, including a firm’s senior management, in the open debate about the use and effect of IC metrics. This was exactly the point where IC project teams’ critical reflection became plausible – acknowledging the limitations of IC measurement results and relating them back to the power discourse embedded in the organisational structure. This kind of critical reflection not only challenged the legitimacy of the measuring paradigm and/or the taken-for-granted assumptions hidden behind SMEs’ existing strategies, but also opened up a new pathway to utilise these results creatively.

6.1.2.1 Opportunities for going beyond IC measurement results

In recent years, the severe limitations of IC measurement results have been discussed in the literature of IC reporting by a number of scholars, yet the involvement of organisational actors, including a firm’s senior management, in an open debate about the use of assessing and reporting IC was considered a relatively new initiative in the context of the InCaS project. According to my interviewees, this kind of open debate not only promoted a deeper sense of awareness of intangibles (as opposed to the firm’s tangible assets), but also provided at least two opportunities for clarifying the legitimacy of IC metrics (1) by reflecting on the intention for implementing the InCaS methodology; (2) by reflecting on the treatment of indicators.

(1) Reflecting on the intention of implementing the InCaS methodology. The InCaS evaluation workshops between the first phase and the second phase of implementation provided an opportunity for all SMEs to reflect collectively on their intentions for implementing the InCaS methodology. This kind of critical reflection was not concerned

with the *how* or *how to* of action, but with the *why*, i.e. the premise for and the expected consequences of implementation.

“I asked them (SME directors) ‘why did you choose InCaS’ and they gave me all sorts of answers ... after Phase I, they recalled their original intentions or expectations ... laughed and said even if InCaS can’t assist them getting a loan, can’t prove itself to be a better management tool than other tools on the market, the essence of its methodology puts people first and that’s what they really need” (DF, trainer).

(2) *Reflecting on the treatment of indicators.* In the InCaS evaluation workshops, the open debate about the ambiguous nature of indicators did not prevent SMEs from appreciating the value of measuring IC. On the contrary, it prompted critical reflection on the treatment of indicators that opened up the measuring paradigm. This kind reflection captured the subtle difference between “measurement results” and “measurability”, which further related to the distinction between “management control” and “manageability” (Gowthorpe, 2008, p.830). Ultimately, IC indicators reveal the hidden factors to managers so that they at least know what is there to be measured and managed (measurability and manageability), and yet this visibility did not imply the necessity of performance management for the purpose of imposing managerial decisions (measurement results and management control).

“In the evaluation workshop, we had a session debating about indicators... the director from B-Firm explained to others that the accuracy of indicators is not so much important as its indicative role to the path of value creation... they concluded ... indicators are like moving signposts, you know, they are useful only when management know which route to take ... it cannot be the other way around” (MW, country coach).

6.1.2.2 Learning from critical reflection: IC Lifeworld-in-System

The nature of critical reflection is self-assessment of assumptions – both those of others and those governing one's own beliefs, values, and judgements (Mezirow, 2009). As regards IC reporting, Habermas's theory of Lifeworld and System contrast offers a unique insight into critical reflection through the construction of a Lifeworld-in-System perspective, i.e. thinking of 'IC Lifeworld' in parallel with 'IC System'. From a linguistic point of view, the later is primarily concerned with the use of IC as an ideological discourse for reinforcing the impact of economic and bureaucratic decisions in an organisational context, whereas the former seeks to depart from this attempt by bringing in conscious and explicit debate on the legitimacy of IC metrics and its related knowledge. The distinction between 'IC Lifeworld' and 'IC System' is only a conceptual one, however, placing them side-by-side will help us understand the power structure in organisations. Power, in a Habermasian sense, is one of the steering mediums of System, which is embodied as authority's administrative action that imposes external constraints on agents (Finlayson, 2005, p.55). Dealing with the politics of power was a painful process that every IC project team should be prepared to confront at some points. One of my interviewees contrasted two Spanish SMEs that he worked with, one of them turned out to be only firm that expressed explicitly the dissatisfaction with the InCaS project, and the other one was S-FIRM, whose successful transformation results surprised everyone.

"In one firm, the politics of power, the lady in charge was a bit difficult. ... She said we want people to innovate, to learn, but not really, she was spying around. People were scared of her. Her right hand person was the project leader, and she said the team wanted to do ABCD, the lady in charge was like 'no, no, no, no' ... In a way, InCaS showed this person and her team members, not the boss, there are things that they can improve. The

right hand person realised she had the will to follow what is right, so she quitted her job. Guess what, the boss blamed InCaS for her leaving, but she must be shocked that her old school kind of gesture is not gonna work ... things were dramatically different in S-FIRM, where the project team's several proposals were accepted by people who had decisional power and were willing to put change into place'' (MR, research assistant).

In response to the hidden power discourse in organisations, a call for the re-composition of IC project teams began to emerge during the Phase II InCaS evaluation analysis. This strategy sought to transform an IC project team into an IC community by following the Lifeworld principle of pooling shared cultural and linguistic resources together. In doing so, wider participation across various business functions or units of the focal organisation is encouraged, and subsequently employees' skills in uncovering the hidden biases in their business practices are enhanced (Fairtlough, 1991, p.561). This emerging strategy provided a more solid foundation for the following discussions on IC artefacts from a Vygotskian perspective. Since Habermas and Vygotsky took up the same ontological position, our understanding on IC communities can be improved by drawing on Habermas's distinction between System and Lifeworld. As O'Donnell *et al.* (2003b) argue, project teams have clear boundaries and that means they have to follow the instrumental logic in terms of performing independent tasks and managing objectives through a work plan in a restricted domain of activities ('IC System'). In contrast, communities have permeable boundaries and they may function in accordance with the communicative logic that supports the creation of interdependent knowledge and know-how towards organisational actors' self-chosen end ('IC Lifeworld').

“People that were part of the project team were interconnected with other employees in their respective companies... in Phase II InCaS, membership of the workshop was not fixed anymore ... no matter which department or function ... everyone can join the discussions, depending on the topics and their time” (VJ, country coach).

6.2 A learning paradigm in the field of IC: a Vygotskian analysis

Engaging with IC practice in a business community can be understood as a process of ‘mediation’ (Vygotsky, 1978): through structured participatory activities and interactive IC artefacts, SME participants’ natural perceptions of IC were transformed to a systematic way of thinking, which became socio-culturally meaningful to their local practices. This transformation benefited most from appropriating mediating tools, such as concepts and models. The product of mediated transformation was the internalisation of an important criterion of IC practice, i.e. systematic, which can be witnessed through four inter-related developmental phases. In what follows, I will specify the role of participatory activities and interactive IC tools as well as their impacts on the formation of an internalised criterion of IC practice. It is worth noting that the scope of a Vygotskian analysis covers various business functions or units within a focal SME. Figure 8 depicts the triadic representation of mediation that centres on participatory activities in the context of the InCaS project.

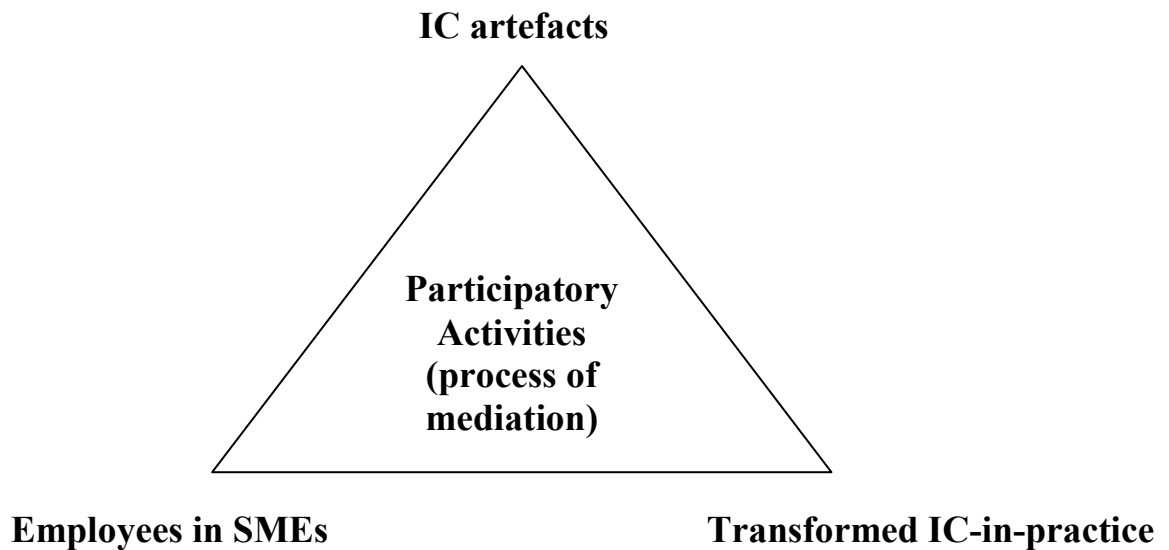


Figure 8: Triadic representation of mediation within InCaS

6.2.1 Mediation: IC as boundary objects

In the context of the InCaS project, the ICS procedure model (Figure 9) is not only a model that specifies the steps of implementation, but also a structure in which IC-centred activities are arranged. According to Vygotsky (1979), an individual internalises socio-cultural meanings by participating in common activities with other human beings.

Participatory activities, therefore, are the key to the success of mediation. All my interviewees mentioned that some activities were of less value than others, and the cause of difference seemed to be: only participatory activities with a clear focus of gave new meanings to local practices could orient toward the creation of a use-value (Miettinen and Virkkunen, 2005, p.444). Participatory activities entailed the interaction among SME participants and the mediating objects of their joint activity. It is also worth mentioning that in the course of implementing IC reporting systems trainers played the role of “more knowledgeable other” (Voygtsky, 1978) in effect. They equipped SME participants with preliminary knowledge and skills so that they were able to address their specific problems along a new line of thinking. Altogether, trainers and SME participants opened up a new path for collaborative learning.

“We help SMEs grasp the basic meanings of IC and other concepts... I think the minimum knowledge on these concepts was absolutely crucial since it enabled people to start a collaborative learning process” (BM, country coach).

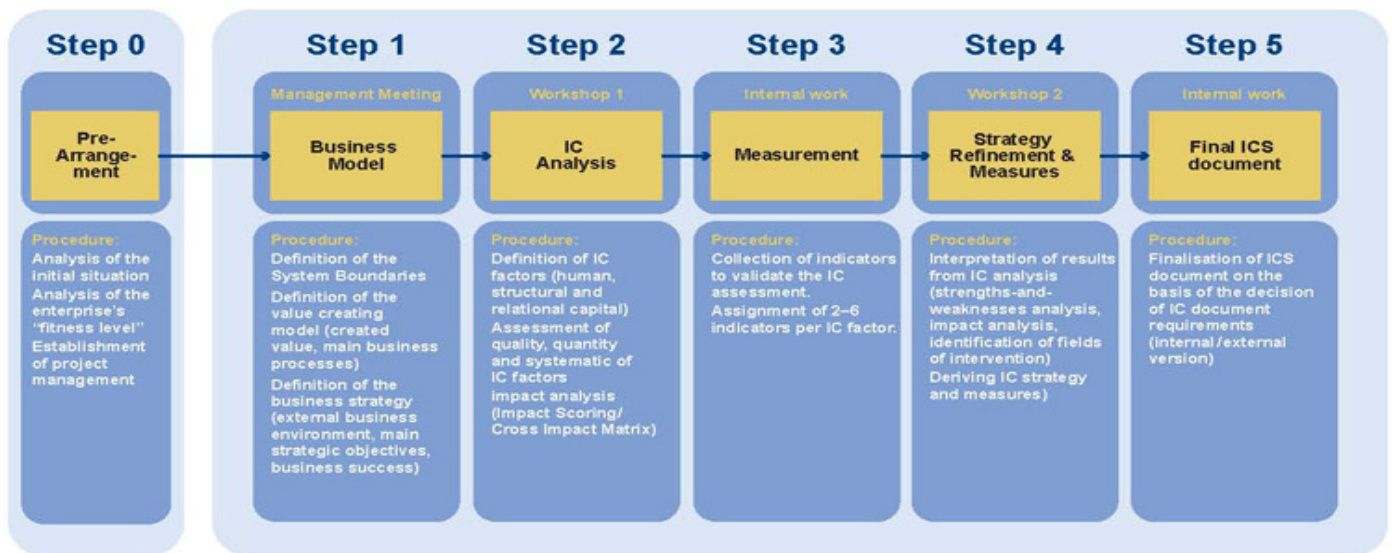


Figure 9: Structured activities in the five steps of the ICS procedure model
(Source: European ICS Guideline, 2008)

6.2.1.1 Opportunities for contextualising IC in SMEs

The InCaS methodology sought to contextualise IC in each SME in the following two ways.

(1) It provided a generic language and visualisation tools, which enabled SMEs to make those invisible aspects in their organisations visible. (2) By showing the interconnections between their strategic objectives, business processes, and IC factors, as well as the potential areas for improvement, it pushed SMEs to engage with certain actions so as to improve their day-to-day business processes by focusing on selected IC factors according to their own choices.

(1) *Making the invisible visible*. The word ‘visible’ here has twofold meanings. On one hand, the InCaS methodology introduced a generic language of intangibles to SMEs, which helped them bring those intangible aspects of their businesses into the conscious level by giving names to things. These names, concepts, and relations, then became a repository that took the form of a shared language between /within SMEs and the RTD Group.

“I think you make visible your intangibles, because you have a path, a concrete and visible path, for example ‘social competence’, you know what the concept is, you then realise which part of your business processes need it, you also know where you want to go, the strategic objectives and the links with these processes... I think InCaS helps to visualise this” (EC, research assistant).

In relation to the function of this intangible language, some of the visualisation tools, such as the ‘Cause-Effect Analysis’, were particularly helpful to materialise this visibility²⁷. For instance, Figure 10 depicts the interconnections between a firm’s IC factors, Business Processes (BPs), and their self-perceived Business Success (BS). It is the network representation of IC-in-practice. Arrows departing from one factor was intended to account for the degree of influence in terms of density and strength on the rest of factors. Looking at the ins-and outs, SMEs were able to gain a good estimation of the collective leveraging effect of IC factors on their business models. Clearly, these visualised interrelations reflected the role of IC in support of SMEs’ day-to-day business processes and business success. More importantly, ‘shared meanings’ can be produced while SME employees work out the interpretative differences of what a particular word, measurement, or outcome mean in a specific problem definition.

²⁷ For some reasons, this powerful instrument of visualisation was only applied in Spanish and German SMEs, and therefore the rest of SMEs were unable to experience the benefits of visualisation.

“The visualisation is very powerful as it shows you directly what kind of impact those soft factors have on business success ... as a gut feeling, people in their various functions, at least know, they have a complex system that makes everything inter-related to others” (MT, IC expert).

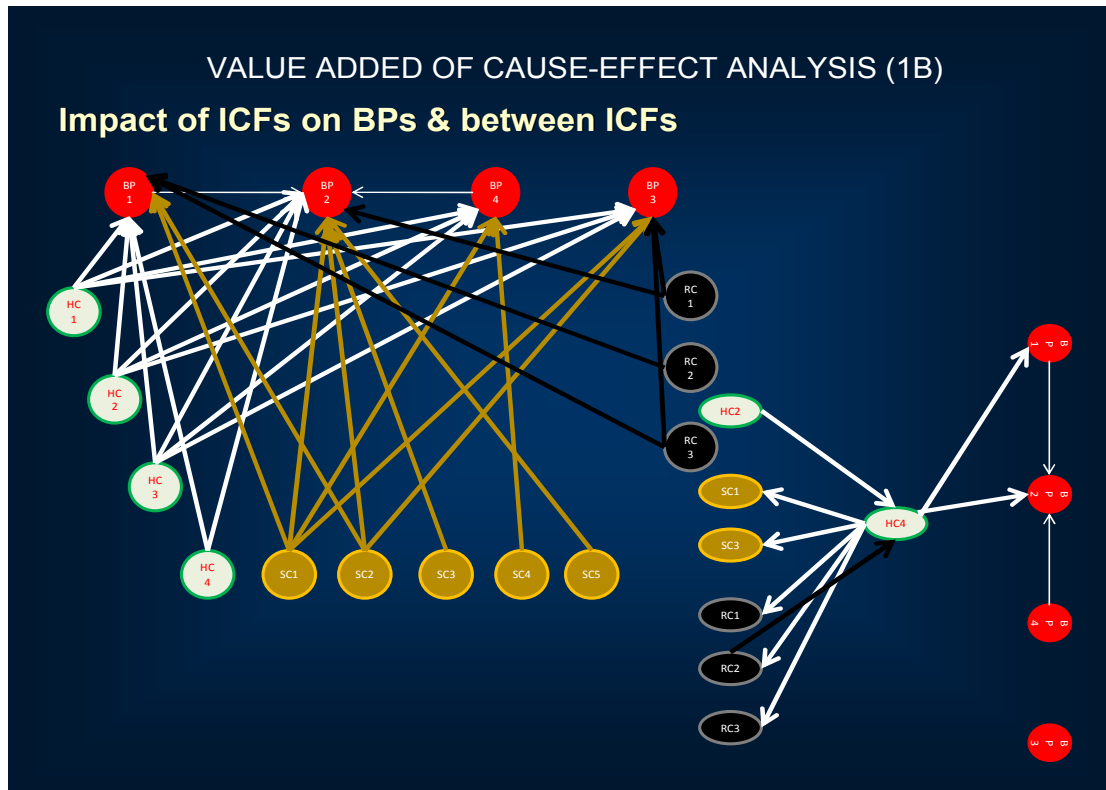


Figure 10: An example of IC cause-effect analysis

(2) *Coming to an informed action.* It is worthwhile mentioning that almost every SME in Phase II InCaS decided to focus on a limited number of IC factors according to their deliberate selections, and many of them even came up with their own IC factors, which were not included in the original InCaS methodology. This phenomenon reflected that both the RTD Group and SMEs realised the importance of and perhaps became more confident to locate relevant information about IC in a specific business context. This effort enabled SMEs to focus on those most crucial to their businesses rather than going through a list of ‘standard’ factors for no purpose. For the same reason, the corresponding time for data interpretation and decision-making was saved as well. Among various IC artefacts, the ‘IC

Management Portfolio’ received particular accolades for its capacity to bring to the surface different interests by imagining different decision-making paths and impacts. As Figure 11 shows, by placing SMEs’ self-selected IC factors in a four-quadrant matrix, the ‘IC Management Portfolio’ displays the future potential and the need of intervention depending on the assessment of the status quo of IC factors (through the ‘QQS’ task) and the relative importance with regard to the strategic objectives (through the ‘cause-effect Analysis’).

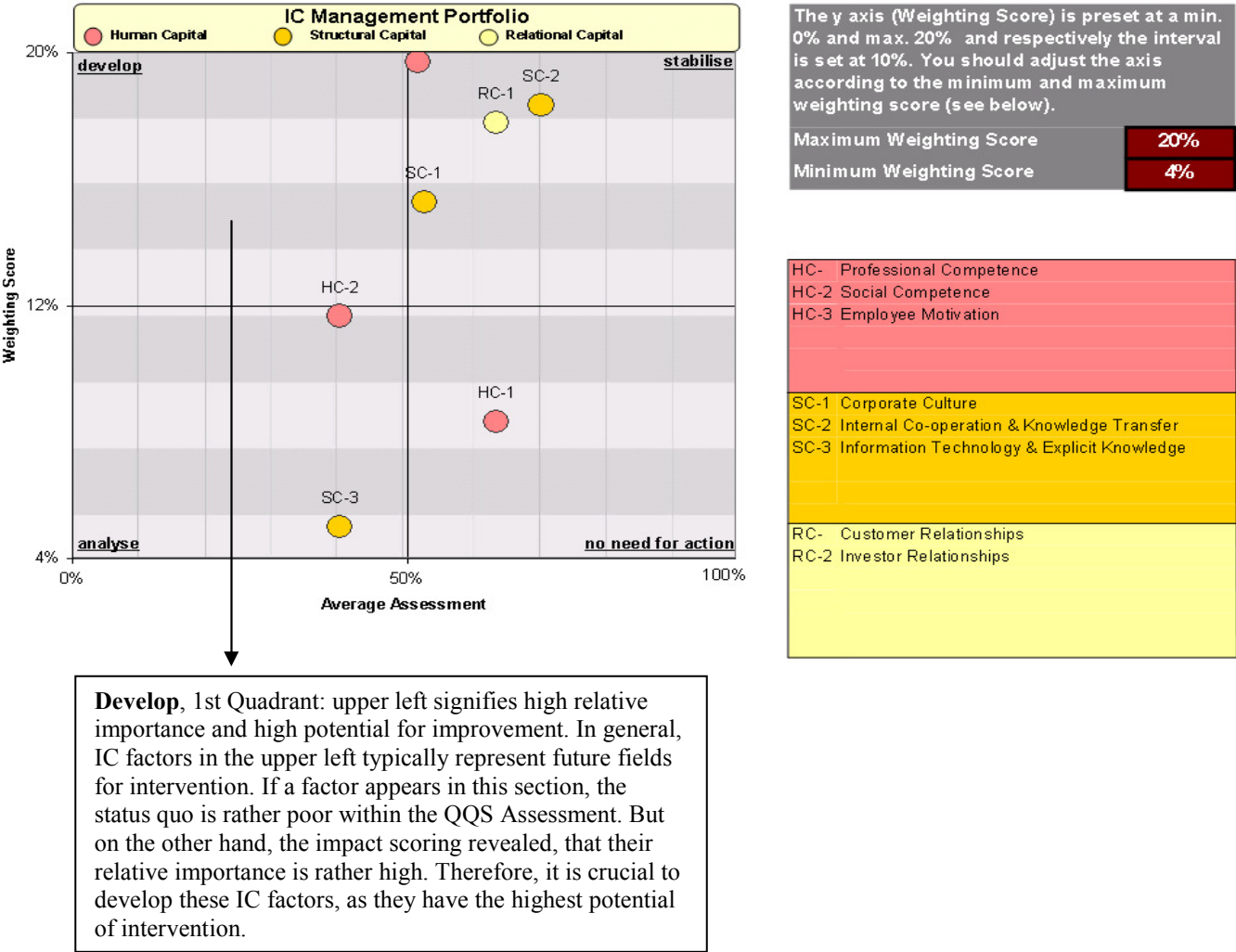


Figure 11: Coming to an informed action – the IC Management Portfolio

According to my interviewees, the use of this analysis had more to do with ‘what could be done to improve the situation’ than ‘how accurate the information was’. While the X-axis illustrates the improvement potential of each IC factor, the Y-axis shows the importance of this factor in relation to SMEs’ desired business success. The discussions, re-interpretations, and imagination revolved around this analysis proved the use of boundary objects in terms of granting ‘interpretative flexibility’ to participants, but more importantly boundary objects did enable participants to come to an informed action. In this sense, the ‘IC Management Portfolio’ was regarded as the most aggregated visualisation of IC analysis that can be used in the same way as a map for SMEs. Following this analysis, trainers helped SMEs work out a more specific action plan, including their desired results and objectives, approaches to develop particular measures, time frame, and assignment of responsibilities and resources. In doing so, most SMEs felt the push to prioritise their time and resources so as to bring out their desirable changes.

“The real value of this analysis (‘IC Management Portfolio’) is that employees in SMEs started to think of their present-future all together” (CL, trainer).

6.2.1.2 Learning from mediation: IC as a boundary object

As Mouritsen (2006, p.837) argues, when the concept of IC is seen as a boundary object, the focus of practice in the field of IC shifts from asking questions, such as ‘what is IC’, ‘who owns it’, ‘how valuable IC is’ (the essential elements), to another set of questions, such as, ‘what does IC do’, ‘where is IC located’, ‘how is IC related to value creation’. The second set of questions suggested that the search for essential elements of IC is problematic, however, loose but interrelated information can be found in general boundary objects. IC as a boundary object has two functions. First, it makes the invisible visible. For instance, the

visual representation of the interdependences between a firm's strategic objectives, business processes, and IC factors not only makes visible the complexity of organisational system in each SME, but also shows how "small changes of one or two parameters could have significant, emergent, and urgent effects on the entire system" (Cauganesan and Dumay, 2009, p.1162). To this end, the dynamics of the concept of IC can be revealed rather than reduced, since the visual representation shows SMEs their potential of achieving a 'systematic' effect. Second, it facilitates decision-making by identifying the potential courses of action. For instance, the 'IC Management Portfolio' allows participants to interpret, conjecture, and communicate with data, and then to reach a decision based on the information gathered together. Moreover, the implications of possible decisions and action decided can also be imagined.

6.2.2 Internalising/Externalising the 'systematic' standard

One of the major barriers to SMEs' sustainable development is that they generally lack the willingness to dedicate time and resources that are necessary to resolve their lack of understanding, knowledge, and skills in strategic innovation (Chapman *et al.*, 2000). Conventional management instruments and balance sheets do not cover the 'systematic' requirement of IC management. The InCaS methodology recognised that a business that does not create value in a systematic way is not sustainable (European ICS Guideline, p.10). In this respect, the 'systematic' dimension accounts for a large part of SMEs' sustainability. Hence, internalising/externalising the 'systematic' standard became a key for SMEs to match their business models with their intangible resources so as to be able to identify and capitalise on market opportunities.

6.2.2.1 Opportunities for the systematisation of local practices

For most SMEs, the successful mediation of IC artefacts enabled them to internalise a systematic way of thinking of IC management. On the one hand, the ‘QQS’ analysis presented the ‘systematic’ standard to SMEs for the first time in Phase I InCaS. The literal meaning of ‘systematic’ within the ‘QQS’ analysis was concerned with how regularly or routinely would a firm take measure to care for their IC factors. At the end of Phase I implementation, every SME was asked to develop an action plan in which specific details were fleshed out with regard to the ways of improving their selected IC factors. By the time of Phase II InCaS, trainers and SMEs were able to measure once again the same batch of IC factors that they dedicated to improvement. Whatever the results might be, most SMEs internalised the meaning of ‘systematic’ since they went through the cycle of measure – improve – measure again, and this was exactly the ‘systematic’ dimension was about.

On the other hand, the literal meaning of ‘systematic’ was expanded when the ‘Cause-and-Effect’ analysis was performed in the Phase II InCaS evaluation analysis. The visualisation of this analysis conveyed a clear message to SMEs that the interdependence between their strategic objectives, business processes and IC was the key area that they should work on in order to achieve ‘systematisation’: a more sophisticated way of thinking and doing that gave alignment through communication and action to the task, expectations, skills and knowledge that the staff has. The empirical phenomenon to support the idea of ‘systematisation’, as an extension of the ‘systematic’, was that employees in SMEs became more capable of linking the ‘systematic’ standard to their daily life, i.e. to find out the individual IC factors affecting the business processes in which they played a part. It is worth noting that this phenomenon was a result unique to the InCaS Phase II evaluation analysis due to the adoption of the ‘Cause-Effect Analysis’.

“I would not say that SMEs did not manage their IC at all. Yes, they did but there wasn’t systematisation ... the turning point was the ‘Cause-Effect analysis’ ... people began to ask ‘where is my HC piece in the daily process that I had’” (BM, country coach).

From a language point of view, the internalisation of the systematic standard has at least twofold meanings: (i) SME employees have to become familiar with a new term, which only works when it allows expanding a conceptual territory so that, (ii) a relational language that belongs to the local reality is formed, which helps them understand the practical implications behind this word, i.e. in their day-to-day work practices. The result of internalising the ‘systematic’ was externalised as a series of follow-up actions that sought to improve the day-to-day business processes in SMEs. Hence, the externalisation of this ‘systematic’ standard was manifested by SMEs’ engagement with certain actions that contributed to the systematisation of their strategic objectives, business processes, business success, and IC factors continuously. Herein, the subtle distinction between ‘systematic’ and ‘systematisation’ can also be understood as the results of externalisation, i.e. through communication and action, the materialised meaning of the ‘systematic’ standard was enriched and contextualised.

“People in the company have a fair idea of where a particular word is used and what lies behind it and I think this is part of the systematisation” (PH, country coach).

6.2.2.2 Learning from internalisation/externalisation

As Vygotsky (1978) predicted many decades ago, internalisation is never going to be a simple and linear process. In the context of the InCaS project, the process of internalising a

‘systematic’ standard of IC management brings about the results of engaging with certain actions (externalisation) that helps the ‘systematisation’ of a firm’s strategic objectives, business processes, and IC. This cyclic relationship between internalisation and externalisation is the reflection of the private and the public displays of learning. The tension between these two displays propels organisational change and innovation by means of aligning the task, expectations, skills and knowledge that a firm’s staff has. Towards the end of the Phase II InCaS, the concept of IC networks emerged as a substitute for IC communities. The subtle difference between these two concepts lies in the fact that the former embodies the need of creating a physical and psychological space for learning that not only allows systematisation to be achieved within a firm, but also goes beyond the physical boundary of an entity so as to enable a further effect of ‘systematisation’ via building network connections.

6.3 A learning paradigm in the field of IC: a Deleuzian analysis

A Deleuzian reading of a learning paradigm in the field of IC shifts the focus of attention from structural disruptions, as indicated in the dialectical dynamics of communication, to creative disruptions that are embodied in the individualised experiences of encountering. A Habermasian reading created the shared intentionality that prevented the dark side of IC from happening (what IC should not be); a Vygotskian reading encouraged different interpretations within an activity system by transforming IC-in-practice (what IC does in practice); a Deleuzian reading, eventually, explored what IC could be by predicting on the notions of difference-in-itself and multiplicity. By its nature, a Deleuzian reading connects IC reporting with the business environment or an image of the anticipated future in which SMEs explore the relations they establish with their suppliers, vendors, and clients etc. As such, SMEs would soon realise that the internal process of systematisation is not enough to

achieve their goals without aligning strategies with their external stakeholders. In what follows, I will focus on three emergent phenomena that became prominent both at a conceptual level and a practical level towards the end of the InCaS project. From there, I discuss the possibility of making IC practice a point of departure for networking, in which IC events, IC leadership, and IC concepts served as creative assemblages that prepare a firm's rhizomatic becoming.

6.3.1 Assemblage

There were three kinds of assemblages that gradually became prominent in the context of the InCaS project, IC networking events, IC leadership, and IC concept. At first sight, these phenomena were little different to the familiar descriptions of an event, leadership, and a concept. All of them, however, increased in dimensions of a multiplicity and therefore made the familiar descriptions of (1) event, (2) leadership, and (3) concept, strange.

(1) IC events

IC events referred to those emergent activities or repercussions after the production of IC Statement, such as knowledge transfer meetings and their spin-offs. All of those events were not planned in the first place according to the official European ICS Guideline²⁸. However, those events followed a rhizomatic approach, which focused intuitively on building connections between SMEs and their stakeholder groups. Figure 12 shows how IC events blurred the boundary of each organising entity and thus disrupted a set of dialectical relationships that used to influence the way SMEs organise themselves, such as internal and external, formal and informal, separated and connected, discontinuous and continuous.

²⁸ The official European ICS Guideline is an improved version of the original InCaS methodology, which incorporated the extra modules proposed by InCaS RTD partners.

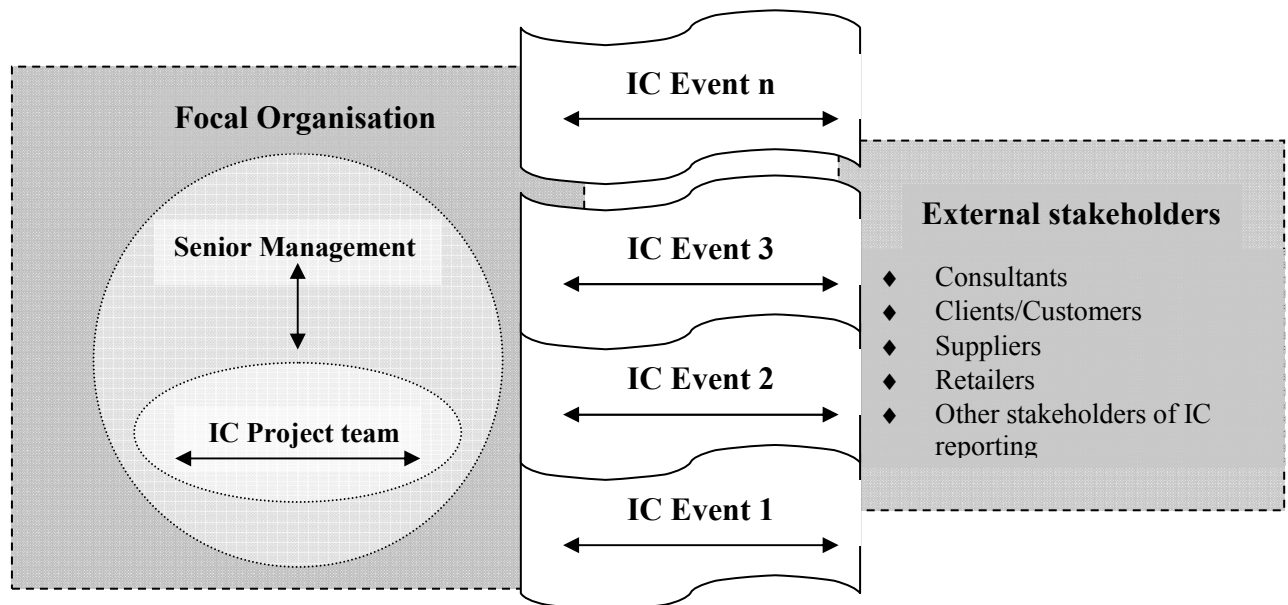


Figure 12: The role of IC events

IC events as occasions for problem solving

IC events are events that depend on a flowing process engendered in IC practice. On the one hand, they served as problem-solving occasions and inform people about when and where a particular event is held. On the other hand, they created a sit-together chance for event participants to go through the problems or difficulties in their various operational contexts. This kind of event privileged the actualisation of the action plan that SMEs worked out at the end of the InCaS project. Since IC has a fluffy domain that penetrates into almost every aspect of organisational life (O'Donnell and Berkery, 2003a), IC events might involve different stakeholder groups, such as employees, suppliers, and clients/customers, and thus the boundary between organisations and their external environments became blurry. Stakeholder groups might be summoned by the focal SME for the purpose of solving a specific problem, such as knowledge-transfer between older generation and young generation. On such occasion, the focal SME should start from explaining why and how they need the collaboration of each party in order to make their action plans possible. The foundation of their problem solving logic might be traced back

to the results and the implications of implementing IC reporting systems. Successful problem solving as quick wins enhanced the confidence and trust between participants.

“Engaging with actions is problem solving in reality, if this process is successful, it will generate quick-win effect that will increase the confidence and trust among actors” (LE, IC expert).

IC events as opportunities for networking

Apart from the specific problem-solving agenda, many SMEs recognised a different value of IC events: as opportunities for networking, such as learning a new business language, skills; developing a relationship with new clients; exchanging business information, ideas, and support. Networking entails a flowing process of establishing a mutually beneficial relationship with other business partners, current or potential clients and customers. Events, in a Deleuzian sense, abstract from their current states of affairs so that the transformative potential inherent in a being can be laid out. Hence, they always impregnate what comes next as new possibilities and are subject to how the improvisation of human discourses are generated and dependant on space, time, and the particular conditions under consideration (Yu, 2006, p.337). From one-off activity (a single event) to networking (a series of events), IC events moved from the actual dimension of simply going through what happened at a particular temporal-spatial point towards the virtual dimension that counter-effectuates the agenda of current events. As such, IC events as opportunities for networking encouraged experimentation, i.e. making or appreciating a series of events in the problematising fields (*ibid*). In practice, this virtual dimension of IC events can be enacted by participants’ projections of a desirable business environment within which they can co-conduct business in a safe and innovative manner. The focus on business environment was born out of a

shared context that the current conditions of doing business in Europe (as SMEs) were becoming challenging.

“Networking is an open field of experiments ... against current economic climate, people are more keen to learn about new ways of doing business ... it wasn’t systematic management any more, it was exploring the unknown” (AVP, research assistant).

(2) IC leadership

At first glance, IC leadership seemed to refer to a new form of leadership, which had emerged from the process of implementing IC reporting systems, and yet, its meaning is far richer than that. On the one hand, IC leadership was actualised in the measurement of leadership competency as a common IC factor registered under the sub-category of Human Capital; on the other hand, it was virtualised through a leader’s changing roles as facilitators, teachers, and learners during IC networking events. This changing role embodies the meaning of leading from behind. Hence, IC leadership has the capacity to affect and to be affected in a Deleuzian sense – it is through this that a new sense of power came into being.

Leadership competency

In the context of the InCaS project, leadership competency has two-fold implications. First of all, leadership ability as a common IC factor registered under the sub-category of Human Capital was more concerned with a set of properties that an ‘ideal’ leader could aim for, such as the ability to administrate and motivate employees, to develop strategic visions, to influence stakeholders etc. Second, leadership instruments/tools as another important IC factor registered under the sub-category of Structural Capital gave importance to the

physical means that supported the efforts of strengthening leadership, such as the information paths incorporated in the senior management's decision-making process. The emphasis of measuring leadership competency as a crucial component of IC showed every leader what he or she could contribute with his/her capability of leadership to retain and even create a new pathway to management. However, it has to be emphasised that the exercise of measuring leadership competency would never be meaningful without making IC leadership a flowing process, i.e. changing management style.

“Leadership competency was a component of HC (human capital) ... it set an ideal example of what a leader can aim for ... it was healthy to find gaps in their management style, and then act upon them one by one” (JJ, trainer).

The changing roles of a leader

Although leadership competency actualised what a leader could aim for from an IC perspective, the image that a leader is a hero or transformational savior enlarged the gap between leaders and their followers. In this regard, the measurement of a leader's competency made little change to those mainstream discussions of leadership stemming from a managerial perspective. However, the measurement results did stir or even upset some leaders' emotional status when the gap was too large to meet their self-expectations. Toward the end of InCaS Phase II evaluation analysis, the meaning of IC leadership took a radical turn due to the emergency of a series of IC networking events. At such events, SME leaders became facilitators whose responsibility was to make sure every participant could make his/her voice heard. At the same time, they became humble learners who learned to absorb and process different information in order to initiate action. It was also true that they were teachers who fed back to other participants when they made an enquiry. Even for

those events they could not take part in personally, they became a cheerleader for or a mentor to those champions of action at the forefront. These changing roles rendered different identities to a leader and therefore enabled him or her to step out of the typical role of a leader whose power is largely defined by status (Clegg *et al.*, 2005). They were, in effect, enacted by the intrinsic capacity of SME leaders to suspend systematically and consistently all other personal or organisational aspects that do not bear upon the roles (Kallinikos, 2004, p.21).

“I have to go back to the leadership issue, I would call it ‘strategic leadership’, why? Because it is about who you can relate to, in a way that people actually listen to you and vice versa” (MW, country coach).

(3) IC concept

IC concept refers to a specific linguistic phenomenon that is associated with intangible aspects of organisations. This phenomenon emerged from the process of implementing IC reporting systems in SMEs as well as the follow-up IC networking events. In line with Deleuze and Guattari’s (1991) philosophy that a concept is an intensive multiplicity inscribed on a plane of immanence, IC concept, on the one hand, tracked the behaviour of things in relation to a plane of reference already there, such as time, space, causality; on the other hand, it mapped the range of connections that a being is capable of, i.e. its potentiality. In the context of the InCaS project, the actual and the virtual dimension of IC concept were exemplified in the discussions of “IC is” and “IC as”. In between these two, a new sense of readiness, which was experienced as a positive energy and an enthusiasm, was nurtured for cultural change.

IC concept as a technical language

IC concept as a technological language is mainly concerned with the concrete meanings of IC vocabularies and terminologies that can be used in the process of implementing IC reporting systems, such as the definitions of IC and its sub-categories, strategic planning, innovation etc. These terms represented an intangible aspect of organisation, which painted a new picture of those soft factors hidden behind a firm's day-to-day operation. Because of the introduction of these new terms, SMEs were able to pay attention to the corresponding behaviour of a being in their daily life. Gradually, new terms were integrated into the SMEs' daily life and became a familiarised language for everyone who was part of a non-linear process of learning.

“Language was the reason that most companies wanted to follow up the InCaS process, and they won't stop there, because once they became familiar with the new vocabulary, it helps understand the behaviour of things in their businesses” (EC, research assistant).

IC concept as a rich language

The virtual dimension of IC concept went beyond the concrete meanings of terms or vocabulary. Instead of asking what a thing is, IC concept was transformed into an intangible that enabled connections building between SMEs and their stakeholders. Based upon their familiarisation with IC terminology as a technical language, SMEs demanded an individualised language that could transform their organisational contexts with the help of their stakeholders. What they were looking for was a rich language that not only provided a different way of generating stories about what is, what could be, and what could be done about it, but also generated a different way of understanding the context in which such stories and potential actions are situated (Humphreys and Brézillon, 2002). In this regard,

IC concept as a rich language was relational, metaphorical, and individualised. It did not prescribe the results of IC reporting, but opened up opportunities for exploring what IC practice might lead to. As a rich language, IC concept was a friendly gesture as if an invitation letter was written to all: stakeholders and the focal SME became the co-authors of their IC stories. This, in effect, created the legend.

“Because we are human beings, the way we relate with persons... is somehow intangible... when you go to a shop, if the person really is empathetic, he is very prone to show you a lot of things... that is what we call ‘social competencies’ in the InCaS language, and that is absolutely an intangible that we all as customers value... now when they (SMEs) get to a client, they understand the richness of this language, and they will receive a smile, more euros, or whatever it is from the other side of the table” (BM, country coach).

6.3.2 Becoming

The commonality of the three assemblages mentioned above is that all of them enjoy a pure form of difference that enables a being to differ from itself. The pure form of difference as ‘abstract machine’ (Deleuze and Guattari, 1988) leads toward the virtual. In the context of the InCaS project, the creative becoming double captures the process that IC becomes affect and affect becomes of IC: IC leadership becomes a sense of care and reputation, and this sense of care and reputation spawns new talents – the action champion in various domains of practice within S-FIRM (as new Human Capital); IC event becomes trusted networking, and trusted networking brings in more loyal and constructive suppliers and clients (as new Relational Capital); IC concept becomes a sense of confidence in that successful IC stories provided a shared context for everyone who got involved in the business processes to shared the joy and success of business, and this sense of confidence

promoted more lively discussions of an IC culture conducive to ethical business conducts (as new Structural Capital). On top of that, these assemblages mingled with each other and dissolved themselves in a rhizome-like formation, i.e. a strategic alliance, at both a conceptual and a pragmatic level.

IC events provided the networking opportunities for participants to discuss a firm's difficulties or problems. At such events, the focal SME not only specified the reasons for and implications of implementing IC reporting systems as well as the associated problems or difficulties they encountered, but also revealed some ethical considerations of transparency in relation to their ways of doing business in a turbulent environment. For instance, SMEs' openness about their operational difficulties under the current economic downturn engendered empathies and trust from their stakeholders. Since transparency is not immediately available by just looking at the measurement results in a report, ethical discussions emanated from an IC perspective may give rise to a common set of values that are both important and acceptable to SMEs and their stakeholders. As the Nobel Prize winner Stiglitz (2002) states, the necessity for increasing transparency and improving the information that stakeholders have about institutional activities would allow those who are affected by those activities to have a greater say. This aspect is the key to making organisation-specific information accessible; and thus it becomes the foundation for collaboration between SMEs and their different stakeholder groups. Consequently, the relationships forged through IC events provided the source of trust that is required for the networks to grow. It can also be inferred that IC events may eventually become a networking machine that forges new connections constantly without dwelling on a firm's taken-for-granted domain of activities (Deleuze and Guattari, 1988).

“I was there (at the networking event) and very touched by people’s honesty with their difficulties and problems, who wouldn’t? ... In the end it is the courage and aspiration that help us overcome the difficulties together, this was very clear to me” (MR, research assistant).

IC leadership was distinguished from traditional leadership in the following manner: first of all, the measurement of leadership competency, from an IC perspective, showed what a leader could become as a transformational hero or a charismatic change agent in an organisation. This idealised image disturbed the emotional status of SME leaders when the measurement results of ‘leadership competency’ did not meet their self-expectations. This kind of disturbance elicited their desire to make a change for the better. Further to that, SME leaders were given opportunities at those IC networking events to experience constant role changing: as a network facilitator, a teacher, and a learner. Even for those events they could not participate in person, they became the ‘cheer-leader’ behind those champions who took actions at the forefront. All together, the pressure of actualising the ‘leadership competencies’ being measured as well as the individualised experiences of becoming-leader in many different ways rendered a new sense of trust and reputation emerged from the leadership’s behaviours of spawning the talent (self and others). This new route to trust and reputation was sustained by SME leaders’ innate desires of becoming a people-growing machine as well as by other stakeholders’ recognition of this creative becoming.

“Let me give you a quote, it’s not from me, it’s from the director of A-FIRM. He said to me ‘leadership is nothing else but investing hopes in people’ ... I want to add something to it, ‘because hopes lead the way out of despair’” (JJ, trainer).

IC concept as a rich language implied the possibility of generating self-accounted stories as a means of conveying a message or idea, be it related to the firm's IC, knowledge management or any other organisational issue. The self-accounted stories have to be co-authored by SMEs as well as their stakeholders, since the purpose of generating stories is not only about imparting information on the recipient, i.e. the potential consumers of IC reporting, but also about allowing them to get inside, to live, and to feel the vibration of an idea. Generating interesting and touching stories shall enable and accelerate change by getting inside the minds of individuals and affect how they think, behave, and feel. During this course, individuals who work together can create, recreate, and co-create organisations and their lives. As such, IC concept as a rich language offers the chance of becoming a context-generating machine, which is capable of moving every collaborative party along the direction of seeing themselves and their organisations in a different light.

“The great enthusiasm alongside the great stories from an IC perspective enabled collaboration across many levels” (MT, IC expert).

6.3.2.1 Becoming a strategic alliance

The rhizomatic becoming of a ‘strategic alliance’ has a two-fold meaning in the context of the InCaS project. At a conceptual level, SMEs recognised the need for aligning strategic objectives between them and their stakeholders. The foundation of this alignment was signified by the active discussions on ‘IC culture’, which referred to a set of management philosophies, evaluation habits, and ethical considerations that can be abstracted from the mechanic assemblages of IC events, IC leadership, and IC concepts. At a pragmatic level, ‘IC culture’ embodies a sense of positive energy and enthusiasm as the containers of affect, such as trust, commitment, confidence, and reputation. Once these containers were enacted

and passed on from one person to another, the intensity of the original affect would be enlarged due to the effect of affective resonance. This effect would propel different bodies of the network, i.e. actors within the strategic alliance, to quest for new tools and new technologies that are capable of making the communication and collaboration between SMEs and their stakeholders possible. It can be imagined that a strategic alliance is a *de facto* rhizome, in which heterogeneous assemblages mingled with each other and dissolved themselves into a local context, in which innovative practices came into being.

6.4 Visualising a learning paradigm in the field of IC

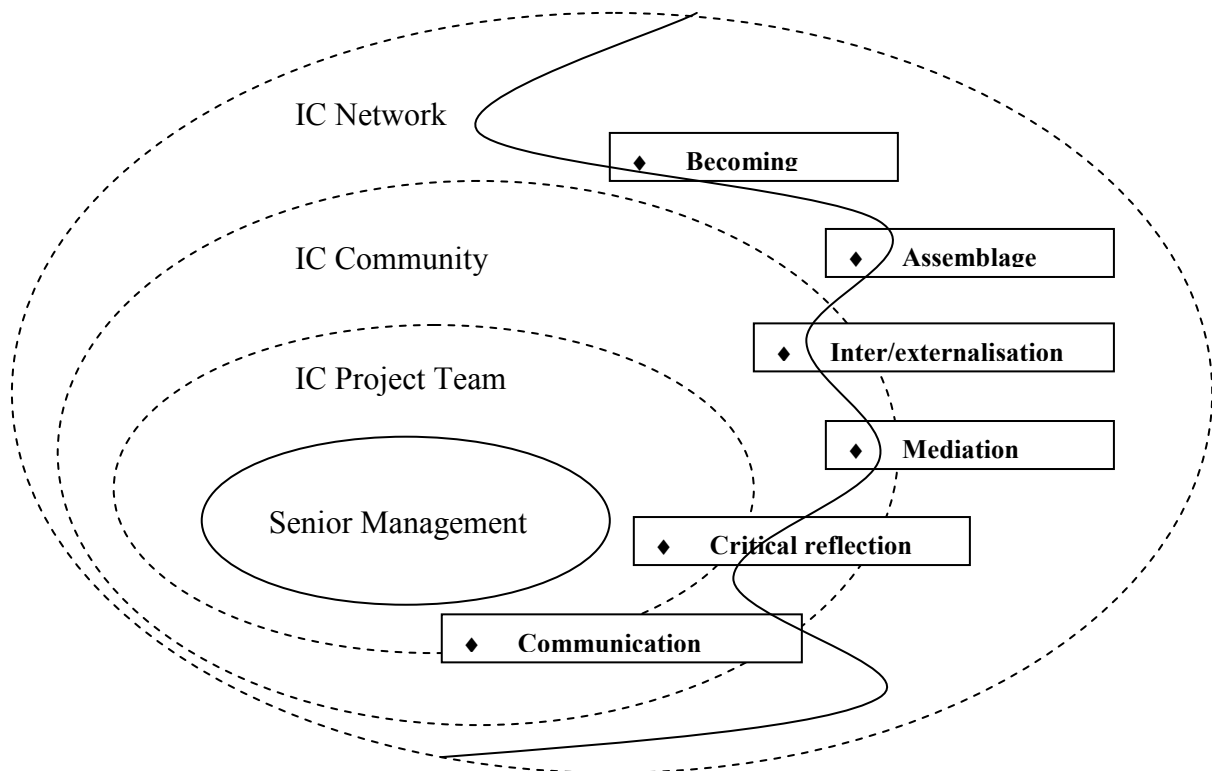


Figure 13: Visualising a learning paradigm in the field of IC

The analytical results of individual discourses presented above illustrate the possibility of establishing a learning paradigm in the field of IC. Figure 13 summarises this paradigm in a diagrammatic form. Except for the oval of “Senior Management”, all the rest of ovals are in dotted lines, which indicate the boundary of the constituent is fluid. The curve sailed

through each process component of a learning paradigm (placed in the text box) symbolises the discursive processes of learning during the course of implementing IC reporting systems in SMEs.

Given a highly uncertain and turbulent business environment, a firm's strategy cannot be associated with specifying and realising some projected outcomes five or ten years ahead (Rostogi, 2003, p.232). As regards SMEs, long term based master plans become unrealistic in face of rapid and unpredictable changes. However, it is possible for them to engage in a sustained process of probing and learning for the purpose of identifying and developing viable strategic options by means of communication and critical reflection. As a starting point, the communicative action inside an IC project team diverted the focus of practice from a (measurement) results-based direction to a process-based direction in the field of IC. Nevertheless, making critical reflections on the intention of implementing IC reporting systems as well as the limitations of IC measurement results was necessary to prevent a firm's senior management from setting unjustified management objectives or rewards after the implementation. In doing so, critical reflection helps to maintain the flow of decentralised dialogues in a Habermasian sense. The SMEs' capacity to generate and expand the nature and range of its strategic options, and exploit the selected options rapidly and effectively, would depend on its overarching meta-capability of IC. Such a meta-capability is partially determined by what a firm knows about its deficits. From a socio-historical point of view, the critical potential that the concept of IC promises can be activated when a firm examines critically what is lacking in its existing system of operation. It is a mindset changing moment when a firm becomes aware of the existence of intangibles, which are usually omitted from the financial statements due to the stringent

recognition criteria in accounting systems. The changing mindset will therefore enable the firm to engage in the process of reformulating its strategy from a critical IC perspective.

Meanwhile, the intra-psychological mechanism of communication can encourage the internalisation of a new reflexive mindset that goes beyond the intuitive understanding of IC and other related concepts. This process can be fostered by means of engaging the firm's employees in a set of structured activities in which meaningful IC artefacts are supplied. By virtue of the IC artefacts that are designed to capture the dynamic interactions between a firm's business strategies, business processes, and IC elements, the materialised meanings of IC-in-practice can be gradually grasped by SMEs in their changed practices. During this process, the involvement of SME employees in a wider range of participatory activities is necessary since the internalisation of a new reflexive mindset is the result of a long series of developmental events. Subsequently, an IC community might take over an IC project team at some point by allowing fluid membership of participation. More importantly, the externalisation of such a new mindset of IC would enable SMEs to engage with certain actions leading to more changes and innovations. From a socio-cultural perspective, the material nature of IC can be captured through visualising the role of IC in facilitating a firm's value creation, which is largely ignored in the traditional financial reporting systems.

Through the identification of a number of assemblages, such as 'IC event', 'IC leadership', and 'IC concept', a sense of positive energy and enthusiasm, such as trust, reputation, and commitment, can be fostered between a firm and its stakeholders. This kind of positive energy and enthusiasm eventually contributes to the formation of a larger assemblage, i.e. a rhizome-like strategic alliance that sustains a firm's 'becoming-without-being' in the

ongoing co-evolution with its business partners. This process witnesses the IC-becoming of affects and affects-becoming of IC, and thus it explains the radical creation of new IC for the firm: IC is no longer restricted to a symbolic construct, whose creation relies on the concept's socio-historical roots. The virtual perspective of IC predicates on the notion of a Deleuzian difference. It emphasises that a rhizomatic dialectics, which is rooted in a firm's daily experiences of making continuous improvement to their local practices, can be observed when the firm and its business partners go with the real, the social, and the symbolic flows driven by the novel combinations of IC and affects in an ever-growing and ever-changing strategic alliance. At this point, an IC community is transformed into an IC network composed of heterogeneous bodies and their interactions.

7. Living a learning paradigm: the case of S-FIRM's stories

“If the measurement system purpose is implemented with a learning purpose, people will change their own behaviours as a consequence of learning”.

– Sveiby, 2004

In this chapter, I analyse the group discussions concerning people's direct or indirect experiences of engaging with IC practice in S-FIRM. Their recollection on the conditions of implementing the InCaS methodology provides me with an insight into the differences between a learning paradigm and the measuring paradigm. Aligning myself with Eco and other post-modernist writers, I decide to reconstruct S-FIRM's stories. The aim of reconstructing their stories is to make the abstract concrete and comprehensible: an operational context is provided for my readers to understand how a learning paradigm functions in practice. Nevertheless, as the caveat offered by Deleuze (1988), stories should never be understood as a trace of behaviour, since they are already a practice that constitutes an act intending to mean something. Here, I wish to present a multiplicity of self-accounts of those who co-authored this story. I trust my readers' discretion to understand the storyline in relation to the construct of a 'learning paradigm' that I elaborated in previous chapters.

As one of the twenty-five pilot SMEs in the InCaS project, S-FIRM's organisational change and innovation in a short time space of only 18 months was simply too significant to be ignored: the InCaS methodology was initially introduced to the Engineering Business Unit (EBU hereafter) in S-FIRM, one of the smallest business units when it was created in the 1970s. Surprisingly, the real implementation processes of the InCaS methodology

involved employees from three different business units, the firm's senior management team covering all the major strategy functions (general administration, finance, R&D), as well as a variety of stakeholder groups (suppliers, clients, employees and collaborators). Towards the end of InCaS Phase II evaluation analysis, the EBU had become the strongest business unit in S-FIRM in terms of revenue and incomes. The starting point of implementing the InCaS methodology was the creation of a non-homogenous 'IC project team' in the EBU: two junior employees had no previous contacts with strategy management before, and two senior employees who were responsible for making managerial decisions. This non-homogenous composition was crucial to identify strategic gaps and existing problems of operation in the EBU.

The success of the EBU's strategic transformation is one of the reasons that I wish to share their stories with my readers as a "good practice" example in the field of IC. More importantly, however, their stories demonstrate perfectly that the implementation of the InCaS methodology can be construed as a collective learning effort. The group discussions conducted in S-FIRM constituted the data corpus for this chapter. My aim of re-constructing the stories in/about S-FIRM was to provide my readers a genuine account of "what is going on" or "what has happened" by listening to the people who explained their IC encounters in their own words. For this reason, I chose to use direct quotes regardless of their naturally occurring sequences. As long as they reinforced the 'intensity'²⁹ of a topic (Deleuze and Guattari, 1994), the quotes are assembled. Some of these quotes might seem a bit long for standard data analysis. However, I held a strong belief that first person narration captured most vividly the personality or the emotional status of a speaker. It is

²⁹ According to Deleuze (1994), 'intensity' is difference-in-itself, which can be explicated by means of differentiated extensities.

better than third person narration, and therefore it deserves a place in a story that requires its readers' imagination and engagement particularly.

The structure of this chapter is as follows: In section 7.1, I will present the full details of the reconstructed story in/about S-FIRM with regard to their first hand experiences of implementing the InCaS methodology. This will be followed by my own reflection on the process of writing S-FIRM's stories. My reflection is, however, by no means additional interpretations of the stories. Rather, they only illustrate the impetus, the ways, and the concerns of writing the case of S-FIRM's stories. As a conclusion, I will draw on the key points of a learning paradigm as manifested in the stories of S-FIRM and explain the extent to which this paradigm can help us understand the innate value of IC practice.

7.1 S-FIRM, IC, Learning for Change and Innovation

Background

S-FIRM is a family owned Spanish firm³⁰ specialising in surface treatments processes³¹. The firm's operational sites cover more than 8 cities in Spain (e.g. Barcelona, Madrid, Valencia, Bilbao). The firm decided to implement the InCaS methodology, as a first step, in its Engineering Business Unit. The General Manager of this division was an active member of this project when he took part in all workshops and implementation tasks. The President, Vice-President, Finance Director, and R&D Director of S-FIRM were informed about the progress of the project and they played an active part in helping define the firm's business model and strategy. Their participation took place with the coordination of the

³⁰ The firm belongs to the Units Group under the same name.

³¹ Surface treatments processes include a wide range of products and chemicals specialties for surface treatment, as well as plants for their application in electroplating, metalworking, lubricants, aluminium, environment, paint, polishing and installation. According to S-FIRM's official website, the firm has a complete range of products and services, a wide geographical covering together with a highly experienced team in this area.

InCaS Spanish trainer. The core business of the firm has always been the supply of global solutions for surface treatment, e.g. chemicals (Chemical Business Unit - CBU), surface treatment plants (EBU), and environmental solutions (Environmental Solution Division - ESD). The turnover of S-FIRM in totally is around 40 million Euros per year, in which 10 million Euros are secured through the EBU. The EBU operates in a market in which customers are middle size companies, particularly in the field of automotive tier 1 manufacturers and tier 1 suppliers, aircraft industry, aluminium for cosmetics and construction industries.

The CBU, on the other hand, is the largest and the core business unit of S-FIRM. It produces all kinds of chemicals for various purposes. Some of the chemicals that the CBU produce are in need of specific equipment or plant in order to be applied. This was precisely the reason that EBU was established in the 1980s - as an appendix of the CBU- providing auxiliary facilitates to meet the requirement of chemical users. Compared to the CBU, the role of the EBU was not clearly defined at the time when the InCaS project was launched, however, the EBU has been trying to become an independent business unit with specific objectives, development plans, and a strategy aligned with the rest of the group. Internally, the tension caused by internal competition for resources and rewards can be spotted easily, and this tension had constrained communication between individuals and organisational units before InCaS. Externally, S-FIRM as a whole faces increasing competition from emerging markets in Eastern Europe and Asia. Appendix VI shows the organisational chart of the EBU.

RC, Vice President of S-FIRM

Thank you very much for coming to see us, we can just explain our experience of how we employed InCaS, and we have chosen one division of our company – the engineering division to start.

JJ, Trainer of the InCaS RTD Group

I have been in touch with S-FIRM for many years. My role in this project was a trainer, but more than that, I was a moderator, a facilitator. S-FIRM was a medium big company with several business units. InCaS was happening in one unit – the engineering business unit.

CC, Financial Director of S-FIRM

It (EBU) was one of the smallest units in S-FIRM in the 1980s ... for just 18 months³², it became the first business unit in terms of revenue and incomes, in such a short period of time the transformation was phenomenal.

RP, General Manager of the EBU

S-FIRM is owned by a family, headquarter is here in Barcelona, Spain, it was created in 1952, it got 56 years experience in the market, it's mainly focused on chemical surface treatment, polishing, vanishing, and electronic coating. After some years of selling chemicals, the company discovered it would be useful to have a mechanical department to supply equipments to coat the parts. That's why we were created, as an additional part of the CBU, to supply the customers with a complete solution.

³² Since February 2007, the first time that the EBU officially engaged with the InCaS project.

JA, R&D Director of S-FIRM

That's our commitment to the customer, we say ok, no worries, we take care, not only to supply you with cleaner, or to supply you with coating, we supply everything, and that is our 'global solution'.

RP, General Manager

We (the EBU) offer engineering services for the design, construction, installation, and after-sales of surface treatment plants, our customers are mainly from industries in France, Spain, German, Brazil, and other countries... we have just found out that one of our main competitors in Spain for the last 50 years decided to close its Engineering Division in Spain and to buy all the installations in China... many companies closed, simply 'to do things' sometimes is not enough.

The ICS processes

The ICS procedure model, consisting of the following five steps, can largely account for the original InCaS methodology, as shown in Figure 14. Starting off from Step 0 'prearrangement', i.e. the contact work between S-FIRM and the InCaS consortium, the Spanish trainer was responsible for coordinating an IC project team in S-FIRM. The team was supposed to go through the five fundamental steps of the procedure model until the final ICS documents with an attached action plan was produced. It is worth mentioning, however, after the production of the ICS, post-activities in Phase II InCaS, such as communicating the project results to S-FIRM's stakeholder groups through a series of networking events, implementing and monitoring the action plan, were brought to the foreground during and after the second phase of the project. Those self-organising and self-emerging post-activities went far beyond what the original InCaS methodology could offer.

As to the five steps, step 1, step 2 and step 4 involved ‘on-site’ activities, meaning that the RTD partners came to visit S-FIRM and helped them clarify their business models (step 1), familiarise them with the IC definitions and IC factors (step 2), and refine business strategy through an IC lens with them (step4). The on-site activities were arranged in the form of group meetings or workshops so that the IC project team could sit together reading materials prepared by the trainer, discussing business issues, and doing exercises together supported by the InCaS toolbox. The InCaS toolbox, developed within MS Excel, provided a range of analytical tools that would allow the IC project team to identify their core business processes or business success factors from an IC perspective. In contrast, step 3 and step 5 were organised by S-FIRM themselves. The ‘off-site’ activities included: identifying IC indicators corresponding to each IC factor that was identified previously (step 3), and producing internal and external versions of the ICS (step 5).

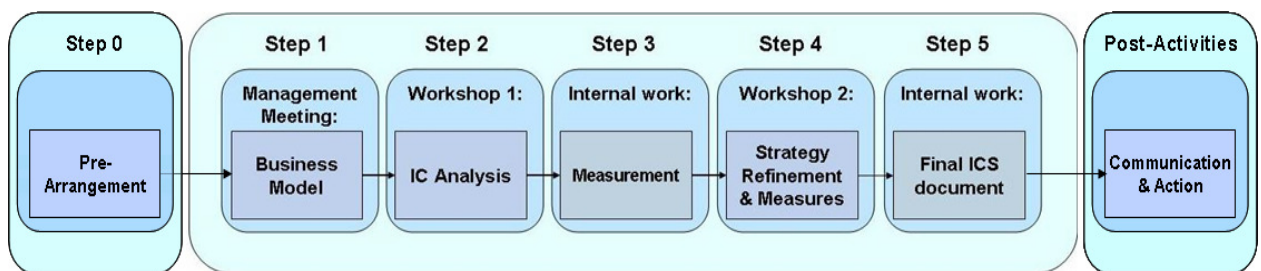


Figure 14: The procedure model in five steps
(Source: European ICS Guideline, 2008)

RP, General Manager:

We didn't know what we were doing at the beginning, we thought it was interesting, but had no idea of what it's about, absolutely no idea.

JJ, Trainer:

We tried to identify any changes in the Business Model that they had defined in the first phase, to evolve the Model, and to follow-up the actions defined by them. We said to them

that the InCaS method is very dynamic, with little effort you may obtain interesting results. Results that help you to understand the intangibles, and offer you a clear action plan. We help companies to identify the intellectual capital factors, and the drivers to improve the company's performance.

RP, General Manager:

In the second phase we seemingly had a bit more detail, what are the interaction between every factors, and how to link them, how to systematise management ... I think we had some surprises in finding out which IC factors are the drivers and we put them to test right away.

BM, Country coach of the InCaS RTD Group

I would say the implementation of the InCaS methodology in S-FIRM made a big breakthrough, particularly because those emerging post-activities during the second phase of implementation.

Settings for the 1st InCaS workshop

The EBU in S-FIRM has 18 full-time employees, 15 of them are based in Barcelona, 2 in Madrid, and 1 in Bilbao. Two senior and two junior employees in the EBU constituted the IC project team. The inclusion of junior employees in the InCaS workshops, whose daily work was far away from strategic planning and management, was a bold decision. This non-homogenous team composition was seen as a new experiment. However, it encountered resistance from both sides in the very beginning: one the one hand, junior employees did not see that they could play any constructive roles in developing and influencing S-FIRM's business strategy; one the other hand, S-FIRM's senior management

was fairly ‘confident’ about their existing strategy and they failed to perceive any extra value of re-thinking their business strategy by just involving junior staff at a department level. The Spanish trainer spotted this gap of understanding the role of participation and he insisted on running the InCaS workshops in an open and transparent manner so that every participant would have a chance to ‘experience’ the strategy for himself or herself.

JJ, Trainer:

At the very beginning, there was a perception from the top management that they had a very clear vision of the objectives: the strategy is very clear and all of it. But it did not coincide with the people that were inside of these processes... in addition, when we went to S-FIRM to run the first workshop, Mr. RP (General Manager) told us that employees on the IC project team did not understand why they should be involved in the project. They felt that strategy was not their responsibility; it was out of their reach.

RP, General manager:

I thought people in my business unit know a little better what are our business strategies, which are the actions that are taking place, but to my surprise, I found out many of these actions were unknown or not explicit while we discussed things in the workshops.

FB, Technician in the EBU:

Strategy in S-FIRM used to go from the top to the bottom... if you are in the middle, the one on above does not communicate or make communication transparent to those below... information is hard to go upwards... the one above you can break communication at any point ... this is something very clear to us privately... but we don't talk about it publicly.

JJ, Trainer:

So I decided, well OK, there is no problem, let's not say anything, not explain anything, we are just going to run the workshops and then we will see... We are not going to convince them, because you don't convince people about this with words, let them live, let them give their opinions, that's exactly how communication is going to work.

Communication as a vehicle

To encourage concern-free contribution from the junior staff, the Spanish trainer suggested that 'ground rules' should be set at the outset of the first workshop. For instance, whenever a question was asked, junior employees were invited to speak first, and then were followed by the comments from the senior members. In doing so, they would not suffer from the pressure of 'challenging' a senior member of the team, especially when there were different viewpoints. These ground rules seemed to create conditions for making communication possible in a way similar to an ideal speech situation (Habermas, 1990, p.86). More importantly, a growing awareness of the importance of communication, not in terms of its content but in terms of its procedure and functionality, was fostered while the discussions generated more insightful thoughts. Herein, communication served as a vehicle for opening up new discourses that had questioned the present, existing, and dominant order and organisational arrangements in S-FIRM. To be specific, it was through the focus on communication that the tension between a top-down and a bottom-up approach to IC management in S-FIRM came to light.

JD, Technician in the EBU:

I think the course of communication is important between us and if information spreads logically we can help each other... I think the information must come from us directly and

fed back to the clients of the EBU... It shouldn't go across from the project manager and then to us.

SC, Project manager in the EBU

The difficulty is to communicate the right information in between. For example, what does the clients want, what did the client buy, and how does the team respond. I had to make a lot of decisions.

FB, Technician:

But the information is not something you say "take this, here is the information!" ... There is an internal way of organising...the basic idea is about a protocol... if this protocol exists, then all the information should serve as a common pattern for all... and the access to this information should be clear too.

FM, IT assistant in the EBU:

What I see is a lack of communication about strategy, a way, or a model. Not the content, but the way we communicate is an important point to unify. We can't talk often because we don't have the overall vision, and we don't know other divisions' strategies either.

RP, General manager:

Some outputs have surprised me and I consider this very positive... the fact that people from different functions at different ages have communicated together determined that results had been different from the one we would have obtained if only I and the General Director sat down and did this exercise by ourselves.

Making critical reflection

In retrospect, critical reflection was probably one of the most important experiences in S-FIRM's implementation of the InCaS methodology. In line with Habermas's Lifeworld-in-System perspective (1984), the IC project team in S-FIRM not only reflected on their intention for implementing the InCaS methodology, but also discussed critically the use of indicators. In doing so, the focus of attention was shifted from defining a predetermined set of indicators in numerical terms to reformulating a reasonable and acceptable strategy to all. To fulfil this goal, however, the IC project team in S-FIRM realised that they needed to follow the Lifeworld principle of pooling shared cultural and linguistic resources together so that wider participation across various business functions or units can be encouraged.

CC, Financial director:

The first claim I heard was it (the IC statement) could be used as a tool for attracting loans... I don't get into this point yet... I did not see what is the value of putting intangibles in a figure ... what impressed me most is to put people first.

RP, Project manager:

Too many indicators only prevented us from discovering what really matters in our business... before accepting the results, maybe we should ask why we chose to focus on A, B not C, and this is basically a strategy question, isn't it?

JV, Country coach of the InCaS RTD Group:

The problem with measurement is sometimes common indicators didn't work, people should be able to add relevant and consistent indicators to fit their business... the premise for that is a reasonable strategy understood by all.

JD, Technician:

We don't have a direct relation with the higher direction... a number of points escape us... our vision is a form of daily point of view... there are things behind the desk, the clients' complains, unexpected changes etc... we need an overall vision.

RP, General manager:

We have seen one of the indicators that we measured in 'employee competence' was the experience in the sector...we have an average of 21 years of experience in the sector, which is not bad ... but the reality is people are still unhappy about a couple of things, even though our 'rotation rate' (another indicator) is low... this says something has been done not so wrong, but we need to make it more aligned with our strategy... the more people appreciate this, the more sense indicators give.

The mediating role of IC artefacts

Mouritsen (2006) suggests that IC should be considered as a boundary object. In the context of the InCaS project, IC artefacts played a role of facilitating the visualisation of the interactions between IC factors, strategic objectives, and business processes. S-FIRM's experiences verified that there are three characteristics of IC artefacts that became useful in joint problem solving at a given boundary. These characteristics reflected the syntactical-semantic-pragmatic approaches that Carlile's (2002) identified in his study of effective boundary objects. First of all, starting from the exercises of visualising the firm's business strategy and business processes, the InCaS methodology seemed to provide an opportunity for identifying a shared language of intangibles. As such, employees in S-FIRM became capable of telling things that they did not how to express in the past. Secondly, the introduction of an IC perspective to examine S-FIRM's business processes provided a

concrete means for individuals to specify and learn about their differences and dependences across a given boundary, i.e. between the EBU and other business units. Thirdly, IC artefacts enabled follow-up activities, such as working out a prioritised action plan and making corresponding changes in their day-to-day practices, and thus facilitated the process in which individuals negotiated their interests and transformed their pragmatic knowledge jointly.

RP, General manager:

At the beginning of Phase II, we understood the importance of relating IC factors with our business model. One of the interesting action is that we cross-checked the importance of IC factor with each other and discovered some of them were not drivers in themselves: they appeared to be important only because their impacts were coming through other factors... more important factors seemed to be related to other BUs more.

BM, Country coach:

We can argue a tool is just a tool, but the process fulfilled in S-FIRM determined the IC tools must be something different. They should sustain a participatory experience across the function or boundary of one particular domain.

SL, Sales specialist in the EBU:

Talking about tools, um, InCaS gave us a language to name things that we didn't even know how to express in the past ... it was a language that made the unseen visible.

FB, Technician:

I personally like the Cause-Effect analysis very much ... the visualisation shows inconsistencies, for example, 'BS4 synergies' with other BUs is one of our goals, but none of our key business processes supports it ... we were blind to notice the fact that stronger BS4 leads to stronger 'BS1 cost' and 'BS6 sales' ... the analysis told us EBU is not a factory similar to our competitors, we design and make machines that incorporate chemical products another BU develops!

SS, Purchasing specialist in the EBU:

The IC portfolio chart showed our business weakness or strength may exist across several business units, and this says again there should be a place for the 'synergy effect' and the associated resources allocation.

JJ, Trainer:

The chart (IC portfolio) tells us the interconnections between items, the relationship does exist, it has been demonstrated in the past, the present leading the future, and the key is the synergy effect between the EBU and other BUs.

JD, Technician:

Speaking of this effect, the EBU and the CBU should collaborate more. Customers buy chemicals first, they find us for machines later... we need the CBU to tell us customers' needs, including their past conditions and future intentions... the information affects engineering time and costs... in the end we are all serving the same customers.

SC, Project manager:

The water department would not exist without us, for this reason, we also need more synergies, and I am sure we can negotiate more details with each of the department.

Internalising-externalising the ‘systematic’

The nature of internalising the ‘systematic’ is about engaging with action that contextualises this standard in SMEs’ local contexts, i.e. an internalised standard that guides the way people think and behave. As Wertsch (1985) notes, a Vygotskian interpretation of internalisation gives prominence to the process where an internal plane of consciousness is formed, and yet, this process must entail social interactions because of the ‘quasi-social’ nature of external reality. In the context of the InCaS project, it was the Spanish trainer who introduced IC or IC-related concepts to S-FIRM in the ICS workshops. However, the interactions among the staff at various positions in S-FIRM helped transform this standard from general knowledge to specific knowledge-in-practice that holds relevance to this engineering firm. This transformation was achieved through actions that gave systematisation to people’s initiatives by generating both knowledge and action flows within S-FIRM. In particular, the invitation of two collaborators of S-FIRM to the ‘Knowledge Transfer Meeting’ witnessed the evolutionary path of the meanings of ‘systemic’: originally, ‘systemic’ was an external standard that described how systematically an IC factor could be managed by the firm. However, S-FIRM managed to come up with new implications according to their specific work settings.

JJ, Trainer:

Taking subsequent action was part of the S-FIRM’s systematisation... the effect of inviting two collaborators back to share their sector experiences with junior staff in the ‘knowledge

transfer meeting' was very successful. Both collaborators had previously been part of S-FIRM at management positions; both of them had left when communication had become more and more difficult within the firm.

AG, Collaborator, ex-employee of ESD

I was very surprised at the meeting we had today... at an engineering level and an environmental level, I travelled periodically to Madrid to meetings where we exchange experience, analyse systems, find out pros and cons, but the transfer of knowledge has never happened at the head office before... The last meeting of this kind was about 14, 15 years ago.

VF, Collaborator, ex-employee of CBU

Today I brought my notes from 20 years ago, no one has ever asked for them before... After 20 years, this is the first time we've shared this information together across the whole company... this is ... um... bizarrely good.

SC, Project manager:

The meeting was a wonderful learning experience ... we are all motivated to continue with the systematisation, I think that, well, we need to integrate this standard in S-FIRM. Things need to be systematised, in how we work, in how we behave, I think this is the key, the key for this standard to be valid.

AM, Aluminium manager in the CBU

My name is AM, I came from the department for aluminium products innovation in Spain. The systematic that I understand is mixing any two areas such as mechanics and chemistry,

there is always an influence from different areas and we need some parameters that allow us to agree or disagree more quickly.

FB, Technician:

I agree with AM, for me it is 'systematisation' rather than 'systematic', in an application, things can function in different ways, but both clients and ourselves can still be satisfied.

RP, General manager:

All the calculations he (one collaborator) had, all the formulas he had since many years ago, the concerns he did not shared with us before, you see, it was all in my email box today, this morning, in details... (so) we are on the way to systematisation.

IC events: generating opportunities for networking

The networking events referred to those emergent activities or repercussions as a consequence of implementing the InCaS methodology in S-FIRM, such as IC-related knowledge processes or activities that happened both physically and on-line between the firm, its suppliers and customers. This kind of processes or activities was not planned in the first place according to the official European ICS guideline. However, the participatory experiences in the InCaS project showed S-FIRM the importance of systematic management of a flowing process of IC. When the boundary of systematisation expands, networking events became a field of experimentation in which a sense of positive energy and enthusiasm, such as trust, confidence, reputation, and commitment, could penetrate through the network that connects S-FIRM and its key stakeholders. It can be inferred that the purpose of organising a networking event was converted from a problem-solving agenda to a probelmatising agenda, through which S-FIRM and its stakeholders explored

their ideas and actions for the future. In this sense, a networking event was not only a physical space for transferring knowledge at a technical level, but also a psychological space tending towards the virtual by means of building emotional bonds.

SS, Purchasing specialist:

After the first 'knowledge transfer meeting' finished, we were surprised to find that there seemed to more problems not less ... this prompted us to have another meeting with our important suppliers and clients.

AM, Aluminium Manager:

We are pleased to have you (suppliers and clients) here today because we know it doesn't help just to sell... selling is easy today, but what about the tough environment we are all in for tomorrow? It's not easy to win customers confidence, to come to a friendship with clients, so let's start now to think of these matters.

JJ, Trainer:

The impact of this kind of networking event is huge... it was an occasion for finding new problems SMEs all face in a tough economic environment in Europe.

JD, Technician:

I was very excited to meet them, the privilege of talking with them, learning from them... Our clients said in Valencia, people follow a different set of procedures, using new chemical products, performing an installation in a much more competitive way... obviously, we need to rethink our design.

SC, Project manager:

Ah...I think we've done it! We have used this tool to take a series of measures. You know, we didn't see InCaS as a goal in itself. It has been useful for us to support some action that we wanted to carry on with our business partners ... it (the IC measurement) helped express our expectation and interests.

IC leadership: growing talents for the future

At first glance, IC leadership seemed to refer to a new form of leadership, and yet, the meaning of it was far richer than that. On the one hand, IC leadership was actualised through a process of leading from behind, while the measurement of leadership competency effectuated this process. Although “leadership competency” was one of the common IC factors registered under the sub-category of human capital, the richness of leadership in the context of the S-FIRM far outweighed its symbolic meaning. On the other hand, it was virtualised in EBU management's changing role of becoming a strong supporter of employees who are willing to take actions that they decide are best: the EBU's general manager experienced his role changing from being a facilitator, a teacher, to a learner while their subordinates continue engaging with innovative practices and report back to him. From these experiences, he sensed that leadership was more about the capacity to affect and to be affected in a ‘Deleuzian’ sense. That is to say, leadership had little to do with the image of a hero who possessed the magic power of taking control of everything (Clegg *et al.*, 2005). The art of leadership resided in enabling people to grow, both oneself and others, in a continuous manner, which can be likened to a people-growing machine. Going through this mindset changing experience, a new sense of reputation was built while a leader's management style was recognised gradually by the participants of IC networking events.

BM, Country coach:

In my opinion, Phase I InCaS was pretty normal, the big difference in Phase II and post Phase II, I'd say, was 90% associated with leadership... Well, I am trying to see the perspective from the director's (point of view). It is because people participated in the process really became committed to the process of strategic learning ... and this put a great pressure to the director who managed the company. Even you are a director, quite autocratic, but look, you have 8, 9 people demanding action, put a lot of interesting proposals, you have to do something with it... like a director said to our trainer, 'I did not know what this was about at the beginning, but after going through this, everything was just happening'. You have this tool in the middle, like a flow, and then things started to organise themselves.

JJ, Trainer:

Ms. SS was the girl who was new to her function ... once I saw her reporting a mistake to Mr. RP (General Manager) in the corridor, she was almost crying but RP said 'no worries, I know you can do it better next time'. Now she takes the decisional responsibilities within the EBU. When she proposed something new this morning, the director said, "goodness me, why can't I come up with this good idea? Just go ahead doing it!" So there she is, a new leader ... this is only one example to describe his leadership.

SS, Purchasing specialist:

Right after Phase I, Mr. RP (General Manager) fought for us to be assigned on an English training course so that we can communicate with clients from English speaking countries ... April this year, our department will go Paris to attend an exhibition there... at least half us will be there... He (Mr. RP) said he wanted us to be there learning new

things, and he believed there is no point of going to Paris himself for one week and explaining everything to us ... yes, you can see we are very exciting about it!

RP, General manager:

My old boss was very innovative. He was always interested in doing new things with us. Under his leadership, the EBU began to grow bigger and stronger ... today, we are also in a period of change, it was quite interesting to get in touch with a project that helped us to have a systematic way of managing our know-how, especially our human capital ... I hope whoever sits my position in the future can appreciate this, when I am not around, I hope people continue using this tool.

AG, Collaborator, ex-employee of the CBU

I trust RP (General Manager) and his team. That's why I am still here, 14 years later, and it is so like that ... that we have brought a series of information for a joint project, not for profit financially, but for the growth and future.

AJ, Client of the EBU

To know RP (General Manager) himself and more importantly to know he has a competent team behind him ... this fact alone makes a difference.

IC concept: generating a new context

The 'IC concept' that I identified here was a specific linguistic phenomenon that served as a mechanic assemblage surpassing its technical use. According to Deleuze and Guattari (1991), a concept is an intensive multiplicity inscribed on a plane of immanence. Its actual dimension tracks the behaviour of things in relation to a plane of reference, while its virtual

dimension maps out a range of connections that a thing is capable of. In S-FIRM, the actual and the virtual dimension of IC concept were exemplified in the discussion of the particular functions of IC terms or vocabularies: as a professional language, it can be integrated into S-FIRM's daily life by referring to their specific practices; as a rich language, on the other hand, it entailed the co-creation and co-construction of meanings, which can be shared by S-FIRM and its stakeholders as a broader context for exploring business possibilities. IC concept as a rich language not only informed people in S-FIRM about what should be done, but also what could be done creatively between S-FIRM and their stakeholder groups (Humphreys and Brézillion, 2002). It was therefore mobilising an idea rather than imposing a decision on the rational agents (employees) in S-FIRM. In the end, it was the embedded emotional bond that served as a catalyst in mobilising a creative idea and transforming it into action.

BM, Country coach:

One of the things we've talked already, the language, as a turning point... It's like opening a window, suddenly, a lot of fresh air, and you are exposed to a new world ... Most people carried out their work in an automatic way, but now, it's like, a process within a wider picture of the company... you started seeing the importance of the work of another in relation to your own function... many interesting stories came out this process and trust me, people were inspired.

RP, General manager:

Let me tell you a story. We had a line, which is our star line, is ours right now in the EBU, which is exporting all over the world. Originally the embryonic idea comes from a client. Why are we doing this? He has his interest and we have ours, and if we are here dedicating

time to be together is because we know that he has worked for us once, and we know it works to listen to a client, try to understand in the best way possible. From this installation we have sold up until now 26 identical (installations) around the world and this came from the idea of our client who called us one day and said, 'would you like to come and see an idea that I had?'

SC, Project manager:

Yes, many innovations come from improving existing machinery from consulting with our customers, and let's not forget this story.

JA, R&D director:

We started 30 years to take the company outside. 'Globalisation' is not new for us, what is new it's the time of the globalisation today, what's the meaning of that, which are the new trends for the general industry and how to understand them...with the trends we can see a couple of words that define the philosophy of our businesses...co-efficiency, sustainability, systematisation...all these terms we've learned from InCaS ... it forced us to rethink of our advantages as an SME...we are faster, flexible, and adaptable to market changes, only know-how can sustain us to be like that.

RC, Vice President:

As Mr AM (R&D Director) explained, our company is based on developing new technologies, to apply them in different markets and to compete all the time for different customers... At the end this is based on people... all the forces in our company are in the hands of our people... InCaS opened our eyes and showed us what could be done through this language of know-how.

Becoming a strategic alliance

Although visualising the interconnections between IC factors, business process, and strategic objectives via employing IC artefacts was a fairly successful exercise that facilitated the internalisation of a systematic management standard of IC management in S-FIRM, a more crucial question was raised when S-FIRM connected itself to other bodies of the IC network: was the firm's strategic objectives acceptable to all its major stakeholders? If the answer is no, then no matter how visible the interconnections were or how 'systematic' the firm's IC management was, S-FIRM cannot realise its sustainable development. The idea of forming a 'strategic alliance' was a direct outcome of S-FIRM's creative encounters with its clients and suppliers, which was sustained by the emerging affective resonance and moral sentiments within the strategic alliance, such as mutual trust, open-mindedness, confidence, reputation, and commitment. This kind of positive energy and enthusiasm enacted the will of the participants of the strategic alliance to co-creating value. Therefore, it was a step beyond systematisation. Such a strategic alliance was, in effect, a physical and psychological space in which rich language was used, actors self-motivated themselves, and networking behaviours blossomed.

SS, Purchasing specialist:

We have a good number of return clients and from there we studied their cases and made other machines at cheaper cost... other engineering companies may not have this advantage ... clients' feedback became part of our know-how and that's why we need to keep them in the same loop of communication.

FB, Technician:

We are subcontracting a plenty of things so suppliers are part of this picture too.

RP, General manager:

We were going from 90% intuition 10% systematic to a bit more systematisation, but I suppose when we have 90% systematic, perhaps it will be more difficult to innovate with our partners (laugh) ... well, I didn't expect we would have a perfect system, just the fact we are sitting together with clients, suppliers, our staff and feeling that people can participate in crucial decisions... but then again, as our trainer said, this is already a strategic alliance.

JJ, Trainer:

InCaS made the EBU realise they should speed up the action to ensure customer loyalty, an IC factor in their Relational Capital. They have found a technical system consists of a web that puts them in contact with their clients all over the world. The installations have a code, allowing the clients of the same installation from Taiwan or Brazil to exchange ideas about the product. Clients are stimulated to openly criticise the installation and suggest improvements. It is a system by which the company can learn from their clients and clients can learn from each other... This approach makes the EBU a real knowledge platform. It is a strategic alliance going online.

JB, Client:

We would like to carry on working with them (the EBU), because they are receptive to ideas, let's see, I wouldn't say all become a reality because not all could be accomplished, but they are receptive... if we move on from there, they always give one more step... this step can always be taken, that's why I have confidence in them.

JM, Supplier:

You have commented as clients, as suppliers we also want to be involved in the new technologies for making this process possible... here I am participating a little in ideas, take a thread on how to develop a bit, combining the ideas generated at the level of mechanical and technical concepts ... let's try to make the final product competitive, modern, efficient and innovative at the same time.

AM, Aluminium Manager:

We want to sell machines, and continue selling products, and if the client in 10 or 15 years needs a new machine, we hope they will remember us, this is always the difference with time, there is always a better and improving relationship, which could turn into friendship.

MM, Supplier:

The relationship is not with a person but with the company, this is the company that offers trust... but the relationship is personal, because you have this group of friendship with people you want to work with, develop projects, and discuss views... I think it even goes beyond that and this is a new form of making, making S-FIRM's philosophy: an open company, with and give a lot of trust, to the supplier.

AJ, Client:

The important thing is we take the same step, as much as the client, the supplier, the volunteer in this case, the negative side, we see a bit of the same... we are all experiencing the same problem and we are angry when things didn't work... if S-FIRM changes and grows, we want to change and grow with them.

Changes and innovations

In retrospect, S-FIRM's encounter with the InCaS project cultivated an IC culture of 'learning for change' within and beyond its organisational boundary. This IC culture was characterised by the following three points.

(a). Shared intentionality to reformulate strategy

Perceptual changes at a collective level can be observed from S-FIRM's story. A changing mindset, which was called 'collective strategy mind' by the Spanish country coach, emerged from the processes of implementing the InCaS methodology in S-FIRM gradually. The nature of this changing mindset is a shared intent to reformulate S-FIRM's strategy, covering a wide range of topics, such as its visions, objectives, business processes, business success, and external business environment. This shared intentionality entails an interpersonal dimension, as opposed to the individual dimension, which was sustained by communication and critical reflection. Communication helped S-FIRM make explicit the strategy that used to exist only in the heads of the firm's top management. Critical reflection, on the other hand, clarifies the use of IC and its measurement results. Together, these two process elements created emancipating conditions for participation, i.e. every member in the IC project team can play a part in developing and influencing the firm's strategy formation regardless of their hierarchical positions. It can be said that this shared intentionality served as a wellspring of ideas and actions that continued to generate a chain of reactions in S-FIRM.

JA, R&D director:

From InCaS, I understand the most important thing is to create the opportunities to sit, discuss, and reach conclusions. This is very important in all terms. You can do that in a

small business unit or a sub business unit, or in the company, that's a big change when you take the intangible perspective. You asked me what is the worst in my view? Sometimes a guy sitting here in this table doesn't know any news from the guy sitting on the other side of each other, just opposite!

RC, Vice president:

I think InCaS helped us to realise we need to dedicate ourselves to discussing our strategies with our staff more often. We want to know which strategic action should be taken next ... (but) it is not decision of my own, it should be a decision based on communication and coordination.

RP, General manager:

InCaS pushed us to refine the strategy in the EBU and also to concentrate more on our strategic objectives. These objectives are well communicated and now everybody in EBU knows what they are and why they are there.

SC, Project manager:

For me it was very positive, perhaps more useful to understand than a person that dedicated exclusively to drawing or making... InCaS allowed everyone to participate and we had very important experience through which we are able to appreciate each other's work and to collaborate more.

JJ, Trainer:

When the project was running to the end, Mr. RP (General Manager) came and told us that they were now thinking completely differently. They now understood the importance of participation and how that plays a part in the company.

(b). Transformed IC-in-practice

In line with a Vygotskian perspective, the tendencies of behavioural changes observed in S-FIRM were far from the explanation that a “stimuli-response” model can offer. By contrast, these tendencies were the direct consequences of internalisation of an IC perspective by people serving at different working groups in S-FIRM. During this transformation, in a time span of 18 months or so, a more abstract and sophisticated manner of understanding IC or IC-related concepts (which reflected higher psychological functioning) was mediated by the effective use of IC artefacts at three levels of analysis, namely, syntactically, semantically, and pragmatically. As Levykh (2003, p18) argues, internalisation would not be complete without the newly internalised behaviour being externalised and developed habitually. Due to the time limit of this research, however, the evidences recorded from the discussants in S-FIRM only showed their tendencies of setting the desirable behavioural changes in motion, that is, coming toward the stage of ‘conventionalisation’ in the Vygotsky space.

JD, Technician:

I started from the idea that I am an individual working part of a team in EBU... My work is about design and consultation...it relates to the rest of my colleagues and we share a common objective, in this case, installation... For future, I should collect more information from them before I turn to the lab for the design work.

SL, Sales specialist:

In my case, to satisfy the client, if they have a problem I must communicate with all of them in 4 months and offered them with both technical and commercially support. If there is a problem experienced by my colleagues, I can't only say 'yes, I will help you'. No, if the problem is with her today, it could happen to me tomorrow... because if it's not resolved systematically, and if the client is not pleased with us, they may not consult with us on another project. So everyone should learn about the error, so as not to repeat it.

FM, IT technician:

I am a programme... I'm interested in things around new programming...if the info reaches one person, I should know to whom you want to give it to...by that I mean a system of info, that info comes to those who will use it and that in turns makes the entire department grow.

SS, Purchasing specialist:

I am in a buyer's role... I don't have technical knowledge about installation that they do ... I suggest we should set up regular meetings and maybe an event page on our intranet once a new installation is launched... this is worthwhile before a purchasing mistake occurred half way through.

RP, General manager:

Believe or not, some of our evaluation levels on particular IC factors went down in Phase II compared to Phase I, but this is not because we are getting worse at what we do, but rather because once you get more in details, you start to systematise things, you start to see

what is the real potential for improvement... The evaluation of the present can look worse as you work on it and understand how far you are from where you want to be.

(c). A sense of positive energy and enthusiasm

A sense of positive energy and enthusiasm experienced by the staff in S-FIRM was subtle yet significant. As for the employees in S-FIRM, the main driver that took a creative idea forward was their feelings of being cared for by their supervisor or colleagues at work. Receiving regular recognition and encouragement at work was conducive to nurturing trust, confidence, and commitment. All these factors were closely related to employees' motivation of keeping the momentum going. It is worth mentioning, however, the 'positive energy and enthusiasm' here should be understood as the equivalent of 'affect' in a Deleuzian sense, that is, the capability to affect and being affected at the same time. Taken together, IC networking events, IC leadership, and IC concept constituted an assemblage, i.e. a strategic alliance that existed at both an actual and a virtual level, and contained heterogeneous elements. However, it was precisely the affective resonance felt by the participants of the IC network that bound the above heterogeneous elements together. The affect produced consistency and coherence in the IC network.

RP, General manager:

I would say InCaS was a good starting point for the systematic management and navigation of IC. EBU was a 'workshop' 3-4 years ago (as) it had no strategy. We had plenty of people downstairs making machines, so we had to change the people, the mentality; we had to change structure; had to align with other BUs and our suppliers, customers to go from this workshop to an innovative unit that is able to sell around the

world with or without our coatings... This great picture ahead would not have been imagined even 18 months ago, but we all see it now.

FB, Technician:

Without exaggeration, I think the result is fascinating, what has really changed is the image I have about the firm. I am much more dedicated, so are my workmates, for example, when clients call us, we know what could we do for them.

SC, Project manager:

Before InCaS, we don't really know the potential we have... (We) have plenty of time to know new methods, new tools, and different partners. In this sense, S-FIRM surprises me every day because it's improving. I sincerely think so.

CC, Financial Manager:

Already, I have seen that there is an internal revolution starting within S-FIRM and its ripples spreads outwards.

MM, Supplier:

The more communication we have, the more we know there are links in between, the more joint projects we will have, I am sure of that.

AJ, Client:

We certainly share their (S-FIRM) enthusiasm. It's our honour to be here.

BM, Country coach:

The changes that we've seen in so little time are huge ... people who have never been in touch with strategy made their voices (heard)... It was amazing how they started to offer solutions to problems! ... I think these positive energies and enthusiasms are flowing and growing.

RC, Vice president:

In the future... I look forward to more collaboration, internally and externally... to bring us more interesting results.

7.2 Reflections on writing the stories of S-FIRM

The Italian postmodernist philosopher and novelist, Umberto Eco, revealed the pathways to his cognition of writing the medieval story of *The Name of the Rose*. As he put it, a narrator should not supply interpretations of his work, otherwise he/she would not have written a story that serves as a machine for generating interpretations (Eco, 1985, p.2). Instead, every novel must have a title, which is itself a key to interpretation. The idea of giving the story of this chapter a working title as “S-FIRM, IC, Learning for Change and Innovation” was to prompt my readers to understand that IC practice should never be terminated at the stage where the IC Statement was produced. Rather, a non-linear learning experience amplified through a critical IC perspective entails organisational change and innovation naturally. This emphasis is in tune with the research question that I asked at the very beginning of this thesis: what is the innate value of IC practice? Clearly, the answer to this question lies in between the three loosely coupled terms, namely, organisation, IC, and learning.

Although an author is not supposed to interpret, he or she can actually inform the readers about why and how he/she wrote the story (Eco, 1984, p.8). Following Deleuze and Guattari (1988), I consider the story of S-FIRM as a rhizome, because it was constructed in such a way that each party (narrated by a person related to the firm) can be connected to other parts (narrated by other persons). Rhizome is potentially infinite, since it has no centre, no periphery, no beginning, no ends, and no sequels. This feature is similar to that of a non-linear learning experience, as described by the actors in S-FIRM's story. For this reason, I never tried to assign a plot, nor a chronological order to this story. Instead, I followed the narratives unfolded by the participants of this process who exerted their influences by speaking out.

Specifically, the group discussions conducted in and about S-FIRM were not done intentionally for the sake of demonstrating the use of the InCaS methodology. In fact, all these group discussions were part of the on-going activities that S-FIRM decided to follow through or to monitor after the production of their IC report and action plan. In this regard, I have confidence to show my readers the real changes taking place within S-FIRM, be it shared intentionality, transformed local practices, or strengthened emotional bonds.

In writing S-FIRM's story, I was first intrigued by and then guided by two interesting phenomena that were relatively new to the existent literature of IC research and practice. First of all, only 4 persons from EBU were selected to join the InCaS project at the beginning of its Phase I implementation. By the end of Phase II, however, more than 30 people from both inside and outside S-FIRM, regardless of their hierarchical positions, domain of responsibilities, or organisational affiliation, engaged in the project in one way or another. It is obvious that the boundary of implementation was expanded.

Secondly, as Figure 12 shows, the original InCaS methodology was structured in accordance with the ICS procedure model, which contained 5 basic steps plus the step of prearrangement. By the end of Phase II implementation, however, 7 extra ICS process modules had been approved by the InCaS consortium and added to the original framework, including 4 modules on various aspects of strategy formation (enhanced business model, vision, business processes, external environment), 3 on follow-up action (learning cycle, monitoring, auditing).

Table 8 shows the relationship between extra modules and the original ICS procedure model. These extra modules demonstrated the emergence of a non-linear process of learning in the course of implementing IC reporting systems. In addition, expected management interventions were rephrased from “implementation of planned measures” to “learning on paths of value creation”. Needless to say, the adaptation of the framework and the rephrased expectation reflected the change of practices in the implementation processes. As a result, these phenomena guided my writing of S-FIRM’s story in two ways: I related the boundary crossing phenomena to a variety of self-accounts (multiple voices) in S-FIRM, and I paid close attention to pivotal role of learning in support of organisational changes and innovation.

Table 8: Evidence of a learning paradigm - the enhanced InCaS methodology

Extra Modules	Where to implement
M1 – Enhanced business model	Step 1 / Step 4
M2 – Vision	Step 1 / Step 4
M3 – Business processes	Step 1
M4 – External environment	Step 1 / Step 4
M5 – Learning cycle	Always (Step 1 – 5)
M6 – Follow-up ICS	Always (Step 1 – 5)
M7 – ICS Quality Requirements	When ICS Audit is planned

(Source: Adapted from European ICS Guideline, 2008)

7.3 Conclusion

As Figure 15 shows below, the non-linear learning experience described by actors in S-FIRM's story entails different process elements (blue circles), yet all of them are associated with the central theme of change, which covers various domains of functionality (red circles constituting the triangle). These domains of functionality can be understood as the 'outcomes' of learning by drawing on a critical, a material, and a virtual perspective. Compared to the static and restricted IC measurement results, these learning 'outcomes' are much more contextualised and dynamic.

There is no definitive causality identified between these process elements and changes in various domains of functionality, because all of them can be enacted almost simultaneously in a learning process, in which the transformations of IC elements as well as the effect of contextual moderation and mediation become cyclic (Liu and Wang, 2008, p.487). To this end, it can be argued that S-FIRM's story provided an operational context for us to understand a learning paradigm in the real-life situations. From their stories, we can infer that a learning paradigm may function as a 'prompt' that offers cues to the participants of the InCaS project, particularly when the process of implementing IC reporting system became inactive or less engaging. However, it does not prescribe specifically what should

be done. In other words, a learning paradigm in the field of IC is an ongoing construct that opens up rather than closes down spaces for IC creation, learning, and organisational change and innovation.

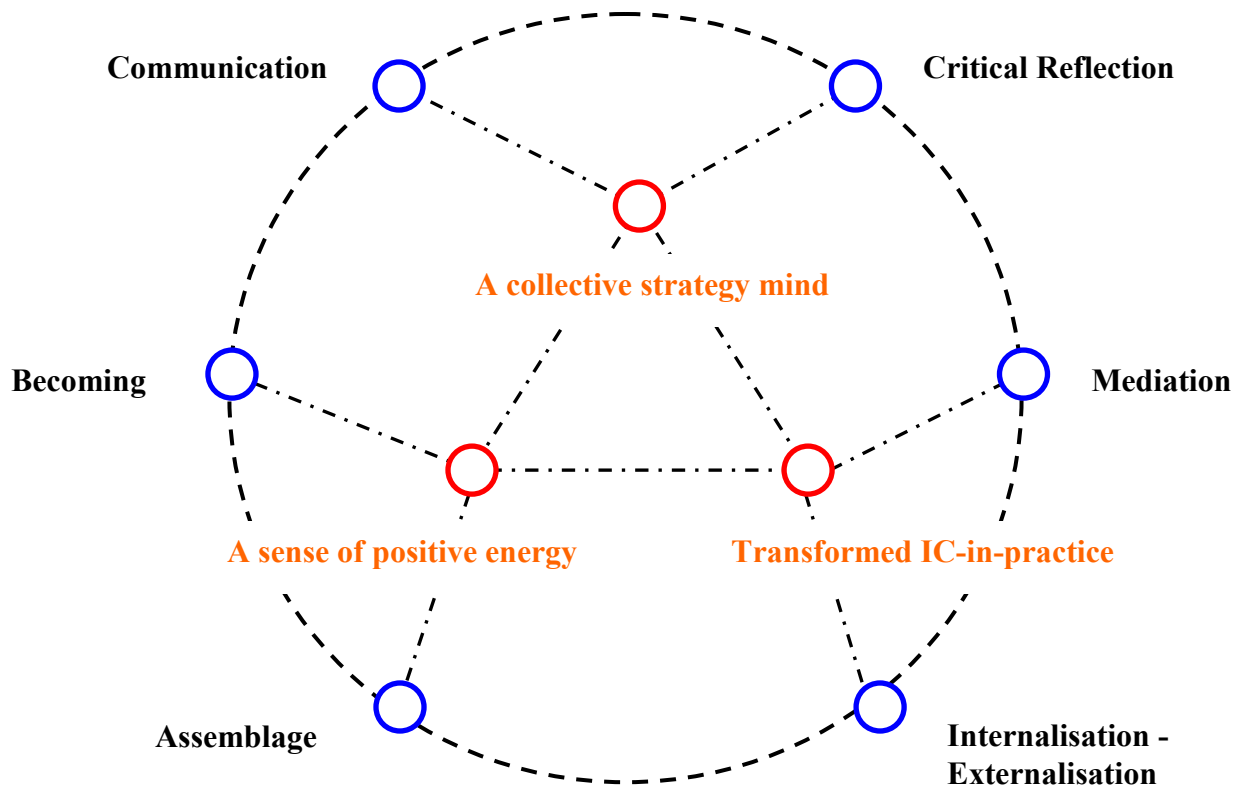


Figure 15: Learning, change, and innovation in S-FIRM

8. Conclusions and Discussion

“Language is not life; it gives life orders. Life does not speak; it listens and waits”.

– Deleuze and Guattari, 1988

8.1 Summarising the principal arguments

This thesis has explored the innate value of IC research and practice from the views of those who had their first-hand experiences of implementing IC reporting systems in European SMEs. The purpose of this research was to clarify the potentiality of IC practice in support of organisational change and innovation. This potentiality was realised through enabling a flowing process that generated and developed IC in an organisational context. The innate value of IC practice set it apart from the mainstream thinking that merely deemed IC as a tool for enhancing management control internally or for manipulating public relations externally. To distinguish the innate value of IC practice from its claimed value, as shown in the conventional IC reporting systems, I have sought to construct ‘a learning paradigm’ that differentiated itself from the ‘measuring paradigm’ in several ways. The principal arguments of the paper are summarised below and include the comparison and contrast of two paradigms in terms of their ontological assumptions, methodological considerations, foci of practice, and evaluation criteria for disclosure. The dynamic relations between the two paradigms are presented in a diagram (see Figure 15).

Ontological assumptions

The deeply seated ontological assumption behind the measuring paradigm in the field of IC was that of “IC as an objective reality”. It presumed that IC elements have relatively stable attributes. I argued that this view was essentially emanated from an accounting and

managerial perspective that sought to capture the associations between IC and a firm's financial performance in a statistical model. It followed the line of thinking that attempted to show the definitive impacts of IC reporting on an individual, a group, or an organisation. In accord with this assumption, IC was always assigned with a positive value regardless of the context it resided in. Clearly, the appeal of this assumption was that IC practice could be simplified into the production of a single format report, in which the relationships between IC elements were posited under parsimonious conditions within a reporting system (Liu and Wang, 2008, p.486). I have showed that this view limited the several possibilities that the concept of IC promises, since it only focused on 'what IC is' without thinking of 'what IC does' or 'what IC could be'. Constrained by this assumption, the practical focus of the measuring paradigm in the field of IC was to measure a firm's individual IC elements so that a definitive cause and effect pattern could be established and then connected with unjustified managerial objectives, i.e. manage-by-objectives. As regards the case study of this research, the original methodology of the InCaS project contained sufficient evidence that had demonstrated the propensity for this ontological assumption. The discourse analysis of this kind of documents in Chapter 5 reflected the limitations of the measuring paradigm.

In contrast to the measuring paradigm, I argued that the ontological assumption underpinning a learning paradigm in the field of IC was two-fold. First of all, in accordance with a dialectical approach to innovation, "IC as a social construct" assumed that the relations among IC elements were dependent on the contexts and the enactment of organisational agents. In other words, the question if IC was an asset or a liability depending on the organisational context it resided in. Secondly, in line with a rhizomatic approach to innovation, IC was seen as a "discursive construct". That is to say, the innate

value of IC practice had little to do with the explanation of a causal relationship between individual IC elements and organisational performance. Instead, it was the intensity generated by IC artefact mediated affects and relations between the firm and its stakeholder groups that evoked mutual change and collaborative innovation. Ultimately, the metaphor of “IC as life” was adopted to show what IC could be: the content-focus definition of IC could not determine the value of IC. Rather, it was ‘what this concept does’ or ‘what this concept becomes’ that mattered most in practice. Hence, the practical focus of a learning paradigm in the field of IC was to enable a non-linear process of learning, in which the concept of IC could be assessed in relation to its enabling, or blocking, of a focal organisation’s potential to change and innovation. The detailed thematic analysis of a learning paradigm in Chapter 6 as well as the in-depth case study of S-FIRM’ strategic transformation in Chapter 7 sought to capture the critical, material, and virtual potential of IC practice.

Methodological considerations

As I have showed in the literature review of the measuring paradigm in Chapter 2, there was no shortage of IC measurement tools. For example, a scoreboard approach was influenced by the measuring paradigm. It emphasised the role of a flexible set of indicators in reflecting the unique strategy of an organisation. This methodological approach sought to produce a relevant and modestly idiosyncratic representation of a firm’s IC stock. Relations of indicators were assumed to be complementary and additive, i.e. each indicator should either complement another or add the strength of the explanatory power of IC elements. Although a scoreboard approach was not as parsimonious as a hard valuation approach that translated everything into numbers without making any qualitative difference in a decision, in most cases it still relied heavily on producing quantitative results that

appeared to be ‘numerically scientific’. This feature echoed the ontological assumption of the objective reality camp, that is, measurement was understood as a realistic representation of organisational reality. From there I argued that the assumption of making IC measurement results standardised and comparable across firms and/or industries was taken for granted, and the ‘possibility’ of making use of these results for improving internal management and external communication (*ad hoc* with financial institutions for capital attraction purpose) was accepted uncritically.

In contrast, the methodological consideration of a learning paradigm in the field of IC sought to take care of the interactions among and transformation of IC elements (Liu and Wang, 2008, p.487). In this case, IC information was treated as a mediation tool, i.e. a boundary object, which went beyond an objective representation and allowed managers to craft strategies that fused the aspirations of an organisation. Within the framework of IC management, a systematic viewpoint was cultivated by enabling internal IC flows in the continuous improvement of local practices. In doing so, the issues of systemic unity and sustainability of the whole organisations can be addressed. To go with the internal IC flows while pursuing in-depth systematisation, innovative practice that transcended the physical boundary of a focal organisation might come into being. To sustain this kind of practice, a physical and psychological space for collaboration was built in the form of a decentralised IC network, which allowed a dynamic formation that involved spontaneous and unpredictable connections between heterogeneous elements. To this end, I argued that a storytelling method should be invented to support a multiplicity of IC self-accounts made by the participants of this network. This method evolved from a narrative tradition (Mouritsen, 2006) that invited participants themselves rather than those on their behalf – a

firm's senior management who have traditionally assumed the role of storyteller – to speak about their first-hand experiences of engaging in the transformation of IC elements.

Foci of practice

As regards the measuring paradigm in the field of IC, the focus of practice in terms of major theme, processes, outputs, and results can be summarised as follows. 'Measuring' as the major theme rendered a linear process of implementing IC reporting systems, which largely followed the steps of 'identifying (IC classification) – measuring (IC indicators) – reporting (results in the IC Statement)' IC until the weight of each IC element and a set of indicators were worked out and presented in numerical terms. These weights and indicators were then summarised into a single format report, called IC Statement, waiting to be transformed into unjustified managerial goals or objectives. More often than not, an action plan was attached to this report, which listed the number of IC factors that were targeted for 'improvement' without explaining why and how these factors were connected with or going to support the firm's strategic objectives. The production of IC Statement was seen as a finishing point to the implementation of IC reporting systems. The outcomes of this implementation were little or unjustified management interventions, which prevented innovative practice from happening in an organisational context. Consequently, organisational control and manipulation were reinforced at the cost of stifling innovation.

A learning paradigm, I argued, maintained a different focus of practice. 'Learning' as the major theme enabled IC flows in an organisational context. It was a flowing process that gave prominence to the interaction and transformation of IC elements by taking into account a critical, a material, and a virtual aspect of learning. The critical perspective, which was underpinned by communication and critical reflection in the Habermasian sense,

fostered a *collective strategy mind* that was characterised by the shared intentionality to reformulate a firm's strategy within an IC project team. The material perspective, which was sustained by mediation and internalisation in the Vygotskian sense, encouraged *transformed IC-in-practice* in an IC community by grounding the concept of IC and its systematic management standard in a firm's local practice. Finally, the virtual perspective, which was endorsed by assemblages and becoming in the Deleuzian sense, nurtured a *sense of positive energy and enthusiasm* within an IC network by increasing the intensities of participants' will to experiment with innovative practice. As I have showed in the last three chapters, learning as a discursive process did not have an end, and yet it always already entailed changes that could be observed through the above three domains of functionality. For this reason, a learning paradigm in the field of IC contributed to organisational change and innovation.

Evaluation criteria of information disclosure

Drawn from a financial/management accounting point of view and the measurement theory, the ambition of obtaining standardised and comparable IC measurement results, as endorsed by the objective reality camp, decided that the following evaluation criteria of information disclosure in the field of IC should be taken into account (Pike and Roos, 2004). They were: complete measures, distinct measures to prevent double counting, independence of the entities being measured, agreeability of the mapping from the empirical to the numerical system, and commensurability to enable subsequent aggregation. Ironically, these criteria of intangible information disclosure were not much different from the accuracy, reliability, and comparability standards of financial statements that were approved by the IFRS (Dixon, 2003; Abeysekera, 2007).

With a learning paradigm in mind, I argued that IC practice demands different criteria for information disclosure. I proposed three criteria that were closely related to the three perspectives of learning. Firstly, *criticality* – the concept of IC had to challenge the *status quo* of a firm's existing order and organisational arrangement that was unfair or problematic, especially those strategic issues that were going to affect a firm's innovative and sustainable development. Meanwhile, 'the dark side' of IC, i.e. as a liability not an asset, must be critically reflected so that the intention of implementing IC reporting systems and the treatment on indicators can be clarified. Secondly, *systematisation* – IC had to be relevant to a firm's day-to-day practice and consistent with its evolution. To achieve this harmony, IC measures were expected to evolve along a main theme that was pertinent to a firm's strategic objectives. Ideally, the rationale of the theme can be explained in theory, for example, an employee-centred theory would promote high-involvement management, employee-centred work practice, and employee well being. Thirdly, *affectivity* – IC reports can be written in the form of incorporating multiple perspectives and interests. As the stakeholder theory predicts, a firm's human capital was not 'owned' by any particular person but every single employee in the firm; the structural capital embedded within an organisation can only be put into effect when employee-centred activities or work practice are systematised. Last but not the least, a firm's relational capital resided in a social network, and thus people who were excluded from this network can never appreciate the importance of IC. For this reason, IC practice should contain a multiplicity of self-accounts from those whose first-hand experiences of implementing IC reporting systems can be transformed into the efforts of co-authoring dynamic stories that enrich the concept of IC.

Relationship between the two paradigms

Figure 16 shows the relationship between the two paradigms in the field of IC. Instead of viewing a learning paradigm as a complete alternative to the measuring paradigm, meaning the relation between the two paradigms fall into an “either/or” choice, I argued that we should consider a learning paradigm as a discursive practice. The rationale of this paradigm was that it created a pattern of difference-in-itself (Deleuze and Guattari, 1988). As I have demonstrated, a learning paradigm did not stand in opposition to the measuring paradigm, but transformed it by enabling a flowing process of IC in SMEs. However, it is still worth mentioning the tendency of paradigm shifting: IC research and practice have gradually shifted the focus of attention from assessing and reporting the strengths and weaknesses of individual IC elements to creating connectivity among a firm’s IC, business model, self-perceived business success, and business environment. Between these two paradigms, there was a controversial yet overlapping area of inquiry: IC measurement and the treatment of indicators. Influenced by the financial or accounting preference for control, as indicated by quantified performance variables, the measuring paradigm was aligned with the view that IC measurement results should be standardised and comparable. A learning paradigm, on the contrary, was more concerned with the contextualised interpretations of these results. Thus it negated the existence of any measurement approach that was inherently superior. According to a learning paradigm, the IC measurement was not primarily a summary of a past, but a more interesting mechanism that made problems out of the present and thus incubated changes and innovation in organisations (Mouritsen, 2009a, p.155).

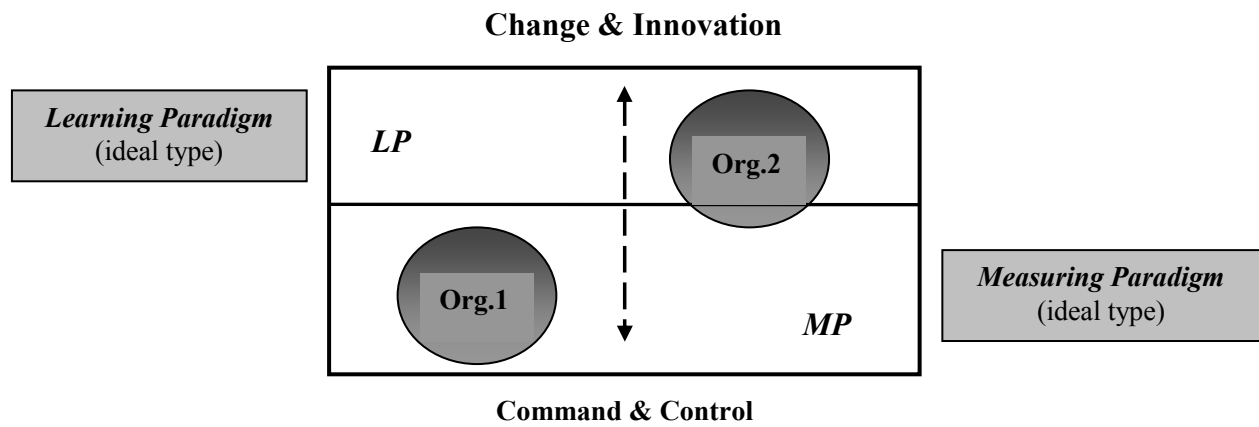


Figure 16: The inter-penetration of two paradigms in the field of IC

8.2 Contribution

This research, to my belief, has made a contribution to the literature of IC by incorporating theoretical frameworks grounded in a social psychology tradition. The dynamic relationships between subject (self) and object (others) have always been the core of social psychology (Jovchelovitch, 2007). Influenced by the measuring paradigm, IC was perceived as an objective reality and thus it became the equivalent of an asset, a commodity, and a resource that waited to be measured and controlled in an organisational context. The uncritical measuring results of IC disappointed researchers and practitioners in that they were nothing but a snapshot view of a firm's IC stock. In contrast, a learning paradigm focused on the processes of activating IC flows. This was mainly achieved through a Habermasian analysis of inter-subjective knowledge flows, through a Vygotskian analysis of intra-subjective activities flows, and through a Deleuzian analysis of the spaces between inter-subjective, intra-subjective, and inter-objective affect flows. Viewed in this light, a learning paradigm analysed on the above three levels tackled the fundamental problem of the subjective and objective separation embedded in the existing literature of IC. Hence, it enriched the meaning of IC by taking different dimensions into consideration and provided a new insight into the interconnections between IC flow management and organisational change and innovation.

Specifically, the thesis enriched the existing knowledge in the field of IC in the following ways. First and foremost, it confirmed the role of IC practice in support of organisational change and innovation by exploring a learning paradigm systematically. The exploration of this paradigm added the possibility of digesting what I called the ‘innate value’ of IC practice as opposed to the ‘claimed value’ championed by the mainstream accounting and managerial thinking, such as enhancing internal management control or manipulating external communication for the purpose of capital attraction. As I have summarised it earlier, a learning paradigm distinguished itself from the dominant measuring paradigm in terms of its ontological assumption, methodological consideration, focus of practice, and evaluation criteria for disclosure. Understanding these differences will allow us to appreciate the dynamics of the concept of IC as well as its role in eliciting organisational change and innovation in three domains of functionality, namely, shared intentionality, transformed IC-in-practice, and a sense of positive energy and enthusiasm. By no means, however, should these domains of functionality be prescribed as the definitive results of a learning paradigm. In fact, they were only areas for observation, which pointed out the directions that organisational change and innovation may lead to. In this regard, a learning paradigm and changes in these domains of functionality did not fall into a causality relationship; rather, they were two sides of the same coin since learning and change were radically the same, i.e. a discursive process of learning accommodated emergent, continuous, and holistic novelties.

Although a number of researchers have acknowledged that IC research and practice are at a crossroads, very few of them put the theoretical disputes, application controversies, and methodological divisions into a systematic perspective, let alone specify the process components of a learning paradigm. Since learning is a non-linear process, those process

components identified above should never be given a linear rendition. Each of them was itself a process already. However, all of them together added different dimensions to learning when a critical, a material, and a virtual perspective were taken into account. An integrated discussion on these perspectives was that a critical perspective enhanced the transparency a firm's IC-related issues by challenging the current patterns of its management and therefore it warned 'what IC should not be'; a material perspective revealed the interaction between a firm's strategic objectives, IC, and business processes, and therefore illustrates 'what IC does in practice'; and finally a virtual perspective enabled the double-capture of IC and affect, as seen in the IC-becoming of affect and affect-becoming of IC. It therefore demonstrated 'what IC could be'. The three perspectives also constituted a non-linear process of learning-by-reflection, learning-by-participation, and learning-by-affection³³ within different scopes of IC practice, varying from an IC project team to an IC network. In addition, they might be associated with the criteria of IC reporting that required IC information disclosure to be critical, systematic, and affective. Clearly, these perspectives highlighted the importance of a flowing process of IC that prevented this concept from being perceived as a lifeless commodity.

Secondly, the analysis of empirical experiences of implementing IC reporting systems in SMEs has novelty value in terms of cross-fertilising knowledge in the areas of IC, social psychology of knowledge dynamics in innovation, and organisational theories of learning and change. While IC was positioned as the 'field' of this research, the social psychology of knowledge dynamics helped distinguish two epistemological approaches that stood against the mainstream Cartesian thinking embedded in the measuring paradigm: first, an adaptive dialectics was found within a symbolic domain that fought against the image of 'a

³³ The word 'affection' here does NOT denote a personal feeling, it refers to the experience of the body going from one state to another, which can be considered as an encounter between the affected body and affecting body (Deleuze, 1989).

top-down approach' to IC management. This was mainly achieved through the re-negotiation of a 'bottom-up approach' (a learning paradigm) to IC management within an SME as something inter-personal (collective versus individual) and intra-personal (private versus public). Second, a disruptive dialectics was identified in SMEs' everyday experiences of novel combinations of IC and affected in their engagement with action for continuous improvement. This was realised through the SMEs' creative becoming of a strategic alliance, i.e. a new way of doing business via co-creating value with the firms' stakeholders in a safe and innovative business environment. To this end, theories of learning and theories of organisational change served as a thematic bridge that connected the field of exploration as well as the above epistemological foundation for innovation. The relays of these theories can be summarised in a simplified expression: IC flows – a learning paradigm – organisational change and innovation vis-à-vis conventional IC reporting – a measuring paradigm – organisational control and manipulation.

Thirdly, this thesis bridged the gap caused by a lack of reported pragmatic study on IC practice, especially from a process-focused viewpoint. Most existing literature in the field of IC suffered from the separation of a research point of view from a practical point of view. The unique strength of the InCaS project was that it combined IC research and practice, and aligned researchers with practitioners by taking into account their multiple voices and first-hand experiences. The data analysis in Chapter 5, 6, and 7 showed that SMEs and RTD partners almost echoed each other's view when it came to the discussion of problems and strengths of the InCaS methodology. This fact negated the claim that 'IC reporting' was one thing (with the help and guidance of IC researchers), whereas 'IC flow management' was another (a firms' own initiative of engaging with IC practice). Actually, these two processes were complementary, since the results of 'IC flow management' would

never come into effect unless SMEs engaged with actions for continuous improvement under the guidance of IC researchers. More importantly, adopting a process-focused perspective allowed me to first observe and then explain why and how the scope of implementation expanded from an IC project team to an IC network. As I have unpacked the details in Chapter 6, the conceptualisation of IC as something more than a social construct as well as the very fact that IC can serve as a boundary object determined that IC research and practice had a natural connection with organisational change and innovation, regardless of the scope of implementation.

8.3 Limitations of this study

Some limitations of this thesis should be taken into account before considering the implications of this research. First, the InCaS methodology was utilised as a frame of reference for this thesis: In Phase I, the *InCaS Phase I Implementation Guideline* only offered frameworks to measure and report a firm's individual IC elements. In Phase II, however, the improved *European ICS Guideline* incorporated new content that focused on IC flow management. Other IC frameworks or initiatives may adopt different methodologies and provide different insights correspondingly. For instance, the InCaS methodology in Phase II sought to capture the interactions between a firm's strategic objectives, business processes and IC through linguistic and visual tools, such as 'Cause-Effect analysis' or 'IC management portfolio', while direct observation might be a more suitable method for explaining how these interactions emerged. One of my interviewees recalled that direct observation might give researchers a chance to experience the internal processes of organising within a firm without relying on SME participants' self-perceived evaluation. Second, throughout this research, the focus of attention has been SMEs or RTD partners who assisted SMEs in implementing the InCaS methodology. The question that

“to which extent, RTD partners’ views or influences can be separated from SMEs’ own perceptions” remains a mystery. The validity of SMEs’ feedback cannot be justified until a comparable case is completed. Third, the research design, i.e. the plane-line-point approach, of this study is unique and innovative, but data collection was distributed over a long time span through collective efforts. This might affect the quality of data, especially considering the language differences in reporting, summarising, and interpreting data.

8.4 Implications

(a) Prospects for policy and practical interventions

At a policy level, the following questions should be considered: How feasible is it to encourage new frameworks of IC reporting? Which direction of development should be encouraged? Who should be involved in this plan of development? The findings of the thesis seem to suggest that the future of IC reporting should not be limited to a single format report (OECD, 2008, p.64). For the moment, distinguishing clearly between IC reports users and their different needs, and answering the ‘so what’ question is fundamental to finding internal and external support for IC reporting, such as incentives, standards and regulations. There has been significant government support for all the major reporting initiatives cited in this thesis. Government has a crucial role to play in encouraging transparency and disclosure. The direction of further development should allow IC reporting to meet the new criteria of criticality, systematisation, and affectivity. This might be a key policy objective. Further work will need to be done in the area of understanding the aims of IC research and practice, i.e. what is the purpose of producing IC-related information in an organisational context? To a large extent, this question depends on which paradigm decision makers lean on. In the end, reporting information that is not

relevant to a particular decision context serves no purpose. As a point of departure, the following three viewpoints are important for governmental or practical interventions.

First of all, from a financial point of view, government should encourage the exchange of information between companies and financial institutions, such as large banks, credit rating agency, re-insurers, and private equity firms. However, the role of each player in the financial sector should be distinguished. When the SME sector brings stories about IC together to attract the attention of financial market, the counterparts of SMEs should at least be able to understand the language on 'IC due-diligence' and respond to it. Without this basic understanding, the problem of a crisis of confidence will never be solved. Since IC information is highly idiosyncratic, large banks are more likely to afford the cost of developing internal models to understand this idiosyncrasy, and experienced credit rating agency who has track record of looking at the wealth of soft knowledge and structured finance for SMEs can join this process by taking into account the credit risk valuation from a firm's internal and external stakeholders. In doing so, the company can be valued strategically and it might realise its potential of value creation through IC flow management. Private equity firms, on the other hand, are naturally more attuned to interesting stories, and thus their valuation procedure and process-oriented criteria might appreciate individual differences a bit more: investing in something that they can grow with. For this reason, government might at least suggest a common context for different parties to work in, e.g. SME lending or financing from an IC perspective. This perspective ought to keep a flowing process of IC alive in order to widen the pathways to value that a firm may identify. This context will serve as psychological contract, not a prescriptive one but an agreement on what is the key to be there, what SMEs and their counterparts in the financial market cannot do without.

Second, from an innovation point of view, developing IC is not a problem for individual companies, but for the health, longevity, and vigour of the whole business sector or industrial cluster within a nation's economy. This is mainly because the value creation in today's knowledge society is more about co-creation and co-configuration through knowledge navigation. Amidon (2003), for example, coined the concept of a "knowledge innovation zone" to denote a geographic region, in which products/services/industries segments or communities of practice are grown. Hence, IC flows and value co-creation become the common interests of those who involve in this innovation zone. Yet, once again, at the heart of the flow and co-creation processes lies the question of how to make IC more understandable, communicable, and actionable. This must be seen from a multidisciplinary perspective, since the taxonomy invented for IC practice should be sufficiently approachable to those who are interested in nurturing the base of innovation: highly innovative knowledge workers, new technologies and procedures, reciprocal and trustworthy business relations and environment etc. For this reason, government may want to support IC researchers and practitioners that dedicate themselves to the development of an informational infrastructure for establishing mutual understanding and recognition between multidimensional IC network users. One of the plausible points of departure is to raise public awareness by making 'IC reporting' more user friendly, e.g. easy-to-understand and process-centred stories, case studies. Ultimately, the question of 'why would we want to be involved' is still largely determined by how much awareness that the concept of IC and IC practice can raise or how much nation-wide attention they can get.

Third, as regards managers in SMEs, there are a few lessons to be learned. On the one hand, the emergent 'IC leadership' implied that the question managers often ask – "how do we motivate people" – should be modified to – "how to build an environment where people

motivate themselves?” This is mainly because individual behaviour is influenced by relationships between his or her characteristics as an organic system and the environment, i.e. man is by nature self-motivated. As such, managers in SMEs can think of ways of leading from behind, for instance, making the opportunities of engaging with IC practice as an invitation to a communication-and-affect-based learning journey through which everyone including themselves may quest for new ways of understanding the business environment around them. On the other hand, the long-term benefits of a learning paradigm need to be acknowledged: (i) If the purpose of IC practice is learning, not control nor reward according to measurement results, then the employees and managers can relax. (ii) A learning paradigm allows more creativity in the design of IC metrics, a more process-oriented bottom-up approaches and less of top-down commands (Sveiby, 2004), which offers the premise of a learning-centred IC culture. (iii) A learning paradigm encourages evolved leadership that is characterised by a constant becoming. Although IC-in-practice is important, identity and practice are mirror images of each other and therefore the notion of identify-building in the process of implementing IC reporting system should be given equal weight to that of contextualising IC in a local context.

(b) Theoretical and methodological prospect

One of the theoretical prospects of IC flow management can be understood from a poststructuralist reading on affect. Affect, in a Deleuzian sense, contains a moral component naturally in that it enables the surfacing of ethics, such as ethical action, ethical knowledge, or ethical management. The notion of ethics at stake is grounded in the possibility of freedom - to be free of the subtle control of people, structure, and relationships – and can only be acquired through the higher-order cause of business conducts oriented towards self-regulation, self-organising, self-reporting, and self-

accounting. All of them can be seen as a potential constituent of IC. It is worth noting, however, ethics is not viewed primarily in essentialist or normative terms, rather it is seen as an internal frame of reference when this notion is invoked within the discursive practices of IC flow management. As I have discussed in the case of S-FIRM's stories, the nature of IC network is an inter-organisational network of collaboration. For this network to grow constructively, a sense of positive energy, be it mutual trust, commitment (responsible self), or reputation (recognition of responsible others), is required to enable the alignment of different interests or value systems across a range of participants. Viewed in this light, ethics as moral sentiments can be considered a site of power. Clearly, a networked approach to ethics seems to be able to capture those moral sentiments.

Further to the linkage between IC and affect, a learning paradigm in the field of IC seemed to push the theoretical challenge to the limit: when IC was not seen as an objective reality, nor an asset, nor even a social construct, but as a metaphor of life, reporting IC through telling process-focused IC stories and pursuing IC flow management became increasingly important. Since life is everything and everything is life, there will be no point of measuring and reporting 'everything'. As far as I am concerned, this is precisely the turning point where a learning paradigm starts to work its magic. It might be pointless to measure and report life, but we can certainly make sense of or learn about life continuously. "IC is no way the final solution, it is part of a package to understand how to co-create value for ourselves, our families, our societies on a large scale and in a sustainable way", said Professor Leif Edvinsson, the pioneer IC scholar, who shared his view with me in an interview. The 'IC as life' metaphor sets the agenda of IC flow management on a future path for value co-creation. It is a derived dimension of looking at the world from the past to

the future. Only a learning paradigm would support this shift from the past to the future, since it accommodates rather than precludes things as ethics, health, and sustainability.

What a learning paradigm did was to remove the burden of ‘justification’ that had obstructed IC practice for a while: in the end, maybe it is not whether ‘the pill works’ or not, i.e. how particular or useful IC reporting is in comparison with the financial statement; but the sort of process-focused interventions at a collective level, which were packaged around IC practice as a generic means of engaging teams, consolidating business units, creating a space where a firm’s stakeholders are listened to, that stimulated collaboration, and made a real difference eventually. As long as the politics of power does not limit this space of exploration, IC flow management should experience little difficulty in working alongside other management or reporting tools. As regards fulfilling internal management purposes, exploring this overlapping area might reduce the cost of looking for different batches of indicators. Despite the fact that they are by and large defined in terms of its capacity to conform to a set of pre-specified standards (Kallinikos, 2004, p.19), Deming’s Total Quality Management and Motorola’s and GE’s Six Sigma were devoted to improve internal work processes, and thus there might be a possibility for IC researchers and practitioners to borrow ideas or statistical techniques from any of these management tools or vice versa. With regard to external reporting purposes, Roslender *et al.* (2006) explored employees’ self-reported wellbeing as a Human Capital element of IC, while Bounfour and Edvinsson (2005) took IC research and practice to a larger community, such as a nation, a region, and a city. These examples have formed new theoretical questions that can only be addressed within a learning paradigm.

In accordance to the theoretical perspectives that I mentioned above, one of the methodological prospects in the field of IC is the so-called ‘open source methodology’ (OECD, 2008), which refers to an approach that changes the way content is generated: information with regard to a firm’s IC is not so much generated ‘about’ participants, but ‘by’ them. This approach is consistent with the self-organising and collaborative pattern of IC networks and thus it might be useful to deal with complex management and public policy problems. For instance, instead of spending numerous resources to calculate industry or sector specific IC indicators, it might be worth looking at cross-company ethical knowledge management systems within the International Federation of Accountant’s (IFAC) work on ethics and professionalism or within a broader framework of Corporate Social Responsibility (CSR) and environmental/sustainability reporting. As regards researchers who wish to study on this topic or the alike, two methodological considerations need to be taken into accounts. Firstly, the operational method of facilitating the formation of IC networks can be carried out through exploring the kinds of networked forms of technology that allow moral sentiments to function. Applications of Web 2.0 generation, such as blog, media wiki, and pod cast can be considered. These technologies are good at capturing different forms of knowledge and developing ethical IC networks more generally either within or outside corporations (McPhail, 2009, p.819). Secondly, the analytical method involves facilitating content generation by means of encouraging a multiplicity of self-accounts (dynamic IC stories) and then keeping track of the content over a long period of time (longitudinal, company-specific content analysis).

8.5 IC as life: the ongoing stories about InCaS and S-FIRM

Every thesis tells a story. Successful or not, the actors in the thesis must continue their life journey in their real world situations. Taking this opportunity, I would like to share with

my readers the continued life stories of those agents that were mentioned in my thesis. The aim of sharing is neither to prove anything that I have written above, nor to amuse my readers with anecdotal stories. It is written in the same spirit of the Deleuzian philosophy – the meaning of being only resides in its continuous, creative, and rhizomatic becoming.

Apart from meeting all the major criteria of evaluation of a EU-funded project, the greatest achievement of the InCaS project was that its legacy will not disappear – a follow-up project under the European Union FP7 Framework, called ‘CADIC: Cross-organisational Assessment and Development of Intellectual Capital’, was approved and funded by the EU to address the aim of building European clusters for SMEs. Clusters are supposed to foster “the involvement of SMEs in inter-firm cooperation at local, national, European and international level” (EU FP7 Project Description of Work, 2010). The CADIC project seeks to enhance cooperation and communication between organisations, i.e. SMEs and their key stakeholders in their business environment, so as to “support emerging clusters of SMEs within their purview” (*ibid*). The proposal points out that the fundamental problem for SME clusters, where effective networking is an important factor for high performance and cluster sustainability, is that both processes of cooperation and competition can occur simultaneously in networks.

The endeavour of providing an informational infrastructure for growing and proliferating open and extensible clusters in a business-to-business environment, where the generation and development of knowledge takes place in an engaging flowing process within a focal organisation and then spreads into its network partners and clients to their mutual benefit, seems to be the linchpin to overcome the competition fears, such as losing know-how, knowledge workers. For this reason, clusters in CADIC are going to be supported in a

bottom-up manner: an informational infrastructure will be built to provide virtual proximity and to promote trustworthy relationships. The main thinking concerning this process in CADIC can be summarised in Figure 17.

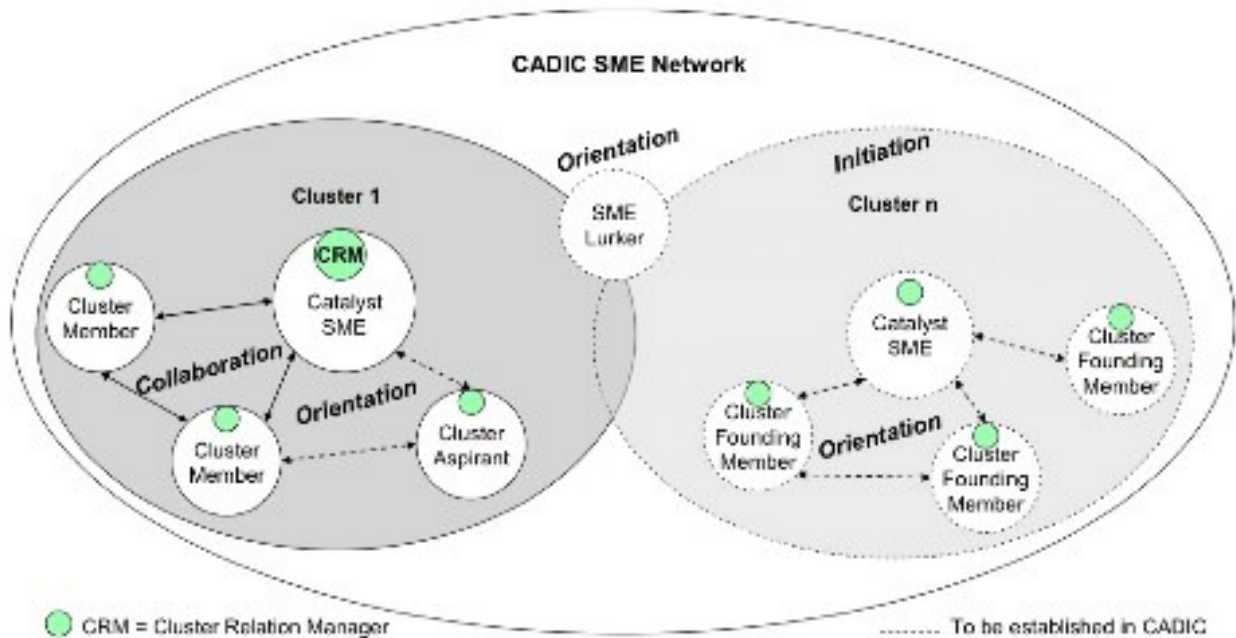


Figure 17: CADIC Cluster Facilitation and Networking
(Source: EU FP7 Project Description of Work, 2010)

It can be said that the CADIC project tackles the central issue of facilitating the growth and innovation of the SME sector: many SMEs are still unaware of the collaboration opportunities with different stakeholders – other firms, research partners, and professional communities – in a multidisciplinary and global strategy alliance. Although the results and outcomes of the CADIC project cannot be ascertained at present, the following facts are worth attention. First, S-FIRM was invited by the CADIC consortium to become a catalyst SME in the context of Spain and the firm's management confirmed their willingness to participation. Second, a specifically designed Web 2.0 package was developed and implemented to integrate IC-related concepts, cases, stories, and supporting tools in order to provide attractive functionalities for involved SME staff and the general public. Within

this package, an interactive encyclopaedia, called “InCapedia³⁴” (www.incapedia.org), has been constructed for the purpose of supporting the generation and development of IC virtually and physically (Yu and Humphreys, 2008).

The feature of InCapedia³⁵ is emerging and self-organising: everyone can contribute to it in real time, including SMEs, their stakeholder communities, and the general public.

Although databases, manuals, and IC reports capture a good proportion of IC-related information in an organisational context, most of tacit knowledge on IC flows and processes exists in informal and intangible form and is scattered in the minds of skilled researchers and practitioners everywhere. Therefore, the design and development of InCapedia supports people, and whoever share the interest of IC research and practice, to explore innovative ideas and actions within and beyond an existing cluster. As an information infrastructure, InCapedia itself exists outside cluster workspaces, as a stand-alone electronic resource in the public domain. This feature shall enable extremely rich resources on IC, e.g. interactive case study materials, successful IC stories, illuminating IC visualisations, to be mobilised across the whole SME sector. With a learning paradigm in mind, it is natural for me to support these initiatives being taken and integrated into the CADIC framework.

As I have mentioned above, S-FIRM’s encounter with IC did not stop at the point when the InCaS project was completed. In response to the CADIC proposal, S-FIRM issued a self-statement, *“any project that allows us to increase our innovation possibilities and develop our IC skills, is not only welcome but also seen as very important and very useful for both the company and the employees. A project involving other partner companies with a*

³⁴ It is a coined word that combines the meaning of “Intellectual Capital” and “MediaWiki”.

³⁵ The prototype of InCapedia is designed by Prof. Patrick Humphreys and myself at the LSE.

common interest for IC development seems therefore ideal for us... in a period of crisis, the company also hopes that such a project could bring an additional motivation for our staff”.

By the time the first draft of this thesis was finished (Dec. 2010), the most recent update about the Engineering Business Unit (EBU) in S-FIRM was that their global strategy alliance had included not only business partners, such as suppliers, clients, but also competitors from Eastern Europe and Asia: the EBU had begun to sell their ‘know-how’ of building complicated and chemical-tailored machines to their competitors through ‘franchising’. In addition, they began to think of expanding their customers’ base by growing the sector in which their customers specialise. These initiatives reflected the successful transformation of the EBU: from a manufacturing workshop to an IC-based knowledge platform. This fact reminds me of the short conversation that I ever had with the General Director of S-FIRM in London in December 2008. At that time, Mr. RP said to me, *“look, you’ve got to have some faith in your study just as I have faith in EBU’s tomorrow, our faith may be different, but there is one thing in common, we learn, and improve, and become a happy person full of crazy ideas”.*

Epilogue

As a final word, it is the time to say something about my research-in-life. In the course of doing this research, I wrote a paper entitled “Paradigm shifting? – Exploring a learning paradigm in the field of intellectual capital” and submitted it to the OLKC (Organisational Learning, Knowledge and Capabilities) Conference 2010. This paper, then, took me to the beautiful campus of North Eastern University in Boston, where I gave a presentation and received invaluable feedback. The ‘intangible’ benefit of this experience is that it boosted my confidence to pursue an academic career. Ten months later, I was very lucky to be offered a lectureship position at University of Bedfordshire in Luton (of course, conditioned on my successful completion of this PhD degree!). I am very excited about this new chapter in life.

In the meantime, my role as a researcher at the LSE continues. I was invited to continue working on InCapedia for the CADIC project. Liaising between the CADIC consortium and my Chinese association, I am conjuring up a picture of taking CADIC to China, where millions of SMEs are in a transitional period and their encounters with IC and their European counterparts might create more sparkles down the road.

Looking back, when I registered as a PhD student four and half years ago, I was on my own, knowing nothing and nobody. Today, what makes my life different is what Steve Jobs once said ‘connecting the dots’³⁶, a process of creating a flow. I am glad that the IC flows explored in this thesis have enabled me to learn, to improve, and to become a happy person full of crazy ideas.

³⁶ Steve Jobs is well known for being the co-founder and CEO of Apple. He made a speech at the Graduation Ceremony 2005 in Stanford University, where he told three stories, including the one ‘connecting the dots’. See more information at: <http://www.youtube.com/watch?v=UF8uR6Z6KLc>

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Appendix 1 Template of the Evaluation Form

Survey Questionnaire – in need of inputs from the SME representatives

A. General assessment

In this section, we would like to know your general assessment of the ICS methodology.
Overall how satisfied are you with the ICS results?
Would you use the ICS as a management instrument continuously? Yes/No, why?
What would you like to change concerning the ICS model and method? Are there any suggestions how to improve the method?
How do you assess the benefits of the ICS process?
Would you recommend the ICS to other companies? Yes/No, why?

Appendix 1 Template of the Evaluation Form

B. ICS implementation process

Step 0: Prearrangement

This section is about the preliminary phase of the ICS implementation process. Following questions aim to find out how the SMEs evaluate the project management activities before the actual start of the ICS implementation.

How do you assess the composition of the project team?

Appendix 1 Template of the Evaluation Form

Step 1: Business Model (Management Meeting)
<i>During the initial visit major topics concerning the SMEs' business model had been addressed. The discussion shall clarify how this first visit was experienced by the SMEs.</i>
How did the initial visit help your company formulate a business model and strategy?
Did you have an explicit business model and strategy before or was it the first time it reflected about that explicitly? Why or why not?

Appendix 1 Template of the Evaluation Form

Step 2: IC Analysis (Workshop 1)

On the occasion of the first workshop the whole ICS project team came together for the first time. Following questions will help you to clarify issues such as how easy it was for the workshop participants to comprehend the ICS model and method and the SMEs' evaluation concerning some specific elements of the method.

How was the first workshop with the entire project team in your company?

Was it possible for the project team to understand the ICS structural and procedural model, why?

How did you perceive the QQS assessment and other IC tools?

Appendix 1 Template of the Evaluation Form

Step 3: Indicators (Internal Work)
<i>Step 3 was conducted internally and was supposed to validate the qualitative assessment of the IC factors by adding numbers and facts to them. Following questions address any problems regarding the indicators and if the SME perceived them as useful – now and in future.</i>
How necessary do you consider assessing IC definitions, factors, and indicators?
Which problems did occur with defining and collecting IC indicators?
How do the SME plan to use the indicators?

Appendix 1 Template of the Evaluation Form

Step 4: ICS Results (Workshop 2)
<i>In the course of the second workshop the ICS results had been presented to the whole team and major implications had been discussed. Following questions aim to figure out as how understandable and valuable the ICS results were perceived by the SME. Furthermore it is of interest which actions the SMEs derived from the ICS results.</i>
How valid are the results?
Did the results surprise your company? Why and in which particular context?
Have the correct field of actions been prioritised according to your company's strategy?
How do you assess the definition of measures?
How can (or not) ICS help your company to implement strategic measures to develop their IC?
Did the ICS results help to refine and specify your company's strategy?

Appendix 1 Template of the Evaluation Form

Step 5: Final ICS Documents (Internal Work)
<i>Finally all the ICS results were compiled within the ICS document. It should be clarified if the SMEs experienced any problems in the course of this step and to whom they want communicate their ICS results by disseminating the ICS document.</i>
How was the production of the final document?
For what purpose do you plan to use the ICS and why? (Internal vs. external communication of the ICS results)

Appendix 2 Topic Guide For Individual Interviews

I. Greeting and warm-up

Prompts:

- Self-introduction,
- Confidentiality,
- Structure and expected time of this interview,
- Any questions so far?

II. Individual experiences of the ICS processes

Prompts:

- Role in the InCaS project
- General impressions
- Successful aspects (methods, processes, results)
- Unsuccessful aspects (methods, processes, results)
- SMEs' reactions

III. Specific understanding of a learning paradigm

Prompts:

- Procedure components (why, how, what)
- Process vs. Results (communication, IC reports)

IV. Factors and conditions affect a learning paradigm

Prompts:

- People (project team members, team leader, CEO, others; relations)
- Time (conceptual, practical)
- Emotions (negative, positive)
- Others

V. Stories about S-FIRM

Prompts:

- Why S-FIRM was made an example of good practice?
- Impressions and why

VI. Wrap-up

Prompts:

- Any other comments
- Thank you

Appendix 3 Adapted Topic Guide for Group Discussions

1. Thank you and welcome
2. The organisational setting/problems before the InCaS project
3. The original aim of being in touch with the InCaS consortium? (The initial perception of 'IC')
4. When and why did S-FIRM notice a difference during Phase II implementation?
5. What happened during the ICS processes? (Interesting stories)
6. What makes a difference in S-FIRM and how things were changed? (Surprising results)
7. How would the ICS process be more effective and useful to S-FIRM?
8. What did you learn from this process? (Individual vs. organisational)
9. How do you perceive IC now?
10. Other questions, exchange of emails for future contact, and thank you for participation

Appendix 4 Coding Frame

Global theme	Organising theme	Basic theme	Definition	Representative quote
MP (Measuring Paradigm)	The limitation of assessing and reporting IC	IC definition	A prescriptive definition of IC with a focus on individual IC elements, which was adopted in Phase I InCaS.	<i>“The definition of IC was not very helping, we couldn’t tell what factors fall exactly into which category” (PL5).</i>
		IC factor	A list of ‘commonly seen’ IC factors that was forcefully provided to the pilot SMEs in Phase I InCaS.	<i>“If you choose too many factors, you end up seeing nothing; there is no value adding in that” (ES3).</i>
		IC indicator	Measures that were assumed to have standardised meanings and comparable qualities in Phase I InCaS.	<i>“We thought we had this aspect under control, but we realised different people had different measures about the same indicator” (ES1).</i>
		Quantified outputs	A direct result of measuring IC elements within a standardised model that aimed to produce ‘desirable’ effect.	<i>“We don’t know how banks could base decisions on the ICS since it doesn’t seem to be comparable” (DE1).</i>
		The demand-supply barriers	As SMEs and RTD partners experienced, there was a significant gap between the perceived impact of IC reporting and its limited use and impact in practice.	<i>“We are afraid of realising our weaknesses to the public, and we also fear our competitors may grab the useful information from the report and use it against us” (DE4).</i>
	Rethinking measuring	Narrative achievement and diversified value	The numbers in IC reports that can be folded	<i>“The process of implementing the ICS in the sense</i>

			into a narrative of what the organisational reality is and could be. It opened up new pathways to value creation in SMEs.	<i>it demonstrated what kind of 'value' can be aimed for... at a strategic level or an operational level, we talked a lot beyond numbers on the final report" (FR2).</i>
		Boundary objects and mobilisation.	The discourses pertinent to IC and its sub-categories that can be reorganised around the boundary of complicated events, which remain outside the current narrative in an organisational context. They serve as powerful mediation tools that enable organisational actors to mobilise IC elements for management decision-making.	<i>"When talking about 'professional competence', for example, if our firm can manage to better relate strategy to business success and the principal processes of value generation, then this IC factor will be able to open itself up to a level of details that allow the adaptation of the ICS to different fields of activities working across our functional departments" (ES3).</i>
		Habits of evaluation and the emergent flow of energy	Quantities can be their own realm of activity when IC measurement results and the development of narratives of achievement inform and reinforce each other. Through these exercises of making improvement,	<i>"IC indicators serve as a useful input for the discussions in the ICS workshops by conveying a whole variety of people, ideas, and resources together, but the most important is we can repeat this exercise... to look for more and more</i>

			SMEs experienced the emotional side of intangibles, such as sense of trust, readiness.	<i>accurate and rational information in our business management” (DE3).</i>
		The potentiality of measuring beyond IC reporting	When more fundamental questions are taken into consideration, the use of IC goes beyond what the advocates of IC reporting claimed.	<i>“Our IC is not a lot more than what a report could describe...maybe numbers do not matter anymore when we ask more meaningful questions to ourselves” (FR4).</i>
LP (Learning Paradigm)	Communication as a vehicle	Communication	Decentralised dialogues and conversations between SMEs participants in the InCaS workshop, which diverted people’s attention from IC measurement results to a non-linear process of learning.	<i>“Once you started communication, you will not only see a process, but a process of value creation, you start to appreciate the importance of others’ work... it makes you think completely different about your own task... ” (BM, country coach)</i>
		Opportunities for knowledge transfer and creation	As an integral part of the InCaS methodology, the requirement of making explicit the firm’s business models as well as its associated communication contribute to the knowledge transfer and creation in terms of three aspects in SMEs.	<i>“The first workshop focused on strategy generated raw materials and new perspectives that can be processed later for the discussion, you know, IC is not the key here ... the alignment between IC and a firm’s business strategy matters</i>


				<i>most” (MB, IC expert).</i>
		Learning from communication action	In the spirit of reaching mutual understanding, the IC project team worked out ground rules to ensure the flow of communication in the InCaS workshop.	<i>“Young staff should express their views before senior members show their cards... by setting up this kind of rule we had a lot more interesting discussions” (JJ, trainer).</i>
	Making critical reflection	Critical reflection	The ability of to acknowledge the limitation of IC measurement results and to relate the results back to the aim of implementing IC reporting systems in a focal organisation.	<i>“The big difference is that people can capable of thinking critically about which information of intangibles is useful to them and for which reason it is useful” (MW, country coach).</i>
		Opportunities for going beyond IC measurement results	Deep-reflection that enables the clarification of the legitimacy of IC metrics.	<i>“... the essence of its methodology puts people first ad that’s what they really need” (DF, trainer)</i>
		Learning from critical reflection	Critical reflection helps people understand the implicit power structure in an organisation and it thus calls for wider participation of IC practice.	<i>“In a way, InCaS showed to this person and her team members, not to the boss, there are things that they can improve” (MR, research assistant).</i>
	The role of mediation	Mediation	Through structured participatory activities and interactive IC artefacts, SME	<i>“I will say, for the first time, the way that InCaS organised a series of workshops, the</i>

			<p>participants' natural perceptions of IC were transformed into a systematic way of thinking that became socio-culturally meaningful to their local practices.</p>	<p><i>engaging activities, and the toolbox, helped a great deal to make clear of the use of IC or its potential in the firms... it wasn't about IC itself, it's about an IC based perspective in their daily work environment"</i> (JF, trainer).</p>
		Opportunities for contextualising IC in SMEs	<p>IC artefacts provided a generic language and a visualisation tool, which pushed SMEs to engage with certain actions for further improvement.</p>	<p><i>"I think you make visible your intangibles, because you have a path, a concrete and visible path... you also know where you want to go, the strategic objectives and the links with these processes..."</i> (EC, research assistant)</p>
		Learning from mediation	<p>When IC is seen as a boundary object, the focus of IC practice tended to focus on 'what does IC do', 'where is IC located', and 'how is IC related to value creation'.</p>	<p><i>"Just when you ask the question 'where to find this IC resource', you would embark on a new journey... It is a different focus..."</i> (CL, country coach).</p>
	Internalising/externalising the systematic standard	Internal-Externalisation	<p>The key for SMEs to match their business models with their intangible resources so as to be able to identify and</p>	<p><i>"The role of systematisation is that SMEs learned how to match their business goals, processes, with the right kind of</i></p>

			capitalise on new market opportunities.	<i>intangibles ... you see this was from knowledge to behavioural change" (JJ, trainer).</i>
		Opportunities for the systematisation of local practices	The result of internalising the 'systematic' was externalised as a series of follow up actions that reinforced the connection between IC and a firm's business model.	<i>"People in the company have a fair idea of where a particular word is used and what lies behind it, and I think this is part of the systematisation (PH, country coach)</i>
		Learning from internationalisation and externalisation	The cyclic relationship between internalisation and externalisation is the reflection of the private and the public displays of learning.	<i>"IC is a learning process, you don't only get individual who learns, but also the whole organisation ... these patterns and exchange bring about the flow of new knowledge and new practice (LE, IC expert).</i>
	Identifying IC assemblages	IC event	The emergent activities or repercussion in SMEs that elicits either problem solving or problematisation experiences.	<i>"Networking is an open field of experiments ... against the current economic climate, people are more keen to learn about this new way of doing business" (AVP, research assistant).</i>
		IC leadership	The emergent leadership attribute that makes management a relating process, which is witnessed by	<i>"I have to go back to the leadership issue, I would call it 'strategic leadership', why? Because it is about who you</i>

			managers' capacity to affect and to be affected.	<i>can relate to, in a way that people actually listen to you and vice versa"</i> (MW, country coach)
		IC concept	A linguistic phenomenon that highlights the difference between IC as a technical language and IC as a rich language. The space in between is reserved for imagination and co-authoring affective stories.	<i>"What we call 'social competencies' in the InCaS language ... now when they receive a client, they understand the richness of this language, and they will receive a smile, more euros, or whatever it is from the other side of the table"</i> (BM, country coach).
	Recognising rhizomatic becoming	Becoming	The emerging phenomenon that double captures the dynamic process of IC becoming of affect and affect becoming of IC.	<i>"Let me give you a quote, it's not from me, it's from the director of A-FIRM. He said something like 'leadership is nothing else but investing hopes in people' ... (JJ, trainer)</i>
		Becoming a strategic alliance	The need of aligning a firm's strategic objectives with their stakeholders by establishing a trust-based IC culture.	<i>"The fact that people are willing to sit together to discuss their present and their common future, is an act of forming an alliance ... this cannot be done without trust and forward-thinking"</i> (MB, IC expert).

Appendix 5 Organisational Chart of the EBU in S-FIRM

 <p>1</p>	<p>ORGANIZATIONAL CHART EBU</p>	<p>Cód. MC-5</p> <p>EDICIÓN: 1</p> <p>Página.: 1 /2</p>
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