

The London School of Economics and Political Science

Regional Clustering Through Internet

Networks:

The Case of Web-enabled Entrepreneurial Cluster in China

Boyi Li

A thesis submitted to the Department of Management of the London School of Economics for the degree of Doctor of Philosophy.

London, September 2014

Declaration

I certify that the thesis I have presented for examination for the MPhil/PhD degree of the London School of Economics and Political Science is solely my own work other than where I have clearly indicated that it is the work of others (in which case the extent of any work carried out jointly by me and any other person is clearly identified in it).

The copyright of this thesis rests with the author. Quotation from it is permitted, provided that full acknowledgement is made. This thesis may not be reproduced without my prior written consent.

I warrant that this authorisation does not, to the best of my belief, infringe the rights of any third party.

Abstract

This research examines the rationale of geographic co-location of entrepreneurs who do business on internet platforms. Prior research has shown that entrepreneurs gain valuable synergy benefits from being embedded in industrial networks. Nevertheless, the advantages of geographic clustering when business is conducted via the internet are still to be understood. This research aims to understand how internet-based economic activity interacts with local social relations and structures, thus seeking to explain the phenomenon of industrial clustering of internet-enabled entrepreneurial activity. Guided by theories of relational and institutional embeddedness, we examine the way social relations are formed online, trace the rationale of local social relations while business is conducted online, and study the role of major institutional actors that support the economic activities of the entrepreneurs.

Empirically, this thesis examines two regional clusters of Chinese micro-entrepreneurs who conduct their business on an e-commerce platform and form dynamic interpersonal ties with business partners and customers both online and offline. The method of ethnographic case study is adopted to gain in depth understanding of the ways various internet networking tools have been appropriated in business practice in these two cases and the ways local micro-entrepreneurs build up collaborative networks in geographic place as well as cyberspace.

The study of Chinese micro-entrepreneurs reveals and substantiates the formation of a hybrid sociality, whereby economic exchange via the internet and business conducted by electronic tools are complemented by local social relations and actively supported by local government and the IT service corporation. This research also contributes to development policy considerations; it shows that regions that are usually unattractive to capital and knowledge/talent flows can gain economic development momentum by entangling the conduct of business on web platforms with local social institutions.

ACKNOWLEDGEMENTS

My first and foremost gratitude goes to the supervisor, Professor Chrisanthi Avgerou, without whom my journey of growing up from a student to a scholar would have been much more difficult. She has been such a wonderful intellectual mentor who masters the art of allowing enough academic freedom for her students while pushing for high quality work (and productivity) at the same time. I'm also indebted to the excellent academic environment of the Information Systems and Innovation Group of the LSE, which provided support reaching far beyond the research scholarship. The confidence of critical thinking and writing has been gradually gained only by working with and having everyday dialogues with all the faculty members and fellow PhD students in this department over the past few years. My special thanks to Jannis Kallinikos, Shirin Madon, Susan Scott, Edgar Whitley, Will Venters, Tony Cornford, and Carsten Sørensen for their support and comments on my work at various stages of the PhD. I am also extremely lucky to be surrounded by excellent PhD colleagues who not only shared my passion about work, but also shared the passion about the vibrant LSE life. In particular, I want to thank Attila Marton, Aaron Martin, Alexksi Aaltonen, Ben Eaton, Jan Herzhoff, Carrie Paris, Nuno Oliveira, Atta Addo, Kyung Park for their support and friendship. I am very grateful for the sponsorship of the Great Britain – China Educational Trust (GBCET). The Chinese PhD Award from GBCET has been an important success factor for my fieldwork in China. I am also grateful for the excellent local support from the staff in Alibaba Group, Taobao.com, Alibaba Research Centre, and the AliPay Company – in particular, Mr. Song Fei, Mr. Aaron Sheng, Mr. Shan Sugan, and the long list of “Taobaoers” based in Hangzhou, Yiwu, Dongfeng and other places. Thank you for introducing me to this wonderland of Chinese e-commerce world.

Table of Contents

1. Introduction.....	8
1.1 Research Background.....	8
1.2 Research Design	15
1.3 Research Question and Potential Contributions	20
1.4 Thesis Structure.....	23
2. Literature Review.....	26
2.1 Defining Network	26
2.2 The Logic of Clustering	31
2.3 The Roles of Networks in Clusters	46
2.4 Clusters and the Internet Networks.....	48
2.5 Online Sociality – the Logic of Social Media.....	55
3. On Embeddedness Theory.....	70
3.1 The Origins of Embeddedness Theory	70
3.2 Embeddedness in Cyberspace?.....	85
3.3 On Hybrid Sociality – Embeddedness Revisited.....	105
4. Research Methodology	113
4.1 Introduction	113
4.2 Research Design and Field Experience.....	115
4.3 Access -- Beyond Gatekeeper	124
4.4 Participant Observation	125
4.5 Data Analysis	128
5. A Tale of Two Regions.....	142
5.1 On China	142

5.2 The World of Taobao: An Evolving Business “Ecosystem”	151
5.3 Furniture Manufacturing and e-Commerce -- A Rural Development Story	180
5.4 Yiwu City - Embedding Netpreneur’s Local Community	206
6. Analysis	231
6.1 Local Embeddedness.....	232
6.2 Running e-Business: Articulating Online Relations in Managerial Practice.....	256
6.3 Hybrid Sociality.....	288
7. Conclusion	299
7.1 Key Findings and Contribution.....	299
7.2 Policy Implications.....	302
7.3 Limitations.....	304
References.....	307
Appendix A. Data Sources.....	330
Appendix B. Services on Taobao Platform.....	333
Appendix C. Taobao’s Credit Grade Scheme.....	334
Appendix D. Excerpts of Original Interview Transcripts (in Chinese)	335
Appendix E. Images of Dongfeng Furniture Cluster	337
Appendix F. Images of Yiwu’s QingYanLiu Neighbourhood	343
Appendix G. A Geographic View of Chinese E-Commerce – based on Alibaba’s Real-time Data.....	345
Appendix H. The survey form used to collect basic information of local netpreneurs (in Chinese).....	346

List of Tables

Table 3-1 A summary of embeddedness theory in addressing economic exchange problems	73
Table 3-2 Who is Embedded in What? A Review of Perspectives	80
Table 5-1 A list of Certified Badges on Seller’s Profile Page.....	161
Table 5-2 A summary of Dongfeng furniture business cluster in 2011	192
Table 6-1 Managerial Rationalities in Three Domains of Activity	269
Table 6-2 Interpretive Schemes of Matching Institution.....	287

List of Figures

Figure 3-1 Hermeneutic Cycles of Human-Machine Symbolic Interaction.....	100
Figure 3-2 Embeddedness in the Self-Referential Habitat of Data Tokens	102
Figure 3-3 Sense-making and the manufacturing of digital objects on Internet	104
Figure 3-4 Embeddedness as Hybrid Sociality	111
Figure 5-1 Geographical distribution of furniture Sector on Taobao 2010 (Data source: Shu.taobao.com)	183
Figure 5-2 Yiwu’s location in China	207
Figure 5-3 The location of Yiwu in CRDEZ Region	209
Figure 5-4 Photo from the “Central Zhejiang Info” November, 2009	211
Figure 5-5 Key locations in Yiwu	220
Figure 6-1 The Circulation of Information on Taobao Platform.....	272

1. Introduction

1.1 Research Background

The communication infrastructure of the Internet presents new ways of organizing socio-economic activities. This organizational innovation is evident when information systems of business corporations (as well as governments, NGOs or other organizations) help reduce hierarchies and highlight the horizontal linkages among individuals and divisions (Markus 1983, Orlikowski 1991, Davenport 1993). As a complex, fast-expanding, decentralized information system, the Internet is essentially an organizational innovation (Tapscott 1996, Castells 2003), mobilizing and coordinating the socio-economic activities of individuals, firms, and governments in a way and a scale we have never seen before. Internet-based activities develop an emerging form organization loosely defined as the “network”.

The notion of network, of course, does not refer to the Internet exclusively. In research literature, exploration of networks as organizational forms stems from the discontent on neoclassic theories of market and hierarchy as the generic forms of economic organization (Granovetter 1985, Powell and DiMaggio 1991). Organizational sociologists clearly distinguished networks as a new generic

organizational form, and highlighted the salient features of networks (Powell 2003). Theorists of evolutionary economics embraced the diversity of the organizational forms, regarding such diversity as the indispensable “population” or “genetic pool” for innovation and growth (Nelson and Winter 1982, Hodgson 2009). Networks, either in the form of the inter-firm, firm-government cooperative arrangements, or in the form of social network of personal ties, constitute the essential elements of such “diversity of species” (Grabher and Stark 1997). Networks have been widely understood as a particular way of organizing economic activities long before the dawn of the Internet age.

Attention to the networks has also been given in the field of economic geography (Becattini 1990, Amin and Thrift 1995, Staber 1996, Cooke 2001). With origins from the theoretical foundations laid by the sociologists (Burt 1980, Granovetter 1992, Powell and Smith-Doerr 1994), geographers recognized and highlighted local networks -- either formal inter-firm networks or informal social ties -- as an essential structure of spatial organization, which enables as well as restricts the “path-selection” or “path-dependence” of regional development (Grabher 1993, Asheim 1996, Saxenian 1999, Asheim 2000, Gordon and McCann 2000, Nooteboom 2006). A key contribution of the geography literature is the discussion of the “institutional thickness” that facilitates and supports regional industrial networks, which constitute the unique sources of regional competitiveness (Camagni 1991, Morgan 1997, Simme 1997,

Hotz-Hart, Clark et al. 2000). Following this line of thinking, networks of firms supported by regional institutional environment, have been generally recognized, by an interdisciplinary literature, as the *modus operandi* of many successful industrial clusters, ranging from the innovation-intensive clusters of Silicon Valley to the craftsmanship clusters in the Third Italy regions. For many geographers, industrial clusters represent the territorial manifestation of network organizations.

However, these views of networks -- either as an organizational genre or as a territorial distribution of economic activities -- appear insufficient to grasp the unfolding dynamics of network organizations rising in the Internet. In recent years, the phenomenal development of platforms of a wide range of information services and technologies (digital media, mobile computing, broadband, sensors etc.) provide abundant possibilities to organize the “virtual togetherness” among people (and things) in distributed locations or across time. As the communication in virtual space becomes an integral part of everyday life, the valuable information, knowledge and cultural influence, traditionally locked within territory-bounded networks, travel across borders and feed into a dynamic process of social and economic activities across territories. The continuous sophistication of cyberspace technologies -- to facilitate the collection, processing and delivery of information -- renders the face-to-face conversations less necessary in many aspects of social life. “Being together” and “personal/common identity” are increasingly mediated and

translated by technologies, changing the everyday notions like “being-in-office” and “being-in-holiday” (Jarvenpaa, Knoll et al. 1998).

Networks enabled by recent Web 2.0 and Software-as-a-Service (SaaS) innovations, either in the form of social ties as those of Facebook, Twitter and SecondLife, or in the form of business/production cooperatives as those of Wikipedia, GNU/Linux or eBay, exhibit an emerging organizational form which neither the organizational sociologists nor the geographers have fully appreciated. Yochai Benkler (2006) highlighted the non-proprietary peer-production feature of mass-scale collaborative activities organized by Internet networks. He used the Marxist term “social production” to refer to the phenomena that social networks of individual volunteers organized the production process of information or cultural projects in which motivation of work mostly comes from social values rather than market-exchange values. In a similar vein, recent enthusiasts on Web 2.0 manage to translate the word-wide success of Web 2.0 services into some contagious buzzwords such as the “wikinomics”, “co-creation” or “we-think”, and suggest that the decentralized, peer production networks serve as the fundamental institutional arrangement of digital economy. The notions of “participative culture” (Jenkins 2006), “creative commons” (Lessig 2003), “folksonomies” (Quintarelli 2005) and “liberal commitments” (Lessig 2004, Benkler and Nissenbaum 2006) have been highlighted to characterize such networks. Moreover, it has been argued that such digital cultures

and institutional arrangement may get translated into new liberal politics, driving forward waves of contemporary social movements (Castells 2012, Morozov 2012), as exemplified by the Arab Springs and Occupy Wall Street movements.

Along with the emergence of these new networks there are calls for rethinking “territories” in the age of Internet. Waves of technology prophets envisioned that the sophisticated technologies of global ICT networks would dissolve the significance of territory, leading to a distance-defiant, “flat” space of capitalist geography (Negroponte 1996, Cairncross 2001, Friedman 2007). Geographers may easily dismiss these visions as sociologically naïve or technology-determinist. Nevertheless, they generally recognized that in the age of knowledge economy, when knowledge, skills and information are the most important elements for economic growth, the importance of distance for regional competitiveness is necessarily giving way to the importance of accessibility to information and knowledge (Giaoutzi and Nijkamp 1988, Krugman and Paul 1991, Malecki and Tootle 1996, Leamer and Storper 2001). This view has been celebrated when the rise of the so-called ‘new economy’ coupled with economic globalisation, new management techniques and the neoliberal ideology, created contagious optimistic imagination about the future of ‘network capitalism’ (Castells 1996), where individuals work in ‘electronic cottages’ of computer networks, and footloose business organisation expand their operations across the

geographies via flexible information systems. As Peter Nijkamp suggested in his *Informatics and Regional Development* (Nijkamp 1988), thanks to the information infrastructure backboneed by ICTs, the 'periphery' regions in the industrial age may not be periphery in the Internet age. Territories, while increasingly inter-connected via the data flows of ICT networks, may continue to matter in terms of organizing socio-economic activities in local networks, although whether and how the local networks are to be complemented -- if not replaced -- by Internet networks may depend largely on specific industries and the mobility of relevant knowledge and information across territories (Castells 1996, Leamer and Storper 2001).

The territorial and virtual networks have been discussed mainly as separate fields. Territorial networks have been extensively examined in cluster literature as the essential spatial arrangement for achieving regional competitiveness, while attention to virtual networks, especially influential in information-rich, innovation-intensive sectors, recently emerged as a new paradigm of social collaboration, allegedly relying on online social ties more than market or hierarchy mechanisms to facilitate coordination. Discussions on the inter-relations between territorial arrangements and virtual arrangements have been generally characterized by two broad stereotypes: a) the new age of Internet is witnessing the rise of cyberspace as the main field of coordination and collaboration at the expense of the rivalry territorial arrangements; b)

territorial arrangements remain important in the Internet age albeit being continuously shaped by cyberspace, because territories provide conditions (face-to-face rich communications, homogenous culture, existence of historical narratives etc.) that virtual networks cannot match. Stephen Graham (1998), in his seminal paper "*the end of geography or the explosion of space: conceptualizing space, place and information technology*", similarly characterized the discourses mostly assumed in literature of telecommunication and cities as either "substitution" perspectives or "co-evolution" perspectives.

What is yet to be understood is how virtual networks actually interact and imbricate with territorial networks when individuals participate in both networks to organize social collaborations, instead of being in one or the other. After all, there is no single individual whose socio-economic life is only taking place in cyberspace without living in territorial context. As the geographers have long been arguing, networks need to be considered in a context of thick social, political and cultural settings. This argument also applies to the analysis of virtual networks – for instance, the social networks of peer production don't work in a space of only atomized actors and connections, but instead are embedded in institutional contexts. These are still to be understood, but at the outset of this research, we can assume that the emerging Internet networks, like territorial networks, are associated with a wide range of institutional elements such as the rationalities, identities and collective ideology

(Sassen 2001, Downey and Fisher 2006). Just as local relations move to the global scale through Internet networks, global relations and domains are articulated in local social domains (Latham and Sassen 2009). This research aims to understand the experience of individual's life in social networks of both the territorial relations and the virtual relations. If virtual space is understood as a new "space", then it remains problematic to understand the way territory intersects with the new 'space' created by ICT networks (Graham 1998, Downey and Fisher 2006, Latham and Sassen 2009). Specifically, this research endeavors to reveal how regional clusters develop through a mixture of territorial networks and virtual networks, and how such mixture of networks is embedded in the institutional context.

1.2 Research Design

The ideas and concepts regarding how economic rationalities are conditioned by social structures have been formulated in both domains of territorial networks and internet networks. This research is driven by the intellectual curiosity on the relationship between the effects of embedded ties in territorial domains and the internet domains. Are the online networking activities giving rise to the behavior agency that is less dependent on locally embedded relations? Or are the local actors finding themselves still critically dependent on local relations in Internet age? To what extent are the behavioral rationalities being re-configured by the combination of territorial relations and internet relations? With these

initial explorative, abstract and theoretical questions in mind, I seek to understand the clustering process of Chinese micro-entrepreneurs in suburban and rural regions, whose business are enabled by online e-business platforms (Taobao.com), particularly, the ways the micro-entrepreneurs manage the online and offline relations in a consistent way of everyday life.

The theoretical frameworks of embeddedness – which I will detail in Chapter 3 – serves as the a “sensitizing device” (Kallinikos 2011) and provides the initial directions of “what to look for” in the field. Since the concepts of embeddedness tend to be very abstract, the empirical observations took the form of on-site observation (of what the entrepreneurs are actually doing in their daily business) and on-site informal conversations (to know how they are thinking, reasoning and justifying their daily pragmatic rationalities) in order to produce a large trunk of factual data that are capable of forming a conceptually “*structured dialogue*” between the fact and the theory. The empirical analysis is then aimed to provide feedback to theoretical inquiry in two ways: a) testing whether the theoretical insights can be supported by empirical data; and more importantly b) substantiating the theory of hybrid sociiaty with the support of concrete empirical findings.

Hence, during this theory-informed empirical investigation, my main objective is to a) assess the theoretical proposition that individual actors’

economic rationalities are conditioned by both the social relations of territorial networks and the relations of the internet networks; b) to explain how such imbrications of hybrid sociality have important impacts on the ways business clusters can be understood.

The study of Chinese entrepreneurial clusters takes a single case study with two regional contexts. It is important to note that it's not the intention to tell the same story in multiple contexts in efforts to somehow generalize theoretical concepts in a de-contextualised way. Instead, multiple contexts in this case is indispensable because it is simply the fact that these regional contexts are actually linked together as a part of a big picture, which is Taobao platform manages to connect regional economies in a single business network. So the case study is designed to illustrate how the internet networks are enabling geographic change, reconfiguring not only the relations between individuals, but also the relations between places and regions. Essentially, it is a single case study about Taobao platform and the enabling effect of the platform for local entrepreneurs, not a multiple case study to highlight the different features of local clustering.

Two regions in focus -- Yiwu City and Dongfeng Village -- are located in Jiangsu Province and Zhejiang Province of China. The two regions are chosen for study because both host dynamic communities of entrepreneurs using the internet platforms to develop business

opportunities (Taobao Company preferred the term “netpreneurs” to refer to its main body of customer). Due to the suburban and rural location, it is a very practical concern for each entrepreneur to think about how their choice of local context (far away from major cities, less reliable transportation facilities, distance from the potential customers etc.) has helped the growth of their business, and whether the Taobao platform offers enough opportunities of growth to compensate the locational disadvantages. So I chose to study suburban and rural entrepreneurs mainly because it is more analytically possible to differentiate which are the effects of local conditions and which are the effects of non-local factors (Taobao networks). The geographic change enabled by the internet networks can be clearly seen in those periphery regions.

The study includes three components of empirical investigation: a) the technology platforms of Taobao and the company’s business propositions (strategy, service and product, customer target, and corporate culture); b) the social-institutional players in the local areas that are directly involved in the entrepreneurial initiatives in the local area – business associations (formal and informal), local government, financing facilitators, material/service suppliers, training and knowledge centres etc; and c) the detailed daily tasks performed by entrepreneurs which included both the software-mediated managerial tasks which are

structured, routinized and predictable, as well as the local social interactions which tend to be random, informal, and contingency-based.

Informal conversation-based interviews and on-site observation fieldnotes are major data collection methods. Informal, semi-structured interviews are designed to collect the data of the entrepreneur's subjective interpretation of his/her life situation, managerial rationalities, and the cognitive understandings of the local/online culture, while the on-site observation – simply, by sitting side by side with the entrepreneurs and recording every task they performed during business time – serves as a technique to collect data which reflect their behavior rationalities and effectively how they interpret the life situations and justify their decisions. The two methods of data collection have been used complementarily to investigate the behavior rationalities of entrepreneurs in relation to their technology use and their particular context.

The main purpose for collecting this kind of data – subjective understandings, conversations and everyday practice – is to be able to “see” the world as “the native” sees, so that it becomes possible to take a step back and reflect on how the subjectivity and practice are linked to the surrounding social relations – upon which the theoretical framework of social embeddedness has made strong propositions. The overarching epistemologic assumption is that the observable reality includes both the subjective meanings and interpretations of actors and the objective facts

(the narrative, the unfolding events) which are mainly articulated through practice. And to approach such observable reality, the researchers should interpret the meanings and actions *in situ*, and more importantly to reflectively assess how the actor's particular ways of interpretations (actions) have been framed by his/her relations with other subjective meanings. Hence, the purpose of the whole investigation is to uncover how the local actors justify their particular economic rationalities in the networks of both local and technological social relations. Details of the research process and analysis strategy are discussed in Chapter 4.

1.3 Research Question and Potential Contributions

What makes the case of Yiwu and Dongfeng's networks particularly interesting is the way that the online activities of the micro-entrepreneurs are blended into the local efforts of mobilizing resources (social capital, know-how and fine-grained information etc.) for the purpose of launching and sustaining their business. In a way that micro-entrepreneurs' business are sustained via ICT networks, their local clustering movement seems to become what geographers normally stylized as the "learning regions" or "regional innovation systems" (Lundvall and Johnson 1994). ICT networks have long been considered as part of the formula of regional development policy. And yet too much emphasis of current understandings has been placed on the roles of ICT networks as either global market access or transferring advanced know-how or "best

practice” from the “core” to the “periphery”. There has been little research exploring the possibilities of established social relationships (family, friends, alumni, state capitalist etc.) and their contextual socio-economic change as prior conditions for regional actors to appropriate ICT networks into the local development efforts. This research is designed to examine, in context of China, *how are the local actor’s economic rationalities justified by their embeddedness in both local social networks and non-local technological networks?*

In this regard, a discussion of the relationship between urban space and ICTs is necessary. Recent studies on the relationship between material space and cyberspace offer helpful insights on the ways social life is constructed. Theoretical arguments drawing on the study of communication and cities tend to argue that the cyberspace itself, instead of being constructed purely out of technological engineering, is predominantly a social and metropolitan phenomenon, which is growing out of the old cities (Graham and Marvin 1996). William Mitchell used the notion of ‘recombinant architecture’ to demonstrate how the material spaces are now being infused with cyberspace ‘entry points’ of all kinds (Mitchell 1995), denoting that the material space and the electronic space are not parallels for actors to choose and switch in-between, but are continuously intersected and co-produced. Graham (1998) called this complex local social construction process the ‘recursive interaction’. Under this vision, individual actors and institutions (corporations, libraries,

banks, universities, museums, markets etc.) increasingly become embodied through its presence in both material spaces and electronic spaces.

It is such dialectic, dynamic and complex relationship between the 'embeddedness' and 'dis-embeddedness', between the social life in cyberspace and in material place, as well as the ongoing networking process mediated and shaped by the ICTs and territories, that I endeavour to uncover and explain in the thesis. Specifically, this research focuses on the ongoing Internet-enabled phenomenon of industrial clustering in China, unpacking a socio-technical process of how individuals and institutions form up complex social networks via material place and cyberspace, and understanding the way how social relation formed via cyberspace, and the culture attached to it, can be materialised in the context of geographic place. The analytic efforts contribute to the understanding of an emerging form of industrial concentration that is moderated by the Internet as central business platform. I believe that such form of clustering presents a unique understanding on the way ICT contributes to the regional development efforts.

This research contributes to the knowledge of how the backward "periphery" regions of developing countries, usually unattractive to capital investment and knowledge/talents input from the global core, manage to

entangle web-business-platforms (and remote service providers) with local social establishment, thereby gain substantial competitiveness through imbrications of territorial structures and cyberspace. Such research efforts can be taken as an attempt to address the concern on how ICTs can be actually translated into economic growth in developing countries. In a critical review on literature of Information Systems in Developing Countries (ISDCs), Avgerou (2008) contends: *“there is a knowledge gap between what the general economic propositions about ICTs and economic growth and the particular course of actions that attempt to achieve socio-economic improvement through introducing ICT and organizational change”*. She then calls upon researchers to elaborate the actual “process of change of social and individual behavior” implicated in ICTs and economic growth, which may then serve as evidence to challenge the dominant ICT for development theories that guide policy-making. By elaborating a particular model of industrial clustering, this research provides findings and arguments for theorizing the relations between ICT networks and economic activities by observing the action of actors in context.

1.4 Thesis Structure

This thesis is structured as following:

Chapter 2 focuses on how networks have been conceptualised in the literature of industrial cluster and social media. It reviews the theoretical

perspectives and assumptions underlying the discussions of networks in cluster literature, and explains how geographic conditions remain important for industrial networking. It also reflects how the Internet fits into the network assumptions in economic activities, and how it affects the impacts of geographic conditions on industrial clustering. As the new domains of social-economic and power relations are prospering through Internet networks, it examines how social media platforms are changing the logic of sociality in online networks.

Chapter 3 presents the concept of “embeddedness” as the theoretical foundation for studying local clustering of economic activities conducted through Internet networks. It traces the origins of the ‘embeddedness’ concept in the literature of economic sociology, and explores what it actually means to be “embedded” in socio-economic environment. The embeddedness theory is then understood as a form of *hybrid sociality* to unpack the way economic actors are living cyber-life in territorial context, understanding how social relations not only condition economic actors but also are shaped by the institutional structures both online and offline.

Chapter 4 presents the research methodology.

Chapter 5 presents the case of Yiwu city and Dongfeng village in the context of China’s development efforts. After a brief discussion of China’s socio-economic situations, it details the role of Taobao, both as online

business platform, and offline institutional support, in the development of micro-entrepreneurs' venture. It then describes how micro-entrepreneurs in both Yiwu and Dongfeng regions manage to "group" together and form up sustainable economic activity at a community level.

Chapter 6 is the data analysis chapter. Grounded on embeddedness theory, it aims to understand how local micro-entrepreneurs are simultaneously embedded in virtual relationships and territorial place.

Chapter 7 gives an overview of the key findings and summarises the key contributions to current literature, as well as potential policy implications. It also discusses the limitations of this research.

2. Literature Review

This chapter reviews previous research on industrial network with a particular focus on its significance for business cluster in the age of Internet. It begins with a clarification of the notion of network as an alternative organizational form. It then goes on to uncover the various social and economic arrangements underlying the development of business clusters. The next section reviews the roles of local networks in the development of local cluster. The final section discusses the impacts of Internet networks on clusters.

2.1 Defining Network

There are broadly three schools in literature in attempts to define network as an organizational form: namely, the neo-institutional school, the structural school and the governance school. The neo-institutional perspective of network stems from the theory of transaction-cost economics, which understands organizational forms in a spectrum of variations between market and hierarchy. Market represents those organizational forms in which the informal flows are horizontal and mediated by price, with each member having arms-length transaction relations with others. Hierarchy, on the contrary, is the organizational forms of highly centralized command and control mechanisms, in which members of high ranks tightly control the flows of information and transaction between members. For the neo-institutional economists,

network organizations are simply an intermediate form of organization that is, in some way, a hybrid of both markets and hierarchies (Williamson 1991). Hence, neo-institutional scholars attempted to regard various network forms as the result of the change of conditions associated with transaction cost. For them, network is a contingent arrangement of coordination bouncing between market and hierarchy, depending on the economic conditions measured by transaction cost (Jarillo 1988, Blois 1990).

Organizational sociologists disagreed with the neo-institutional theory of network by arguing that network cannot be derived from either market or hierarchy (DiMaggio and Powell 1982, Powell 2003). Instead, they sought to define network organisation from either the structural perspective or the governance perspective. The structural perspective of network is essentially to define each form of organisation in the language of nodes and ties (Burt 1982, Gulati and Gargiulo 1999). Metaphorically, every organisational form including market and hierarchy is defined as a network. Market is simply the network where each node has immanent transaction relations with other nodes, while hierarchy is a highly centralised network where a few nodes control the whole flows of transactions/communications. The structural school, thus, sought to theorise the network organisation and characterise their features by quantitatively identifying the patterns of ties in relation to the attributes of nodes (Burt 1980, Gulati 1998, Rousseau, Sitkin et al. 1998).

In contrast, the governance perspective sheds light on the content of social relations -- for example, the relations of social power -- between individuals and firms in network. Instead of simply accounting for the patterns of nodes and ties, scholars like Podolny and Page (1998) defined the network as *“any collection of actors that pursue repeated, enduring exchange relations with one another and, at the same time, lack a legitimate organizational authority to arbitrate and resolve disputes that may arise during the exchange”*. In this definition, Podolny and Page (1998) stressed that the network is different from market in the sense that the exchange relations are enduring rather than episodic. They also argued that the network forms differ from hierarch in the way that it lacks the existence of legitimate authority to arbitrate and resolve disputes. Powell (2003) further suggested that the norm of reciprocity between actors should be the guiding principle underlying network forms of organisation. According to the governance school, organisations of network forms can be clearly distinguished from hierarchy and market forms by the content of social relations connecting firms and individuals. Examples of networks can be found in various modern organisational arrangements such as joint ventures, strategic alliances, business groups, research consortia, franchises, outsourcing agreements etc (Podolny and Page 1998).

Scholars of the governance school further indicated that some qualities of social relations in networks -- for example, common ethical terms and value-orientations -- may critically differentiate the actors of certain networks from those outside the network boundaries (Hirschman 1970, Dore 1983). These common ethic terms and value-orientations are, by no means, contract-based commitments. Yet they generate mutual trust and commitments among actors that are of critical importance for inducing cooperative behaviour. Such emphasis on the roles of social values for trust in networks has been stressed in many literature of governance school. For example, in his account of "small firm networks", Perrow (1993) argued that the commonly-shared trust within the network serve as the defining element of small firm production networks. Similarly, Uzzi (1997, 1999), in his theorizing efforts of "the embedded ties", also stressed that the strong enduring relationship between enterprises in the local network is, to a large extent, maintained by the trustworthiness and mutual obligation nurtured in a community of long-term relations. For the governance school, the ethic of trust is the defining element of a network relation (DiMaggio and Powell 1982, DiMaggio and Zukin 1990, Podolny and Page 1998).

Another defining feature of network ties in modern industry is knowledge-sharing and learning activities as the main content of ties connecting actors (Dore 1983, Powell and Smith-Doerr 1994, Uzzi and Gillespie 2002). The governance school of network theories generally assumes

that networks of enterprises are more capable of generating, accumulating and distributing a diversity of information than either markets or hierarchies (Powell 2003). As Powell (2003) argued, “*the most valuable information is rarely that which flows down the formal chain of command in an organization, or that which can be inferred from price signals, rather it is that which is obtained from someone you have dealt with in the past and found to be reliable*” .

Current literature offered two different views of learning through networks. The first view takes network ties as conduits for the transfer of information and knowledge (Contractor and Lorange 1988, Kogut 1988, Root 1988, Hamel 1991), assuming that the behaviour of knowledge-sharing and learning corresponds to the structure of networks -- the degree of connectivity (and centrality) of nodes. The second view assumes that valuable information and knowledge may be synthesised by interactions of participants in network, whereas pieces of such information or knowledge are distributed among different individuals and firms (Powell and Brantley 1992, Podolny, Stuart et al. 1996, Stuart and Podolny 1996). These views then lead to divergent understandings of how innovations occur in networks: the former believed that it is the position of actors (nodes) in networks of ties that determined how innovation occurs within firms, while the latter suggested that innovation actually takes place in-between firms instead of within firms (Stuart 1998).

Both views result in some efforts of systematic efforts of mapping knowledge in networks in strategy management literature.

Apart from knowledge-sharing and learning, researchers also identified many aspects of social relations that help discern the existence of networks in business and industrial activities. For example, Uzzi (1997) compared the factors of quality from network-embedded long-term relations with those from short-term arms-length subcontracting relations, and concluded that the network embedded relations are more conducive to high-quality production. Still others found that network ties generate institutional isomorphism among the population of actors (Baum and Oliver 1992, Podolny 1993, Stuart, Hoang et al. 1999). Last but not least, it has been noted that network ties may contribute to promote social welfare and social cohesion in regions or communities of firms. Perrow (1993) found that network ties provide individual workers with less bureaucratic working environment, less inequality in the distribution of wealth, and a sense of community. Scholars of industrial clusters and regional development similarly suggested that network ties are essential for local economic development as the social cohesion with a sense of community lubricates the “joint actions” among participants (Becattini 1990, Platteau 1994, Schmitz 1995, Cowling and Sugden 1999).

2.2 The Logic of Clustering

There has been a diversity of terms in research literature to describe the phenomena of spatial concentration of economic activities – agglomeration, spatial concentrations, industrial district, industrial cluster, regional industrial systems, innovative milieu etc. While each synonym was defined from certain specific angles with particular theoretical and epistemological underpinnings, they generally share the essential meanings (Maskell and Kebir 2006). Here I use the term business cluster to broadly refer to the phenomena of the concentration of business/industrial activities in regions. A broad definition of cluster inspired by Porter (1998), which can be rephrased as ‘*a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities*’. The definition by Cooke and Huggins (2003) is also helpful to illustrate the point here: “*geographically proximate firms in vertical and horizontal relationships involving a localized enterprise support infrastructure with shared developmental vision for business growth, based on competition and cooperation in a specific market field*”. Both versions of definition are instrumental for the following discussions because of its ambiguity and apparent universalism¹ (Asheim, Cooke et al. 2006).

¹ Such ambiguity is particularly interested to our research concern in this thesis, as we are dealing with an untraditional form of industrial concentration that is not only conditioned by location and regional context, but also is being mediated by ICTs. The lack of strong theoretical underpinning of these two versions of cluster definition entails the important cognitive freedom for us to explore the nature of industrial clustering, which helps us in later discussions to understand similar clustering activities mediated by ICTs. In the following argument, we will continue to use the ‘industrial cluster’ to mean the general phenomenon of industrial concentration in particular regions.

The literature on business cluster is vast and varied. However, the prime concern of cluster literature, according to Schweitzer, Marco et al (2003), generally pursues two themes of research. The first theme explores the specific factors that are responsible for attracting particular firms to locate in particular locations. And the second theme uncovers the process through which clustering produces synergies among collocating actors that generate collective competitiveness of the whole region. Here I discuss each theme of research in two different schools of cluster research. The first school concerns the clustering mostly as an economic phenomenon, developing various models of economic equilibrium in order to describe the factors and processes of why and how cluster occurs. The second school stresses the structure of institutions in cluster locations, and maintains that clusters are the product of the particular institutional structures present in the locations. Each school developed its own sets of factors and accounts of process producing synergies within clusters. The following section (2.2.3) then broadly categorises different types of clusters according to their underlying economic logic (2.2.1) and institutional logic (2.2.2).

2.2.1 The economic logic of clustering

Alfred Marshall, in his pioneering study of industrial agglomeration (1895), briefly mentioned the non-economic social factors (such as trust) within agglomeration that are conducive for enterprises to locate in similar locations, but generally interpreted these factors under the category of

external economies without further exploration. Later neoclassical economics generally chose to ignore the non-economic sides of industrial cluster and specifically focused on the economic logic of organising resources under formal contract-based inter-firm relations (Weber 1909, Young 1928, Lösch 1940, Krugman 1998). Another branch of early economic geography, initiated by the German spatial economist Johann Heinrich von Thünen (Von Thünen and Hall 1966), tends to characterise the main features of a particular location that are attractive for enterprises. Among these local features, natural resources and the supply of raw materials account for the major consideration of locating an enterprise. Early studies of economic geography were occupied by the efforts to find ways to assess the role of transportation in market dynamics, such as moving raw materials from their sources to production locations where they can be combined with capital and labour to make final products, or the effects of location on regional product pricing mechanisms.

Following this logic, theories of economic geography tend to argue that enterprises choose to cluster in a particular location because of the difficulties of transporting raw materials and shipping products to customers (Marshall 1895, Leamer and Storper 2001). Hence, the classical theories of economic geography, in efforts to integrate spatial factors into the neo-classical economic models, sought to explain the phenomena of industrial concentration using equilibrium models involving

factors such as transportation cost, location of either supply or product market and natural resources (Lösch 1940, Von Thünen and Hall 1966, Starrett 1976).

The second theme of cluster research clearly indicates that there are important synergies arising from the rich communication and interaction among collocating enterprises that the spatial economists have failed to uncover. For example, it is argued that a firm in an industrial cluster usually benefits by having access to 1) a local market for skills that reduce specialised labour search costs, 2) a local specialised supply of raw materials, equipment, and services, reducing input cost with improved quality and 3) technical and market flows of specific knowledge (Marshall 1895, Becattini 1990, Krugman and Paul 1991).

Such benefits can be approached in two categories: the vertical perspective and the horizontal perspective. The vertical perspective argues that firms in cluster can benefit from the possibility of integrating different complementary functions of production from different specialised enterprises via long-term neighbourhood-based relationships (Humphrey, Schmitz et al. 2000). Horizontal perspective suggests that local competition entails positive external economies -- lower entry barrier, knowledge spillovers, community support, training and education etc (Porter 1998). Some scholars used the term “common pool” to describe the horizontal benefits generated by the collocation of firms,

which can be drawn by any actor in the field (Audretsch and Feldman 1996, Audretsch 1998, Cooke 2001). Generally speaking, external economies arise when a critical mass of enterprises specialising in complementary niches of production are located in the same area (Marx 1867, Marshall 1895, Coase 1937). Scitovsky (1954) suggested that there are generally two categories of external economies, namely the technological externalities and the pecuniary externalities. Technological externalities, more commonly termed as the 'spillovers', refer to those non-market interactions between firms and individuals that eventually add value to the production process, for example, the infrastructure of public service, know-how and fine-grained information, collective learning activities, trust-building activities etc. Pecuniary externalities, by contrast, are associated with the change of market prices of commodities and service in local area made by some local actor's decisions (who are not directly intending to do so). Economists have been very good at capturing the latter kind of external economies, using measurable variables such as the intensity of the returns to scale (increasing returns), the strength of firm's market power, the level of barriers to good and service mobility etc (Krugman 1991, Ottaviano and Thisse 2001).

On the other hand, institutional economists suggested that the transaction cost between individuals and firms (and within firms) are germane to the vertical and horizontal benefits of external economies, giving rise to either the economic efficiencies of large hierarchy-based

corporations or a number of SMEs agglomerations (Young 1928, Coase 1937, Williamson 1975). In the former case, external economies can be transformed into internal economies by vertical integration. The benefits of external economies (in supply market, labour market, transportation cost, knowledge spillovers etc) can be appropriated by either vertical integration or horizontal collaboration and competition, subject to the conditions of contextual institutions and historical trajectories that shape the development path of industrial clusters (Aglietta and Fernbach 1979, Boyer 1987).

2.2.2 The institutional logic of clustering

Since 1980s, there has been an “institutional turn” in cluster literature with a clear emphasis on the social, cultural and regulation institutions conditioning the development of clusters. Scott (1988), in his analysis of new industrial spaces in North America and Western Europe, claimed that ‘at the core of all capitalist industrial phenomena lies the institution of commodity production with its overarching logic of accumulation’. For a group of geographers known as the European social regulation school, the economic models are only part of the analysis of the overarching logic of industrial clusters. The regime of accumulation, according to them, is the complex of economic relations that works to guarantee that the production output are facilitated, the economic surplus are appropriated and the new investment are ploughed back into the sphere of production (Boyer 1987). For example, the analysis of Fordist regime

of accumulation includes not only the economic factors of internal economies, mechanism of integration and competition, and other externalities, but also the structure of labour relations, structure of division of labour, patterns of inter-firm relations, and patterns of corporation-bank relations etc. These complexes of socio-technical relations in efforts to stabilise the way industrial clusters achieve economic accumulation are constructed and contested in social activities of local actors.

Moreover, the research of “accumulation regimes” actually extends beyond pure economic relations into the contextual social-political and cultural structures. Lipietz (1986) maintained that the regimes of accumulation should include a wide range of social, political and cultural specifications of regions, such as the established pattern of consumption, private and public means of education, roles of government and legal infrastructure, roles of labour union and civil society, ethic (religious) and cultural values etc. Based on the specification of these established institutions in local regions, it becomes possible to analytically compare and categorise a diversity of industrial clusters. For the school of social regulationists, to understand the dynamics of a particular industrial cluster involves not only the set of economic relations that work to stabilise the regional economy, but also -- more importantly -- the ways economic relations are coupled with the contextual socio-economic and cultural structures.

Another leading voice in this movement of “institutional turn” is the theory of innovative milieu initiated by the GREMI (Groupe de Recherche Européen sur les Milleux Innovateurs) school. The GREMI school (Maillat, Quévit et al. 1993) proposed that the institutional combination of technology, organization and territory constitutes the major constructs of “localized context”, which can be regarded as the system of behaviour logic explaining the unity of behaviour paradigm (collaboration, knowledge-sharing, community-building) in the region. The innovative milieu approach bases major arguments on a set of relationships that develops spontaneously within a given geographical area and generates a localized dynamic process of collective learning – *‘It facilitates mutual acquaintance, collaboration, dissemination and exchange of information, just as it allows for the development of trust-relations. It offers options for reciprocal openness and for disseminating know-how’* (Maillat 1998). In short, innovative milieu helps the local actors conceive, devise and complete their joint project (Maskell and Kebir 2006).

2.2.3 Prototypes of Clusters

Recent cluster literature highlights at least three basic prototypes of clustering: namely, the Marshallian district, the new industrial district, and the innovation cluster. These prototypes have been covered extensively by scholars of a number of disciplines from economics to urban studies.

Each prototype has its own distinctive combination of economic logic and institutional regimes.

1) The Marshallian Industrial District

Marshallian industrial district refers to the concentration of a large number of related industries in proximate places in order to maximize profit and minimize the cost of production. In Marshallian industrial district, enterprises tend to locate proximately to the biggest demand or supply market for saving cost and tapping market information, according to the classical theories of spatial economics. Typical economic factors of such clustering include the economies of scale/scope, local division of labour, knowledge and skills spillover etc. Spatial economists suggest that these factors are all related to distance and are interacting with each other towards a kind of equilibrium state -- via price signals.

Some other economists attempt to collect various factors of clustering and compile them into two opposite categories: the centrifugal forces and the centripetal forces. Still others take the dynamics of clusters as a model of life-cycle development, which can be divided into infant stage, growth stage, mature stage and decline -- each stage are subject to the dynamic balance between centripetal and centrifugal factors (Maskell and Kebir 2006). The neo-institutional economists, alternatively, suggested that the balance between internal efficiencies (corporate hierarchy) and external efficiencies (market transaction) may well explain

the phenomena that some clusters host active local market of resources while others developed a few major industrial conglomerates controlling every local sectors.

Marshallian industrial districts are often associated with the institutional structures known as Fordist regimes -- a wide range of specialised sectors controlled by a few corporate owners, urban space comprised of communities of workers, social class based on corporate hierarchies, a strong influence of trade unions and highly-rigid employment arrangements etc. From the beginning of 20th century to 1970s, Fordist regimes gained historical dominance in modern capitalist economies. Typical sectors of such institutional structures include automobile, capital equipment manufacturing and consumer durables.

In Fordist regimes, the labour is organised in technically-designed assembly lines, producing standard output. The institutional structures of these clusters are coupled with the organisation of production that is based on vertical hierarchies designed by the principle of massive internal economies of scale. Such structures are often characterised by the rigid arrangement of labour-capital relations -- specified job categories, explicit codification of working rules etc. Economic geographers suggested that the clusters of Fordist regimes are often matched by Keynesian macro-economic policies and the institutions of welfare state. Industrial clusters of these kinds are mostly located in

traditional industrial regions of North America and Western Europe (Detroit, Chicago, Midlands of England, Ruhr of Western Germany etc), situated within and around major metropolitan cities, which both house the masses of workers and provide the centres of consumption, education, governance and business service – a collective institution of social regulations.

2) *“The New Industrial District”*

The New Industrial District describes a model of regional clustering where the collective efficiency and competitiveness can be approached by the ‘grouping’ of SMEs in local areas. The model, initially identified by the economic geographers associated with the studies of the Third Italy regions, refers to an industrial region of small-and-medium-sized enterprises (SMEs), which are actively exploring and specialising in small market niches, reducing risks by effectively collaborating with each other in regional industrial networks. The main feature of such industrial district is its collective flexibility, or flexible specialisation. Since SMEs are specialising in different areas of production with different kinds of skills and trajectories of knowledge creation, the whole collection of SMEs has the flexibility to re-organize its production in order to cope with market uncertainties.

Flexible specialisation has been found to be closely associated with the presence of regional networks of individuals and firms. In contrast to

Fordist regimes, whose efficiency largely derives from internal economies of scale, flexible specialisation regimes tend to externalise production process by buying-in services and semi-finished products, and outsourcing internal operations to outside firms -- a process referred as the “vertical disintegration”. Such process often takes place in regions of strong entrepreneurial culture as well as intense competition for niche markets, where technological innovation and knowledge creation become increasingly important for improving competitiveness. Regions of flexible specialisation are usually characterised by the presence of a homogenous local culture, values of communities and inter-personal trust, and sometimes, an interventionist, pro-socialist government. New industrial districts are typically exemplified by a number of manufacturing sectors in the Third Italy regions, characterised by craftsmanship and artisan-designs.

3) Innovation Clusters

Along with the phenomenal success of a few high-tech industrial parks around the world since 1990s, the attention to the mechanisms of science-and-technology-based innovation clusters substantially increased in literature. The main proposition of the innovation cluster proponents is that knowledge is the main factor of production in modern industries and the capability of converting knowledge to products constitutes the major sources for competitiveness. This economic logic is typically exemplified by the ICT and pharmaceutical sectors, where the

returns from market are largely dependent on the firm's (networks of firms) capability to absorb knowledge and generate innovations -- companies like Google, Apple and Microsoft are critically relying on their capability of learning and innovating, not only because they have unique technological advantages in market, but also because manufacturing (making copies of) their products can be cheap (once the know-how is converted into products). Geographers, based on this economic theory, then further suggest that innovation clusters prosper because their geographic proximity facilitates the economic efficiency of knowledge-sharing across organisational boundaries, making it strategically beneficial to share knowledge with the neighbour companies and providing effective buffers against the adverse impacts of technological lock-ins.

The literature on the systems of innovations could be seen as a classic example of analysis assuming this line of logic, which can be rephrased as: 1) knowledge is important for industries but are scattered in various institutions such as the university, research labs, innovation start-ups, big corporations, and venture capitals; 2) geographic proximity, in specific regions, may provide the institutional arrangement through which the local social networks of knowledge workers and inter-firm networks facilitate the dynamic sharing of knowledge and fine-grained information among all members of the local community; and 3) hence, high-tech innovation companies tend to cluster in those regions with sophisticated

institutional structures known as the system of innovation, to benefit from the increasing returns on knowledge creation.

In innovation clusters, the inter-firm relations are characterised less by contract-based transactions, but more by the collegial styles of inter-organisation collaborations infused with the spirits of scientific research and a common vision for future technological change. What essentially characterises such institutional regimes of clusters is not the collocation of university and commercial start-ups, but the capability to organise “joint-actions” and “collective-learning” mediated by various social and cultural institutions.

Maillat described such institutional structures in the language of “innovative milieu” and suggested that ‘the milieux facilitates mutual acquaintance, collaboration, dissemination and exchange of information, just as it allows for the development of trust-relations. It offers options for reciprocal openness and for disseminating know-how’ (Maillat 1998). In a similar vein, Saxineian (1994) noted that the community of IT industries in Silicon Valley has very informal working (T-shirt and jeans working environment) and social culture (university-links, pubs and clubs for business managers and engineers) which makes it easy for employees of different levels or from different companies to socialise with each other and exchange knowledge and information. In short, the innovation clusters are usually embedded in a local culture balanced between the

pursuit of scientific truth and the strong commercial ambition of changing-the-world with technologies.

To summarise, the cluster literature has indicated that there are three general reasons for clusters to take place: 1) the proximity (agglomeration) of firms generates the “Marshallian” external economies in local skill supplies, local manufacturing infrastructure, specialized business support services, and localized knowledge spillovers (Caniëls and Romijn 2005, Asheim and Coenen 2006); 2) Long-term supply-chain relationship between collocated firms forming up a localized ‘industrial complex’ such as the Toyota-style logistical and supply-chain cluster; and 3) innovation-driven regional economic relations that are based on complex social-economic networks that involve collaborations between research institutes, industrial associations, and governance agencies (Cooke and Morgan 2000).

2.3 The Roles of Networks in Clusters

It has been argued that a comprehensive understanding of business cluster involves a combination of knowledge on geography, social networks and inter-organisational relations. According to Nooteboom (2006), regional networks provide at least three kinds of embedding for local actors: institutional, structural and relational. Institutional embedding relates to the impact of regulation and norms of conduct, taxes, subsidies, legal system, infrastructure, schooling, research, labour market etc. It

also includes the dominant ways of thinking in the local area that are related to the social norms shaped by the history and culture of the local. Structural embedding derives from the social network analysis. Structural features of networks are size (number of participants), density (actual number of direct ties as a ration of the maximum possible number), centrality (of which there are several forms) and stability of structure (rate of entry and exit). Relational embedding was mentioned in literature such as those on the 'strength of ties' (Granovetter 1973), but is further developed in more detail in the business literature on alliances or inter-organizational relations (IORs) (Gössling, Oerlemans et al. 2007) (Goessling, Oerlemans et al. 2007). Nooteboom's theory contends that the structure of regional networks and the strength of ties between local firms have impacts on firm's innovation capabilities, with different specification of structural and relational conditions of local networks leading to either the exploration or the exploitation capabilities (Cohen and Levinthal 1990, Krackhardt 1999, Nooteboom 1999, Nooteboom 2004, Gilsing and Nooteboom 2005).

Generally speaking, the efforts of studying network of local clusters point to a direction of theorisation that graudually departs from the neo-classical economic stance on contract-based transaction relations towards an emphasis on the collective communal relations in local cultural atmosphere (Granovetter and Swedberg 1992). Two schools of sociological theories are particularly influential in cluster literature among

this shift: namely, the social capital school and social embeddedness school (Granovetter 1985). Both theories recognise that the local relations of reciprocity and trust have something to do with the establishment of local community institutions and cultural atmosphere. What differentiates them is that the social capital school (Coleman 1998) tends to see social relations (contacts, acquaintance, family connections etc) as durable resources at the disposal of its “owners”, which may effectively improve the outcome of their purposeful activities in society, while the social embeddedness school has no similar intention to convert social relations into measurable resources or economic benefits. Instead, the fundamental claim of social embeddedness school is that if the local actors behave in reciprocal ways and form up coherent social networks to facilitate joint-actions and knowledge-sharing, it must be the particular social structures that not only constrain, but also justify their behaviour of doing things in this way. I will expand this critical argument in the theory chapter.

2.4 Clusters and the Internet Networks

Waves of technology gurus envisioned that the Internet will finally tame the ‘tyranny of distance’ in the sense that organisations will be free to locate the ‘screen-based activities’ wherever they find the bargain of skills and productivity (Toffler 1980, Negroponte 1996, Cairncross 1997). Prophetic writings such as Friedman’s (2007) account of “the flat world” characterised contemporary global capitalism as the one of collaborative

and networked economy supported by digital networks where nation states (locations) become much less important than before. Academic research on the impacts of Internet on geographic change, however, exhibits mixed perspectives. For example, Moss argued that the “death of distance” discourse is based on three untested propositions (Moss 1999): a) that all information activities are more efficiently conducted electronically than face-to-face; b) that human beings place little or no value on the social and psychological attributes of the place, especially the office place; and c) that the physical settings in which work occurs is irrelevant, or even counterproductive, to the performance of individuals and organisations. All three propositions, of course, proved hardly reliable in real world cases.

Face-to-face communications, after all, still have high premium for office workers. In Internet era, for instance, the financial industries continue to be highly clustered in a few global cities, especially those traditional mega-cities in industrialised countries such as New York, London and Tokyo, which to a large extent is due to the global accessibility of ICT networks (Sassen 1994, Sassen 2001). The ICT and Internet companies themselves are densely located in the Silicon Valley, Boston, Seattle and New York of US, Bangalore of India or Hsinchu of Taiwan. For these intellectual or innovation-driven industries, there seems to be a great value in being in the right ‘place’, where the division of labour can be finely attuned to industrial needs, the mutual understandings and trust

between firms are easily achieved and the flow of specialised talent and the “buzz” produces indispensable input for the innovation process (Jaffe, Trajtenberg et al. 1993, Almeida and Kogut 1997, Audretsch and Thurik 2000, Leamer and Storper 2001).

Therefore, most scholars agreed that the development of communication (transportation) infrastructure -- of which Internet is a new generation -- leads to a ‘double effect’ on economic geography, permitting dispersions of certain economic activities while strengthening the clustering of other activities in regions. This view has its roots in the early days of spatial economics, when the German economist Johann Heinrich von Thünen (Von Thünen and Hall 1966) studied the impacts of railway networks on the change of economic geography of Germany during his lifetime: “...railway construction will...make an important contribution to the development of large towns...and...will promote also the prosperity of the rural districts surrounding the provincial towns, the latter would decay in consequence...”. Gottman (1977) similarly contended that the telephone networks lead to two directions of geographic change, letting some operations that have been historically located in proximate places disperse to separate locations, while the same infrastructure helped gather offices and headquarters in larger concentration in a few cities -- a 20th-Century’s version of von Thünen’s railway story.

Such view of “double effects” has been naturally assumed in the studies of Internet and geographic change (Graham and Marvin 1996, Sinai and Waldfogel 2003). Leamer and Storper (2001) argued that just as the previous round of communication infrastructure progress had a double effects on industrial agglomeration, permitting de-centralisation of certain activities while reinforcing other kinds of industrial clusters, the age of Internet will see similar changes with industrial concentration and de-concentration at the same time, only the varieties of industries concerned will be different, depending on their nature of business and relations with ICTs. Gaspar and Glaeser (1996) suggested that there are at least two categories of effects concerning the relations between face-to-face communication and ICT network communications, namely the contradictory category and the complementary category. In contradictory category of effects, given the technological capability, ICT networks may work perfectly as a substitute for face-to-face communications, making it less necessary for people to co-locate in the same place. In complementary category, relationships developed over ICT networks may well lead to an increased amount of face-to-face communications in physical settings, where the majority of socialisation process proceeds. Gaspar and Glaeser (1996) concluded that it is essential to weight contradictory effects against complementary effects in the analysing ICT network and its consequent geographic change. Neo-classical economists also assumed this “double effects” discourse and provided further specifications of general-equilibrium models on how to weight

forces of one category against the other -- the centrifugal and the centripetal (Fujita, Krugman et al. 1999, Quah 2001, Fujita and Thisse 2002, Karlsson, Mellander et al. 2005, Arbia, Espa et al. 2008).

A popular theory of Internet-enabled change argued that the Internet may give rise to three principle changes in those sectors of material production: increases in product variety, increases in the fineness of the division of labour (roundaboutness), and the automation of intermediation/coordination tasks (disintermediation) (Leamer and Storper 2001). Since the Internet makes it easier to trade commodity and service than the traditional channels of mediation, producing a greater variety of products to profit from the niches of customised demand becomes possible, technologically and economically. Such theory thus maintains that the greater variety of products, coupled with improved division of labour, may create a positive cycle in which those high-quality, design-driven, consumer-customised manufacturing may end up developing in greater geographic concentrations, while those highly-routinised, mass-scale production (service) will be further dispersed into lower-cost regions.

Information System and business strategy literature provide detailed evidence to illustrate the development of global production networks. What has been highlighted in this literature is the standardisation and modularisation process of organisational routines using enterprise

information systems. Research literature on Business Process Outsourcing (BPO) provides detailed illustration how such modularisation happens in terms of IT-enabled service and the carefully re-engineering of information processing tasks (Willcocks, Hindle et al. 2004).

Malecki (1991) suggest that Internet, in which modern enterprises information systems are embedded, is enabling the vertical disintegration of value chains which are increasingly becoming more like the assembly chains of standardised modules (Richard and Devinney 2005). Overseeing and coordinating a complex web of modular suppliers scattered around the globe, multinational corporations -- the global “orchestrators” -- are in a process of re-shuffling the locations of the manufacturing functions and business functions in order to improve the efficiency of the global resources (Dedrick, Kraemer et al. 2010). All these modularisation and orchestration trend of organisation change would have not happened without the digitalisation of the business process within and outside organisations (Kallinikos 2006). From this point of view, the digital economy is increasingly about the processing and coordination of the digital information that is generated in the process of modularisation within and between traditional material manufacturing industries (Kallinikos 2006).

What is missing in the IS and management literature was the focus on the ways the Internet networks, while making modularised operations

globally dispersed, may actually contribute to further concentration of economic activities in clusters. Some sociologists and scholars were among the earliest to notice such process (Castells 1996, Leyshon and Thrift 1997, Sassen 2001). Thrift's (1996) study on telecommunication networks and financial centres confirmed that the 'rise of telecommunication networks' may well have produced more socialisation between information workers, and much of it is based on face-to-face communications, leading to the greater importance of existing financial centres.

A few mega-cities with rich global connections are seeing a further concentration of companies whose main focus is the knowledge-intensive activities (R&D, branding and strategy-making, community-building etc) and orchestrating the global production networks. Geographers have rightfully suggested that although Internet can do much to facilitate the communication and coordination of distributed locations, it can hardly make the context-dependent information any less important. Especially for the innovation-driven industries, the "stickiness" of geographic place is largely due to the premium of place (or face-to-face) on the effectiveness of learning activities, that is, the sharing and spread of tacit knowledge (Storper 1997, Maskell 1998, Gertler 2003), the premium that current information and communication technology of Internet still has failed to match (Leamer and Storper 2001).

In other words, tacit knowledge, trust, and widely speaking, the institutional structures characterized by innovative milieux, remain quintessentially local despite of digital networks. It is probably because of this that the Internet age is witnessing a further concentration of talent and complex intellectual, and collaborative work in major regional innovation centres. Start-ups, R&D departments, and other local community support service are the majority population of location regional networks, maintaining close collaborative relations with a number of high-quality universities, financial institutions, and government in local areas. Leamer and Storper (2001) remarked that the Internet age will be “highly urban”, with the global cities and their periphery regions as the central nodes -- where most collective learning activities take place -- in the complex networks of modern globalised economy, especially those mega-cities of developing countries will be further concentrated by informational and highly-skilled workers, and acting as the inter-connecting platforms between the manufacturing sites and the globalised core areas in developed countries.

2.5 Online Sociality – the Logic of Social Media

Recent literature on Internet and communication highlights the central roles of social media platforms in organizing user’s ordinary social life. The concept of social media attempts to describe the new development of Internet business since early 2000s, which has been driven by new technologies and services such as web 2.0 and social networking.

Studies on the social media platforms show that new patterns of social behaviour – friending, liking, microblogging, following, tweeting and re-tweeting (RT), crowdsourcing, amateur-journalising – are emerging and co-evolving with new technological platforms.

As Van Dijck put it, “*sharing, friending, and liking are powerful ideological concepts whose impacts reach beyond Facebook...affecting the very fabric of sociality*” (Van Dijck 2013 : P66-67). Van Dijck and Poell (2013) championed such analysis of the Internet-enabled sociality by suggesting that social media platforms are giving rise to a new “social media logic” featuring a new set of “norms, strategies, mechanisms and economies” among users and platform owners. They highlighted four underlying principles as the hallmarks of change by connecting and interacting with social media: namely, programmability, popularity, connectivity, and datafication. By following Dijck and Poell’s (2013) four principles of “social media logic”, this section aims to characterise the emerging social logic facilitated by this new generation of Internet platforms that are penetrating into both online and offline social world.

Programmability

Unlike mass media, social media platforms are developing alternative ways of fabricating information content that are increasingly susceptible to users’ (consumers) own control and customization. Van Dijck and Poell (2013) suggested that the use of social media significantly

challenges the roles of program editors, whose centralised editorial power over mass population of readers/audience has been the essential feature of media industries since 19th century (newspapers, television, radio, magazine etc) (Altheide and Snow 1979, Fuchs 2009). Such challenges can be described as the rising logic of programmability.

Programmability means social media platforms are designed to allow users to control and personalise the informational content/flows produced and consumed through their online experience. Van Dijck and Poell (2013) defined programmability as *“the ability of a social media platform to trigger and steer users’ creative or communicative contributions, while users, through their interaction with these coded environments, may in turn influence the flow of communication and information activated by such a platform”* (p.5). With its roots from mass media terminology (“programmes”), programmability concept attempts to characterise the de-centralisation model of content production and distribution, in contrast to the mass media logic that audience’s experience is manipulated by the centralised control of content. Generally speaking, recent research literature indicated broadly three categories of social mechanisms that trigger and steer user agency on social media platforms: namely, user-generated-content (UGC), open data (APIs), and peer production.

UGC refers to the online social mechanisms in which users are encouraged to publicly share their own information or media content –

creative/moody tweets, pictures/video/audio, news pieces, articles, comments etc (Benkler 2006, Bruns 2008, Tapscott and Williams 2008, Van Dijck and Nieborg 2009). Web 2.0 platforms like Facebook, Youtube and Twitter are thriving on the networks of individual user's voluntary contribution and circulation of media contents and personal information, to the extent that the very definition of web 2.0 is critically depending on the availability of UGC functions.

UGC's social mechanisms include rules of controlling online traffic flows to ensure that certain behaviour of connecting, publicizing and sharing are encouraged and rewarded with even more preferable and personalised content and flows (Benkler 2006, Bruns 2008, Papacharissi 2009). Some of such rules are "programmed" in the algorithms of online software and hence are capable of automatically influencing online traffic flows without users or platform owners' manipulative intervention. For example, Social Network Sites (SNS) reward the behaviour of connecting with more friends and sharing information with them by suggesting much more precise candidates of "friends" with whom users are most likely to connect, in which case the algorithm of calculating the "likelihood of connection" becomes an important social mechanism of UGC.

Some mechanisms of UGC relate to human agency instead of algorithms. For example, knowing that the ways that platform distributes content through expandable social networks, users may tactically edit the content

that they share and publish, and use social networks as a strategic tool to manufacture and advertise a distinctive personal identity in the “virtual space” – in other words, self-branding in social networks represent an emerging behavioural type around which new norms, strategies and economies are taking shapes (Potts, Cunningham et al. 2008, Jarvis 2011).

The idea of open data and APIs (application programming interface) originates from platform’s strategic vision of building up an open and dynamic business ecosystem, where programmers, users, and third-party service providers are collaborating together on a common infrastructure (O’reilly 2007, Gillespie 2010). With the toolkits of open data and APIs, users and the third-party service providers are empowered to develop “add-on” service to extend the platform’s functionalities and user experience. For example, Facebook’s open data of “social graph” provide opportunities for external users and companies to exploit its social network data and develop new user experiences. Spotify, an online music stream service provider, provides unique user experience by combining Facebook’s social graph with its own music streaming service. Similarly, Twitter aims to be a “utility service provider” in the Internet age by opening its real-time data streams of “tweets” for the exploitation of other service providers to “re-package” the flows of tweets into their unique online user experiences.

These concerted efforts of openness in social media platforms, either as open data or open software programming interface, increasingly give rise to the social mechanisms – both mediated by computer codes and human agency – that have been characterised as convergence and connectedness (Jenkins 2006, Van Dijck 2013). Platforms are becoming increasingly inter-connected, exchanging data flows with other platforms, third-party service providers are developing innovation of mixing different sources of data and providing unique user experiences (mash-ups), users are also taking advantages of these inter-platform convergence efforts and coordinating their social life across different platforms. Back to programmability, the social mechanisms of open data and open APIs are giving rise to the logic of convergence, which further enhances decentralisation mechanisms of content production and distribution, and makes user's online experience increasingly personalised, convergent, complex and uncontrollable.

Peer production refers to the user agency that peer-to-peer voluntary contribution replaces market transactions and becomes the norm for the economic production of information content – some scholars prefer the term “crowdsourcing” to refer to similar phenomenon (Benkler 2006). Strictly speaking, the concept of peer production as a social mechanism of online collaboration exists before the advent of social media. Benkler's analysis of open source software and Wikipedia has outlined the

essential features of peer production without giving specific attention to social media platforms.

Popularity

Each social media platform has its own way of attracting “eyeballs”/clicks, programming content and manufacturing celebrities. The number of clicks and views on a web page, a personal profile page, or a website is directly linked to the quality and business value of social media content. Popularity, measured by the number of clicks and views, describes the principle that each social media platform has its internal logic of aggregating and manipulating online attention. In fact, measuring internet traffic has been an essential way of evaluating website’s business performance since early days of Internet business (Page, Brin et al. 1999, Glommen and Barrelet 2002). An expanding list of website traffic metrics such as page visits (PV), unique visit IP address (UV) have been developed and used by internet companies to measure the popularity of web pages (Berthon, Pitt et al. 1996, Choe 2003, Baym 2013). What distinguishes the new development of social media platforms is the increasing personalisation and sophistication of such measurement, to the extent that it becomes possible to measure social influence of an individual given the richness of data available on these platforms (Baym 2013).

Van Dijck and Poell (2013) suggested that the popularity logic of social media should be approached from two components: the algorithmic, and the socio-economic. The algorithmic component refers to the ways that the content of information are “interpreted” and “translated” by the platform technologies into other forms of information which are easily accessible by users or other platforms. Algorithms underlying Google’s PageRank, Facebook’s EdgeRank, and Twitter’s TrendingTopic all contain critical logic dictating the machines to automatically compute the content information and compile the metadata into new forms of information – a process described by Zuboff (1989) as in-formating – that conform to the established schemes of sense-making activities in platforms. A common tactic of these platforms’ sense-making schemes is to score and rank performance based on certain metadata metrics. Facebook’s “like” button, for instance, contains a specific set of metrics that measure popularity as a performance indicator of someone or something (brand, product, organization, campaign etc.).

Unsurprisingly, such algorithms are entangled with various user agency which aims to promote popularity on the platform – the socio-economic logic. It is during the dynamic interactions between these algorithms and user agency that the Facebook’s “like” button becomes a powerful social mechanism mobilising the growth of the “like-economies” (Gerlitz and Helmond 2013) both inside and outside Facebook’s platform. Similar tactics of measuring and ranking takes place in the case of Klout, an

online service designed to measure individual's social capital based on multiple sources of social media data, which finds its clients in advertising and public relations sectors. Klout proves to be particularly useful for promoting commercial, political or charity campaigns, by leveraging individual's social connections and online reputation. Hence, it is clear to see that these metrics and rank indicators become a constitutive element further shaping the social behaviour of users who are aware of these metrics and purposefully using these algorithm-based mechanisms to achieve personal gains.

The logic of measuring popularity has been increasingly associated with democratic and liberal ideals. As their metrics become increasingly sophisticated, social media platforms seek to establish political legitimacy to help these algorithm-mediated logic penetrate into the offline everyday life (Benkler 2006, Lessig 2008, Morozov 2012, Morozov 2013, Van Dijck 2013). Van Dijck and Poell (2013) noted that Twitter "stars" with high scores of popularity ranking may easily find their way into the systems of "manufacturing celebrities" in mass media, and vice-versa, journalists or celebrities may find Twitter's popularity ranking a powerful mechanism to reinforce – and perhaps, legitimize – their existing social influence. Such legitimizing efforts can be clearly seen in the social movements of "Arab Springs" and "Occupy the Wall Street" in which case the majority of the participants not only use social media to communicate and broadcast what is happening in real-time, but also purposefully use social media's

popularity logic to influence public opinions (Morozov 2012). Proponents argue that the popularity logic contained in the platform's algorithms (via buttons like liking, sharing, trending, recommending etc) helps articulate the true voice of the people and thereby constitutes the cornerstone of civil society in the Internet age (Lessig 1998, Reynolds 2007, Leadbeater 2009, Li and Bernoff 2011), while critics indicated that the social media's popularity logic only amplifies certain dimensions of the truth and fails to represent the full spectrum of the people's voice (Van Dijck 2009, Van Dijck and Nieborg 2009, Morozov 2012).

Connectivity

Connectivity describes the business nature of social media platforms. Simply speaking, the business of social media can be understood as to match users with preferable content, most likely, the advertising content that facilitate trade between buyers and sellers. Researchers noted that social media platforms, most of which are controlled and operated by corporate/financial institutions, have ambitions far beyond the vision of establishing widespread social connections (connectedness), since the service of facilitating connections itself -- connectedness -- may not generate revenues (Berthon, Pitt et al. 1996, boyd and Ellison 2007, Van Dijck 2009). To turn connectedness into a sustainable business, social media platforms must develop unique value propositions, meaning they must be able to sell something of market value to potential clients.

A common business model adopted by social media platforms is to treat individual user as potential consumer, and match users with the content (and product) they are most likely to consume (Bruns 2008, Grimmelmann 2008, Jarvis 2009). Such matching capability involves complex algorithmic mechanisms that are designed to: a) analyse and understand the consumer preference of each individual user based on data collected by the platform (or connected platforms) (Jenkins 2006, Jarvis 2009, Nissenbaum 2009); and b) customize the advertising content to target individual consumer at the right time and place (Petersen 2008, John 2012, Gerlitz and Helmond 2013). A list of “stuff you might be interested” shown on Amazon’s product profile pages or a product “liked by your Facebook friends” epitomises the process of how the metadata of connections can be exploited by algorithms for the purpose of mass customised advertising. The connectivity mechanisms become increasingly sophisticated as the platform accumulates detailed personal data and develops sophisticated algorithms to predict the taste of individual users (Haythornthwaite 2005, Jenkins 2006, Vukanovic 2009).

Under the implicit logic of connectivity, it becomes a real danger that individual users become less capable of telling which content are commercial ads and which is genuine sharing of social content. Van Dijck and Poell (2013) warned that “the boundaries between human connections and commercially and technologically steered activities are

increasingly obfuscated” (p9). In 2012, the tweets of Wayne Rooney, a famous English soccer, sparked widespread public anger as it becomes difficult to distinguish the content of his tweets from commercial ads. Such confusion significantly erodes the established trust among users, and between users and platforms, as individuals suspect that their social space (and privacy) has been under massive invasion by commercial interests (Solove 2004, Nissenbaum 2009, Van Dijck 2009, Mansell 2012). Hence, the connectivity feature inevitably clashes with the established user agency on social media. As users become sensitive about the ways their personal data have been handled by platforms, privacy and data governance concerns significantly undermine their positive experience of connecting and interacting with others on Internet (Mansell 2012). This critical tension has been characterised as the strategic dilemma between connectivity vs. connectedness for business models of social media (Van Dijck 2013).

Datafication

Datafication refers to the platform’s automatic, algorithm-based process to render different aspects of the world into computable data, which are treated as “raw materials” to feed the socio-technical process of manufacturing meanings for multiple interpretive purposes. Datafication is not only about mirroring reality into binary digits, but also about generating extra data that records the detailed and trivial properties of the original content mirroring that reality (metadata) (Kallinikos 2009,

Kallinikos and Mariátegui 2011, Leonardi and Kallinikos 2012). For example, Facebook's datafication process involves not only the rendition of various aspects of social interactions – chats, sharing of articles, video, audio/music, personal profile, network connections – into computable raw data (content), but also the rendition of the properties of these content into metadata, which provides detailed, trivial and non-content information about what is happening at the particular time and space, and how it has happened (i.e. the time and length of call session, IP address, DNS servers, communication protocols, software & operating systems, geographic locations, telecommunication operator, phone or camera manufacturers).

Van Dijck and Poell (2013) contend that what makes datafication a crucial character of social media logic is its ability to add a real-time data dimension to the notion of "liveness", which is a familiar concept from mass media like television and radio. The generally-assumed justification for such datafication principle of social media platforms is that by tracking the real-time behaviour of users, aggregating and analysing them, and subsequently translating them into certain formats of results, it becomes possible for users and platform owners (and external partners) to attribute their interpreted meanings upon such processed and formatted data results, for example status of public mood or individual user's consuming taste (Baym 2013, Bechmann 2013). Actually, procedures of datafication often serve as the underlying infrastructure of social media

platforms, upon which other principles, especially popularity and connectivity, are largely based (Van Dijck 2013).

An essential feature of this ongoing datafication process is the exponential growth of data and metadata that becomes available for exploitation on networked platforms (Kallinikos 2007, Kallinikos 2009, Kallinikos, Aaltonen et al. 2010). As the trivial aspects of the world are converted into computable data and metadata, human operations are increasingly mediated by the process of manipulating these data and feeding them into the sense-making activities of everyday life. Then the daily operation of manipulating, interpreting and performing on data materials itself becomes the source where even more data and metadata are generated – this is what Jannis Kallinikos (2007) referred as the self-referentiality of information growth in digital platforms.

So what critically differentiates datafication from digitalization is that datafication not only constitutes the representation of reality that human actors can see and understand, more importantly, it changes the cognitive frameworks which human actors use to make sense of the reality. Kallinikos and Tempini (2012) noted that rise of digital information habitat is the environment where “contingencies, problems or situations are increasingly framed in terms of data availability and technologically based operations of algorithmic reasoning and statistical data crunching”. As the boundary between the reality and the data representing such

reality is increasingly blurred, question has been raised to pursue how datafication, more than mirroring the reality, recursively shapes the ways reality is perceived, interpreted, and enacted (Kallinikos, Hasselbladh et al. 2013).

3. On Embeddedness Theory

This chapter proposes a theoretical perspective of hybrid sociality based on Granovetter's embeddedness theory. The first section traces the origins of the embeddedness concept in literature, and attempts to clarify what it means by "being embedded" in context. The second section discusses various interpretations of "embeddedness" in internet-age, examining how the old spatial logic is challenged by alternative meanings of embeddedness in the Internet networks. The final section proposes a perspective of social embeddedness defined as the hybrid sociality.

3.1 The Origins of Embeddedness Theory

The view that economic actors are embedded within social structure constitutes the core belief of economic sociology. Most literature on 'embeddedness' theory, be it in the disciplines of sociology, geography or organisational studies, have unfailingly paid tribute to two scholars for their contribution to this concept: Karl Polanyi (1957) and Mark Granovetter (1985). In Polanyi's work - *The Great Transformation*, 'embeddedness' concept is crystallised to denote that the economy is always enmeshed with institutions, economic and non-economic. In a critique of the formalisation trend of economics during his time - which tends to treat market as the only point of reference for explaining economic phenomena - Polanyi maintained that the economy should be

understood from its '*substantive*' nature ('*substantive economics*', as opposed to the '*formal economics*'), meaning that economic activities, including market transactions, are always institutionally embedded in societies. By explicating the embeddedness concept, Polanyi maintained that modern capitalist economies present a major transformation in terms of the relations between economy and society, as the embedding and dis-embedding processes are occurring on both directions, in a way that not only are economies embedded in societies as the pre-modern economies did, but also "modern social relations are increasingly embedded in economic systems".

Granovetter (1985) offered a different, however quite related, account of embeddedness theory. By shifting the analytical focus away from macro economic/institutional structures to the networks of personal relations, Granovetter's work, especially his seminal paper published in *American Journal of Sociology* in 1985, paves the way to make the concept analysable in micro level. Focusing on the dyadic personal relations and the network structure of social relations, Granovetter demonstrated the way that 'being embedded' within relational networks shapes economic actor's behaviour, particularly generating trust and discouraging malfeasance. Granovetter's theory contributes to the understanding of social embeddedness in the way that social structure - in the form of social relation networks - as situational and contingent surroundings shape the behaviour of actors, instead of dictating one's behaviour as

those atomised accounts of neoclassical theories and the over-socialised structuralists tend to suggest. Following this logic, Uzzi (1996; 1997), in an attempt to make the embeddedness theory comparable to neoclassic theories in terms of explaining capacity, developed a number of schemes that capture the features and functions of embedded relations. For instance, Uzzi's study of New York apparel industry showed that the embedded relationship of industrial networks can be approached from at least three social mechanisms: trust, transfer of fine-grained information (public/private information), and joint problem solving arrangement. Uzzi's work on the dynamics of organisational networks (1996) showed that inter-firm embedded relations are operating in a logic of exchange (as opposed to market-based logic of arms-length transaction), which facilitates the activities of resourcing pooling, cooperation and coordinated adaptation.

Following Granovetter and Uzzi's call for studying embedded relations, various benefits have been identified to explain why and how embedded relations matter in economic activities. Trust, as the most important embedded relations, help reduce the uncertainty and transaction cost, whose roles can never be fulfilled by price signals or contractual relations (Coleman 1988, Grabher 1993). Social identity, which in many ways can be taken as a cultural institution, enriches the content of embedded relations by adding value and meaning to the economic transactions (Portes and Sensenbrenner 1993). Uzzi (1997), Larson (1992) and

Helper (1990) suggested that the embedded relations are responsible for the sharing of ‘thick information’ between individuals and firms, by providing the key channels for spreading strategic information and tacit knowledge (know-how). Organisation theorists suggested that firms embedded within networks are capable of accessing capabilities of collaboration and coordination, which may lead to better economic performance (Podolny and Page 1998, DiMaggio 2001, Powell 2003). Based upon Uzzi’s embeddedness theory, Fowler et al. suggested that the embedded ties of the Internet network can be approached from three components: transparency, wide-spread sharing, and community-based solving (see Table 3-1).

Transaction Problems	Under-Socialized Theory	Over-Socialized Theory	Embeddedness Theory	Virtually Embedded
Opportunism	Cost/Benefit Ratio (market)	Institutional Structures (affiliations, identity, hierarchies etc.)	Trust	Transparency
Uncertainty	Search Cost (market)	Power Fiat (Hierarchy)	Fine-grained Information Sharing	Wide-spread sharing
Complexity	Coordination Cost (market)	Power Fiat (Hierarchy)	Joint-Problem Solving	Community-based solving

Table 3-1 A summary of embeddedness theory in addressing economic exchange problems

But what do we mean by saying ‘economic actors are socially embedded’?

According to Uzzi (1996), embeddedness refers to “*the process by which*

social relations shape economic action in ways that some mainstream economic schemes overlook or mis-specify when they assume that social ties affect economic behaviour only minimally or, in some stringent accounts, reduce the efficiency of the price systems". To a certain extent, the ambition of the embeddedness research initiated by Granovetter and Uzzi targets the fundamental logic of economic activities and economics: what motivates individual and firm's economic behaviour and sustains the collaborative relations? The answer from this line of argument is the network logic, which Uzzi (1996) clarified as the following:

"..the logic is unique in that actors do not selfishly pursue immediate gains, but concentrate on cultivating long-term cooperative relationships that have both individual and collective benefits for learning, risking-sharing, investment, and speeding products to market...these actions and motivations are...due to...the emergent properties of concrete network relationships...issues of how social relations promote thick information exchange, rapid and heuristic decision-making, and the search for positive-sum outcomes take the fore..."

In some way what Granovetter and Uzzi referred as the network logic seems to encourage a research direction that emphasises the structural properties of network, mapping out the relational structures formed by actors and discerning the patterns of how the "position" and "density of ties" dictates the distribution of socio-economic benefits (Burt 1980,

Baker 1981, Baker and Faulkner 1993, Podolny 1993, Gulati and Gargiulo 1999). For example, Baker's (1981) work is mainly concerned with finding the actors that share the same patterns of relational structure and seeing whether their access to resources are determined by such identical structures -- the "*structural equivalence*". Based on Baker's theory, Burt (1980) idealised market as a network of "structural equivalent" actors who are all sharing identical structure of ties with suppliers and consumers, and defined those industries that ensure low competition with one another while simultaneously ensuring high competition among suppliers and consumers as the "*structural autonomy*". The structural autonomy industries, according to Burt's study, have more advantageous competitive position than other industries in market. Burt's later work developed the concept of "*structural holes*" (Burt 1995), which refers to the separation of actors which in no way can be connected by direct or indirect ties (*non-redundant ties*). The structure holes theory suggests that actors that can 'bridge the gap' (*cohesion*) enjoy substantial competitive advantages over other actors, in some cases, they maybe be able to exercise control over other actors.

However, just as these burgeoning network theories gained increasing popularity in 'embeddedness' literature, so are the critics and doubts on their suitability for understanding the 'substantive economies' in social context. Kripnner (2002) argued that these network theorists' efforts to 'embed' market in social structure "involves such a high level of

abstraction that paradoxically, the social content is distilled away from the market construct". And what is more, their work "*bears an ironic resemblance not only to the neoclassical economics, but also to Parson's attempt to put sociology on the same footing as economics*". Powell and Smith-Doerr (1994) similarly noted the irony of these structural theories by arguing that the attempt to deal with *relations* between actors rather than *properties* of actors in a magic way turns out to be that such relations (positions in network) becomes the properties of actors. Fligstein (1996, 2002) suggested that actually the lack of 'content' in these network theories undermined their capability of explaining economic behaviour in real-world contexts, because these theorists seldom have the consensus of what kinds of relations they are talking about when they index the relations and map out the network structures, never to mention the fact that the key aspects of politics and cultures in economic life are missing in these ties.

It is important to note that neither Granovetter's nor Uzzi's work directly suggests that the network logic can only be approached by network structural theories. On the contrary, an in-depth interpretation of Granovetter's work leads to the view the embeddedness research is constantly about "the contextualisation of economic activities in social structures" (Dacin, Ventresca et al. 1999), or in Hirsch's metaphor, embeddedness research is about to *get the hands dirty* rather than get a clean model (Hirsch, Michaels et al. 1990). Advancing even further,

Zukin and DiMaggio (1990) developed a classification scheme of embeddedness in an ambitious attempt to reboot the studies of economic sociology by integrating the macro political economy analysis (capital control, social class structure etc.) with the meso-level economic organisation analysis (firm, market and network). Such scheme suggests that the embeddedness of actions and motivations are subject to the contingent nature of socio-economic environment comprised of four categories, namely the embeddedness of cognitive, cultural, structure and political institutions. This classification scheme, while being criticised as 'arbitrary', 'fuzzy' and 'inconsistent' categorisation (Halinen and Toernroos 1998, Hess 2004), offers a clear departure from the narrow structural view of embedded relations.

The view that embedded relations are not only conditioned by relational network structures, but also by cultural institutions in broader sense bears critical resemblance to the original contribution in Polanyi's notion of 'embeddedness in society'. Cognitive embeddedness refers to the impacts of symbolic representations or frameworks of meanings on individual's interpretation of the world. These symbolic representations and frameworks of meanings, as historically constructed social reality, form the cognitive restraints which may deviate economic actor's behaviour from the "standard rationality" assumed by neoclassic economics (Weber, Roth et al. 1968, Zukin and DiMaggio 1990). Cultural embeddedness, in a narrow sense, refers to the fact that economic

actors' behaviour are constantly shaped by the shared understandings, beliefs and values, which contribute to the common identity and 'sense of belonging' of a society. Political embeddedness concerns the way that power are distributed and exercised --via social institutions such as taxation, legal and justice system, regulatory regimes and class politics -- shapes the 'rational' behaviour of economic actors in society.

Zukin and DiMaggio's classification suggests that there is a complex web of social, political, cultural and cognitive factors at work in societies that are responsible for the content of embedded relations, as the institutional power networks, meaning systems, mental models, political ideologies and moral sentiments or cultural judgements are just presenting themselves as social reality imposing meaning and values on the content of these ties linking among actors and between actors and institutions. Following this way of thinking, Dacin et al (1999) reviewed the 'embeddedness' related research in organisational and strategy literature based on Zukin and DiMaggio's classification, and found that there has been a large number of research literature focusing on multiple levels of context including organisations, regions or nations that can be interpreted as 'embeddedness' research by discovering embeddedness relations formed through the four mechanisms (structural, political, cultural and cognitive).

Indeed, the categorisation efforts suggested by Zukin and DiMaggio are analytically useful in a way that they break down the notion of 'embeddedness' into a complex, dynamic web of social factors characterising the context. However, it simply presents a greater analytical challenge for researchers, because to argue that economic actors are simultaneously embedded in structural, cultural, cognitive and political circumstances does nothing more than to claim the well-established view that economic actors are contingent upon social context -- *a hopeless regression to the contingency theory that have been extensively applied in organization* (Hess 2004).

Hess (2004) commented that the four categories provide very fuzzy concepts as these categories contain overlapping meanings and in many cases they are describing the same phenomenon. Not to mention the fact that there is a high degree of interdependent relations between these four mechanisms to the extent that breaking down the concept and analysing them separately proves risky of missing the key point. For example, the cultural embeddedness and cognitive embeddedness are, in most cases, referring to the same phenomenon that individuals, or firms, are subject to the interpretation of meaning - symbolic - systems historically constructed in societies, either in the level of national context or in the meso-level of regions or the micro-level of organisations. Power relations, as the most important elements of embedded relations between actors and institutions, are mostly working in the way that

institutions are capable of influencing the ongoing process of the meaning (symbolic) systems construction out of which the logic of individual's or firm's rational action can make sense (Foucault and Gordon 1980, Latour 2005). Hence, to explicate these categorical forces in a consistent theoretical framework of embeddedness requires a clear account of what the context is.

	What?	In what?	Geographic Scale
Polanyi's <i>Great Transformation</i>	the economic systems of exchange'	Society', societal and cultural structures	No particular scale, but emphasis on the national state
Business System Approach	Firms	Institutional and regulatory frameworks	Nation state, 'home territory'
New Economic Sociology	Economic behavior, individuals and firms	Networks of ongoing (interpersonal) relations	No particular scale
Organization and business studies	Firms, Networks	Time, space, social structures, markets, technological systems, political systems	No particular scale
Economic Geography	Firms	Networks, and Institutional settings	Local/Regional

Source: Hess (2004)

Table 3-2 Who is Embedded in What? A Review of Perspectives

In fact, the quest to discover what (and how) the individuals and firms are actually embedded within has generated multiple meanings and interpretations on network embeddedness across different social science disciplines. Hess (2004), in a review of embeddedness perspective, tabulated at least five schools of interpretations on “who is embedded in what” (Table 3-2). This review suggests that while embeddedness theory originates from a high level of abstraction concerning relations between economies and societies, the application of this concept across different disciplinary contexts involves quite different understandings of embedded relations. Sociologists and political economists implicitly assume that the logic of economic exchange and reciprocity are subject to the relations between economic systems such as market and the broader institutional structures such as government policies and legal systems. Organisational and management studies tends to believe that firms are operating in a network of transactional and collaborative relations, which form the social structures conditioned by local and national institutional/cultural environment. Economic geographers, in an effort to construct a ‘spatial logic’ of economic activities, maintained that economic individuals and firms, and the complex social relations flowing among them, are spatially embedded in a common regional milieu (Camagni 1991), a spatial institutional complex that facilitates a high degree of trust, thick information/knowledge exchange, and joint-efforts of problem-solving.

It becomes no surprise that alternative categorisation schemes have been proposed in various literatures of geography or business studies. Hess (2004) suggested that 'embeddedness' should be approached from three dimensions concerning the *sources* of -- rather than the mechanism approach adopted by Zukin and DiMaggio (1990) and Dacin et al. (1999) -- of embedded relations: namely, societal embeddedness, network embeddedness, and territorial embeddedness. Societal embeddedness category highlights the factors of economic actor's societal background, such as ethic/national culture, value systems, political structures and mental models. Hess used the metaphor of 'genetic code' to describe the properties of embedded relations that fall in societal category. Network embeddedness, literally, describes the network structure of inter-personal or inter-organisational relations, including not only the structure of relations, but also the durability (temporality), strength and content of these relations. In context of regional development or business networks, network embeddedness represents the central meaning of embeddedness, which describes the process of trust-building between network actors. Territorial embeddedness refers to those factors of embedded relations that are 'anchored' in geographic place. The institutional endowment of a regional context may be the prime source of such embeddedness.

Generally speaking, these categorisation efforts based on the sources of embeddedness confirms a historical divide of theorisation efforts

between relational embeddedness and institutional embeddedness in research literature. The view of relational embeddedness, as pioneered by Granovetter and Uzzi, focuses on the relational structures -- the networks, explains the behaviour of economic actors based on their trust-building process through networks of relation. The view of institutional embeddedness, bearing resemblance to Polanyi's work, concerns the way that economic actors, by living in the iron cage of existing institutional environment, not only manage to collaborate with each other and create values within the boundary of institutional rules, but also constitute the on-going construction process of institutional structures. The institutional embeddedness concerns both macro-level relations between societies (culture, politics etc.) and actors, and the micro-level relations between actors and actors (or organisations). Uzzi (1996), after his theorisation efforts of relational embeddedness, admitted that more research should be conducted to shed light on the broader institutional structures that accommodate what he termed as "embedded exchange systems" in post-modern societies, in which he called for a Weberian approach to study the epochal return to "communal exchange systems".

Some scholars attempted to compromise the divide by including both macro institutional structures and micro relational embeddedness into a consistent theoretical model. For instance, Jahanisson et al (2002), in their dealing with embeddedness of firms in regional context, proposed a stratification framework based on the assumptions that actors are

simultaneously embedded in relational network (structural embeddedness) and institutional network (institutional embeddedness). Their framework is comprised of three levels of analysis, inter-firm networking (first order), firm/institution network (second order), and holistic networking (indirection connections, the third order). These researches represent the efforts to capture the content of embedded relations while keeping the structural views in place.

However, in the following section (as well as research methodology chapter), I will argue that such conceptual divide can be unnecessary for understanding the embeddedness of actors, because institutional forces are not working on individuals apart from social relations, but instead are heavily mediated by the networks of social relations. I will specify this point in detail in the section of macro-micro relations (methodology chapter) and the section of hybrid sociality.

To summarise, although there is a plethora of interpretations and categorisations on the 'embeddedness' nature of economic actors in context, a general recognition can be identified: embeddedness theory is about establishing the logical links between economic activities and the social relations connecting individuals (organisations) and cultural institutions. Instead of assuming that economic actors are behaving according to a standard rationality, embeddedness theory adopts network logic as the major mechanism of explanation. While there is divide of

methodological approaches to uncover such 'network logic', between the network structuralists and those theorists assuming greater importance of the content of relations, they generally agree upon the outcomes of such network logic, which is, a high degree of trust among actors, long-term collaborative relations, joint efforts for learning and sharing knowledge and thick information, sharing risks for innovation etc. These 'embeddedness' theorisation efforts, in a joint-force with the study of network as alternative organisational arrangement, provide new theoretical foundations for several research areas, including organisational studies, industrial districts and regional entrepreneurship. In the next section, I will explore the study of 'embeddedness' in a new context -- the regional development in internet age, explicating what embedded relations mean for actors in both regional and internet context.

3.2 Embeddedness in Cyberspace?

As I mentioned in Chapter 2, studies on Internet and geographic change have been characterised by the dichotomy of "the death of distance" arguments and the "geography still matter" arguments. What is commonly assumed among these arguments is that they tend to juxtapose technology with social practice as two clearly separated domains. The "death of distance" arguments highlight the advancement of technological functions into domains of social practice which may render certain existing human activities unnecessary (at least, functionally speaking), while the "geography still matter" camp attacked

such views by arguing that technological enhancements are either highly unreliable or insufficient as replacement of the original non-technological means (for instance, the internet-based communication vis-à-vis face-to-face communication), or are themselves subject to the shaping forces of cultural institutions *in situ*.

The “geography still matters” camp may go as far as claiming that territorial institutional establishment cannot be bypassed by new technological means because the use of these technologies remains in the domain of social practice, and therefore, are deeply embedded in local context. In short, both ends of the arguments tend to rest on the assumption that the technology domains (which is highly standardised, linearly logical and mechanic) and the social practice domain (which is cultural, chaotic and non-deterministic) are at large in rivalry positions – the expansion of one end is at the cost of the other (Marton 2009, Kallinikos 2011).

In this section, I argue that technology and social practice are not separate domains in terms of governing actor’s social behaviour, but rather are intertwined with each other to jointly shaping actor’s (user’s) socio-economic rationality. I will first examine those theorising efforts that attempt to moderate between the two extremes of spectrum – “the death of distance” arguments and the “geography still matter” arguments, and thereby show how such efforts have failed to gain empirical grounds as a

result of seeing technology as a separate domain from social practice. I will then go on to argue that Internet technologies should be seen as more than the machines of maximising means-ends efficiency or alternatively as the result of cultural shaping by local institutional forces, but as the emerging regulatory regimes that are governing individual's behavioural agency. Based on these insights, I will then outline the framework of embeddedness in the internet context.

From the Space of Place to the Space of Flows

In the seminal book of "Network Society", Castells (1996, 2003) developed a framework of understanding the impact of internet on social change that avoids both the technology deterministic view of social change and the over-situated view of seeing internet technology as nothing but the negotiable result and agent of powerful social institutions. Instead he attempts to moderate between the two opposite views by integrating the technological features and social forces in a consistent framework.

The space of flows logic he developed under this framework is abstractly defined as the 'material organisation of time-sharing social practice that work through flows'. The space of flows can be understood as the composition of three elements: 1) the place where the activities are located; 2) the material communication networks linking these activities; 3) the content and geometry of the information that perform the activities in terms of function and meaning. Castells suggests that the space of

flows constitutes the spatial logic of Internet-enabled network society, while the old spatial logic is purely based on geographic contiguity of practice, embedding most social relations, cultural meanings and economic factors in places. Under this framework, it becomes possible to see the organizing order of social activities that are simultaneously fabricated under geographic and ICT-enabled network structures.

Castells' work provide abundant examples to illustrate how network enterprises have their operational components globally distributed and synchronously collaborated with each other, and how this trend is necessarily linked to a bricolage, networked lifestyle, the reshuffling of sub-cultures and social groups across geographic places.

The space of flows is a good theoretical imagination because it strives to achieve a balanced and integrated view between territorial embeddedness and the emerging 'embeddedness' of technological networks (some refer as the virtual embeddedness). However, critique indicates that the logic may well describe a macro level pattern of what is happening in the spatial distribution of activities in the Internet age, but fails to recognise the diversity and richness of context in the complex process of shaping local social life with technologies (Fisher and Downey 2006). In other words, despite the fact that network becomes a dominant social structure in terms of both the macro level of linking "places" and the micro level of linking individuals and firms, such network logic does

not provide details to appreciate the complex process of enrolling technologies into the local contingent fabric of human and institutional actors.

To be fair, Castells' work actually paid substantial attention to the local context and local contingency in his network society thesis. However, I believe the reason his critique still holds valid is that his theory only managed to recognize the impact of technological networks on macro levels – on the structural change of socio-economic institutions around the globe and how the industries of information technology are coupled with such structural change. There is a lack of detailed attention to how the technology – and the logic it carries – gets enrolled into local social practice and becomes part of the change process in local contingencies. The space of flows logic tends to imply a division of conceptual domains between the macro and the micro, in the sense that the internet is only shaping and being shaped by the macro level structure (the geometry of flows connecting places), while the local contextual diversity only influences the human activities in the micro level. Although such way of theorising conveniently avoids the deterministic view of technology and the over-situated view of geographically-bounded social institutions, the theory is struggling to gain substantial empirical support exactly because of its lack of attention to the practice of involving technologies into social practice.

Recent study on the relationship between material space and cyberspace indicates some promising directions on the way social life have been constructed by the use of technology. For instance, scholars like Graham and Marvin (1996) have critically reviewed the concept of cyberspace by indicating that instead of being constructed purely out of technological engineering, cyberspace is predominantly a social and metropolitan phenomenon, which is “growing out of the old cities”. Similarly, William Mitchell used the notion of ‘recombinant architecture’ to demonstrate how the material spaces are now being infused with cyberspace ‘entry points’ of all kinds (Mitchell 2002).

Such stream of arguments have strongly suggested that the material space and the electronic space are not parallels for actors to choose and switch in-between, but are continuously intersected and co-produced together – what Stephen Graham (1998) called this complex local social construction process the ‘recursive interaction’. Under such vision, individual actors and institutions increasingly become embodied through its presence in both material space and electronic spaces.

Such view of “recombinant architecture” is an important direction of theorizing “embeddedness” in the age of Internet². The central tenet of this direction of theorising is that cyberspace is not separated space

² By using “recombinant architecture”, I have no intention to imply the regulative structures of internet take the form of the architectural rules, which has been claimed by scholars like Lawrence Lessig and William Mitchel. The regulative regimes of the internet may be seen as an instance of software rules, but I’ll argue that the Internet network has its own unique features of regulation, which is not necessarily a feature of software.

where economic actors are free from geographic constraint, neither is it true that global network society is simply a re-shuffle of geography under the guidance of a new “supreme order” (as the space of flows logic seem to suggest).

Instead, the mundane everyday social life of local actors are constantly subject to the institutional shaping forces mediated by the ICT networks, where the embeddedness of economic actors are constructed by networks of social relations of heterogeneous nature – relations that are both local and global, both face-to-face cultured and technology cultured. It is only through the transformation of local social life embedded in complex networks of heterogeneous actors that the macro structural change can be seen and understood. Any attempt to understand the local social life by assuming a priori structural change – such as the global ICT networks – may easily ignore the actual process of how technology get enrolled in the complex picture of local practices³. Let me specify this important direction of theorizing here.

Internet as Regulative Regimes

To specify the theory of “embeddedness” in recombinant architecture, one need to debunk the myth that internet is another space, and trespass the boundary between domains of technology and social practice, and to

³ In Mark Granovetter’s embeddedness language, such ways of assuming the existence of macro structures a priori which dictates the “script” of behaviour in micro situations can be referred as the “over-socialised” account of social theory, and have limited capacity of explaining what is really happening in context.

see what is actually taking place within the technology and how these internal mechanisms of technology have impacts on social practice. In his critique of the situated perspectives of technology, Jannis Kallinikos (2011) suggested that the situated perspectives may have overwhelmed the analysis of technology (use) with cultural/institutional forces and overlooked the core identity of technology as concrete material artefacts. He asked: “*are there any core properties that define the identity of particular artefacts and systems or are technologies just a random bundle of characteristics easy to reshuffle at will and negotiate?*” (Kallinikos 2010: 19). In other words, if there is such thing of technology that cannot be reduced to historical negotiations of social institutions, then what is such thing and how does it matter for social practice?

In this respect, legal scholars developed some interesting insights in attempts to theorize software codes as alternative forms of governance in parallel with laws and socio-economic norms, such as Lawrence Lessig’s (1998, 1999, 2003) “*code is law*” argument and James Grimmelman’s (2005) “*software is automated, immediate, and plastic rule*” arguments. While these strands of development made substantial contribution of the understandings of technology as regulative regimes, they also tend to trace the salient features of software’s regulative power into the “material” beings of software and codes. In other words, these studies tend to assume that the reason software and codes have enormous power over human actors is because of “what it is” or “what it

is made of”⁴. There has been a lack of focus on “what software and codes actually do”, and how the power of technology can be derived from “the things they do”. So the critical question that needs to be answered is: what does software actually do to regulate? And how does such process of doing things derive regulative power over social actions?

To start with, it is a fundamental fact that the information technology collects, processes and generates information. Then the question is: how does the ways the technology collects, processes and generates information have impacts on the regulative structures of human behaviour? Legal scholars have failed to face this critical question. Kallinikos (2011) outlined some instrumental concepts in attempts to answer this difficult, yet fundamental question.

Drawn upon Luhmann (1995), He suggested that technology governs social practice in two inseparable ways: namely, the *functionalities and procedures*, and the less obvious *generic forms of regulating* social relations. The fact that the specific *functionalities and procedures* have influences on social practices may be obvious to see when the social context where the technology is implemented has to make necessary change of social relations to accommodate the relations implicated in functionalities and procedures. While it is true that very often the functionalities and procedures evolve along with contextual social forces,

⁴ This point can be vividly illustrated by Lessig’s (1998) article “The New Chicago School”, which proposes to see “software and codes” as the “architectural” mode of regulation.

it is equally important to recognize that these contextual forces are subject to the regulative power of functionalities and procedures⁵.

The generic forms of regulative social relations are elusive and often being hidden by metaphorical languages and terminology in daily life, although they may play more important roles in shaping the institutional environment of social practice. The generic forms refer to the basic forms of interaction through which technologies have been involved in daily practice, which indicates the mundane, granular elements of social engagement with or through technology. Kallinikos (2011) suggested that the generic forms of regulation inscribed in technology make up the “mosaic facet” of everyday life, whose nature is difficult to approach (page 21).

This “mosaic facet” of everyday socio-technical interactions contains the critical part of technology’s regulative power over social practice. Kallinikos (2011) listed two main generic forms through which technology regulate the social relations – functional simplification/closure, and the objectification/automation. Functional simplification/closure means technology’s internal process of taking certain “tasks” out of its original context by reconstructing these “tasks” with simplified causal relations (“*if a then b*”) so that these tasks can be functionally “sealed” from outside environment – closure. At same time, technology regulates social

⁵ For example, functionalities and procedures of technology have been widely observed to link with rise of the new skills (or deskilling), and the associated professions which eventually evolve into institutional forces.

relations by automating the task procedures and assigning symbolic objects to give reference to how the tasks procedures have been conducted, as well as to provide means for human actors to interpret and intervene into technology's internal procedures. Objectification becomes important process of regulating social practice because human actors are increasingly required to correctly "read" and "respond to" technological objects as part of their professional skills/duties/routines⁶.

The reason I explained Kallinikos' theory of technology governance in such great details is that it provides a unique theoretical lens to see how individual's agency can be shaped by internet technologies, in the sense that technology itself becomes a process of institutional control – rather than as the instrumental means of institutional control. As the social embeddedness of geographic context seem to be well supported by established sociological theories, it is particularly difficult to understand how individual's behaviour can be conditioned by institutional environment which is not geographically located. How particularly does the Internet provide the generic forms of regulating social relations? How does the Internet's functional simplification/closure and objectification/automation process become the constitutive elements of regulative forces in everyday life? To answer these questions, it is

⁶ Kallinikos' (2010) detailed analysis of how the implementation of ERP systems have changed the nature of work in a Swedish diary factory demonstrate clearly that the information involved the work procedures have been transformed by ERP systems from the description (reference) of the work procedures to the objects of work procedure itself. This means that the technology has substantial regulative power over social practice by completely re-constituting the job skills, which essentially becomes a technology-mediated cognitive process.

important to see how internet technology becomes the sources of interpretive meanings whose significance serves to justify particular kinds of behaviour agency.

Internet as Network of Meanings

Internet is essentially a medium for symbolic interaction. It works to manufacture symbols with programmed meanings and expects users to interpret these symbols and respond with appropriate social actions. Take Facebook for example. To get into Facebook site, one has to go through the following steps: first, open a software called internet browser (which is a package of codes capable of communicating with other internet machines in a common language called WorldWideWeb), find the “address bar” by navigating the “mouse” or hitting “hot-keys”, type in “universal resource locator” of facebook (URL, the code word for web address) and hit “enter”, find the electronic forms titled “login”, type in username and password⁷, and enter a “site of social networks” where anyone (or anything) can be referred as a “friend”.

These procedures may sound trivial and mundane – nothing special because every user takes it for granted. However, what makes this particular social practice interesting is that it invites human actors to be part of a hermeneutic cycle – human actors constantly receive symbols

⁷ Facebook nowadays framed login as the “identity” token, similarly, Apple’s iCloud framed it as the “key chains”. Both framings aim to suggest that username and password are tokens of personal identity, which can be used for a wide range of online authentication procedures.

delivered through digital objects⁸, which are manufactured by complex of computing machines, instantly interpret the meanings carried by these digital tokens, and take appropriate response based on their understandings of the situation.

If we switch the perspective from human actor to computing machines, similar stories can be told – computer as a system of technological procedures constantly receive meaningful input from human actor, decode the meanings of human intervention by following pre-determined sets of casual routines (including “talking” to networks of computing machines), and then respond to human actor based on the meaning they understand and the protocols they are programmed to follow. In the same way as technology has been shaped by institutions of the social world, human actors are equally subject to the regulative power of technological governance – for example, human actors are required to develop the skills of understanding and manipulating digital objects, to produce the required information whose format can be processed by computing machines, to be able to constantly read and respond to the information tokens manufactured by the computing machines. From this point of view, it is safe to argue for the case that human actors become a part of the hermeneutic networks of machines. To borrow the terms from Jnnis Kallinikos (1989), users become part of the “web of signification”.

⁸ By using the term “digital objects”, I only refer to the symbolic tokens that are made possible by digital technologies. I have no intion to join the debates of social materiality, or what kinds of materiality that digital objects should be categorized into. Details see Kallinikos, J., A. Aaltonen and A. Marton (2010). "A theory of digital objects." *First Monday* **15**(6).

In the same way as technology has been used by human actor as means to achieve social ends, human practice are equally consumed by the increasingly complicated formats and tokens of technology to achieve the ends defined by technology's own regulative schemes. Human actors are used by computers as much as computers are used by human actors⁹.

The internet governs social practice in the way that it regulates how the information tokens (as reference to human actions), and the tokens as reference to other tokens (reference of references), can be manufactured through its internal technological procedures – through functional reduction and closure, as well as automation and objectification (Kallinikos 2011, Kallinikos and Tempini 2012). For instance, in order to be recognized by the computing algorithms of the internet, and thereby to take the advantage of the benefits of information processing automation and scaling up (think about big data and business analytics software, social media and search engines), users have clear behaviour motivation to render their actions (or other people's actions) digitally accessible. That means the technology governance applies an extra layer of meanings for human actors to internalise and justify the behaviour rationality. Significant meanings for online business owners to consider would typically include: how would Google's search engine "read" and "rank" my home page? How would Instagram's picture rating actually

⁹ The thesis of human-technology symmetry has been debated for decades in the field of information systems, STS and cybernetics. Particularly, it has been highlighted by the theorists associated with actor-network theory. Here, I have no intention to open these philosophical debates as my main purpose is to highlight the technology's elementary, mundane framings of human actor's everyday life.

recommend my pictures to friends? How would TripAdvisor's customer ratings evaluate and rank the customer experience of my hotel? These subjective understandings of the "how" questions regarding how technology would govern (to measure, to categorize, to rank, to recommend, etc.) the reference (tokens) of their actions – and tokens of tokens -- essentially constitute the agency of technology-mediated social practice.

This is to say the key strategy of internet technology governing social practice is to develop informational tokens which serve to indicate how well users have been conforming to the norms, the logic of which is embedded in technological codes. Understandings of how technology works to serve user's own purpose are thus closely associated with those digital tokens that signify how well they have already performed against the criteria embedded in the machine's computing logic. Such symbolic interaction between human and machines constitutes a secondary order of hermeneutic cycles – human actors are constantly in the process of making sense of how technology makes sense of their own behaviour, and use their contingent understandings of technology's "understanding" (meaning the manufacturing of the reference of the data references) as the justification for behaviour rationality. To illustrate this important point, Figure 3-1 is an exemplary circles of human-machine hermeneutic interaction, which demonstrates the ways social practice

and technology are symbolically interacting with each other in a self-referential cycle.

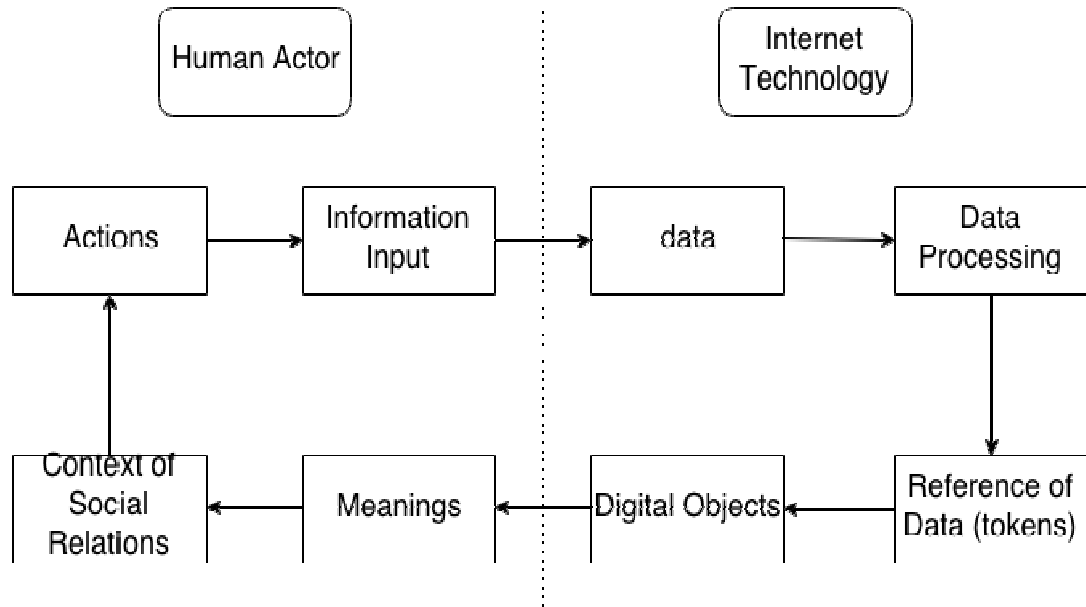


Figure 3-1 Hermeneutic Cycles of Human-Machine Symbolic Interaction

An important implication of governance of internet technology is that individual actors become increasingly embedded in the cognitive environment in which they have to keep catching up with new tokens (digital objects) and the techniques of interacting with new tokens. Such cognitive embeddedness in context of technological information makes it possible that individual's social behaviour can be justified by the meanings of information tokens, rather than the original social context to which these information tokens have been meant to refer. The development of such movements have already been described as the "*digital habita*" in which the significance of reality itself becomes secondary to the significance of references to reality, as well as the

“framing” of such references to either reality or references. Kallinikos and Tempini’s (2012) explicitly expressed the concern that *“a new reality is brought about by these techniques and ways of construing and assessing problems and situations in which data availability and data analytics prevail”*. The line of thinking has been traced back to 1980s when computers were widely adopted in work places. Zuboff (1988) observed and documented the changing nature of work as a result of the computer-support work environment: *“the new layers of data produced by computer-based technology and the fixed methods for processing information create novel physical and social distances between organizational employees themselves, and between them and their object of work”*.

Drawn up Zuboff (1988) and Bateson (1972), Kallinikos (2010:93) further suggested:

“...schematically speaking, it adds another layer of cognitive tokens and techniques between man and the world on those that the organizing practices of modernity have already accumulated in the form of writing and notion of every kind...the distinctive character of this layer is that it consists of impersonal, abstract and comprehensive information tokens and new largely fixed methods for acting on it, derived largely from formal logic (the software)...”

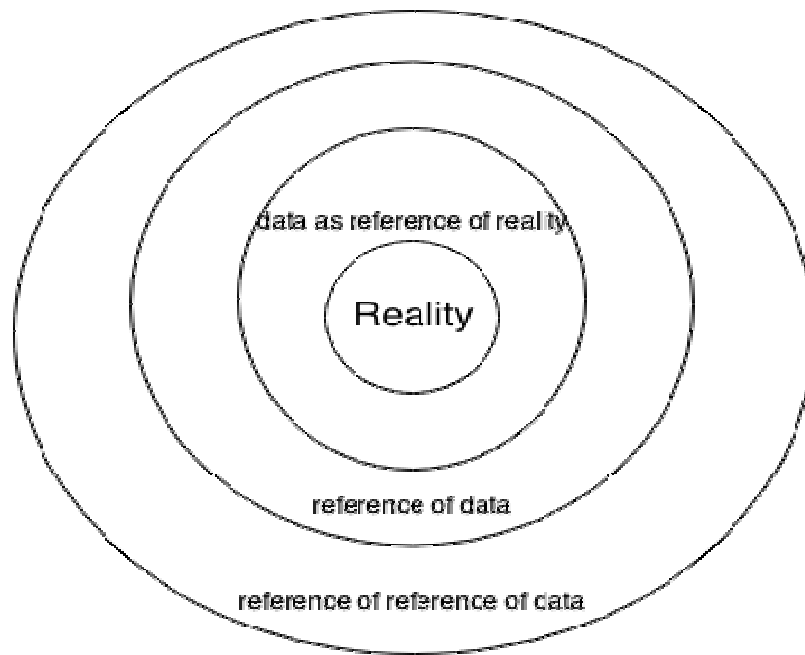


Figure 3-2 Embeddedness in the Self-Referential Habitat of Data Tokens¹⁰

To put these insights into the context of internet-enabled networking and collaborating activities, individual actors are subject to the cognitive embeddedness of digital information habitat that is comprised of the following stratified categories of tokens¹¹ as well as the meaning construction process by these tokens: the first-order reference of reality (the details of who, what, where, when, images, video/audio recordings etc.), the second-order reference (metadata) which is the data about the first-order reference of reality (page-rankings, customer ratings/reviews, measures of popularity, being recommended by, being liked by, friend circles, keyword tags and tagging etc.), and then, the reference of

¹⁰ In this diagram, the use of term “reality” by no means indicates the philosophic position of realism, or critical realism. Instead, it only gives an indication of “how actors perceive, or jointly perceive, as reality”, and aims to illustrate how the framings of technology becomes an important part of constituting reality or its representations. More details of ontological and epistemological position can be found in the methodology chapter.

¹¹ Kallinikos 2009 used the term “vertical stratification”

metadata – the tokens produced by combining and computing heterogeneous sources of metadata¹², and so on.

Leading platform owners on the Internet are competing against each other in terms of the increasingly sophisticated capability of “making sense” of the mass technological data and metadata made possible via Internet services. Such capability is only technologically possible through the ways of functionally simplification/closure and automation/objectification – specifically, reducing complex information/situations into several measurable dimensions, computing these measurable dimensions into digital objects, and make sure these digital objects are capable of being input into other objectification schemes (such as Tweet’s popularity scores, Facebook’s Like scores, Clout’s social status cores etc.), which feedback into human actor’s sense-making activities (see Figure 3-3).

To summarise, to be embedded in the digital networks is essentially to be embedded in the complex cognitive environment of digital symbols and the continuous cycles of sense-making and aligning human actions with the interpreted meanings delivered through technology. Internet as the overarching regulative regimes work to reduce human actions (reality) into computable data (in-formating) and manufacturing new digital objects as the output to feedback into the hermeneutic practice of human

¹² Many examples can be found under the title of “interoperability” and “convergence” as the main features of openness in Internet. Applications of mixing different sources of data and embedding into new environment of software functions are often called “mashups”.

actors. This view of internet governance has significant difference from Lessig's and Grimmelman's view of technology governance as the "architecture" or "plastic architecture". It provides a process-oriented theory explaining how social actions are governed by the technology of information flows. After all, the nature of internet networks is the flows and fluidity, not physical architectural constraints, no matter how plastic it can be.

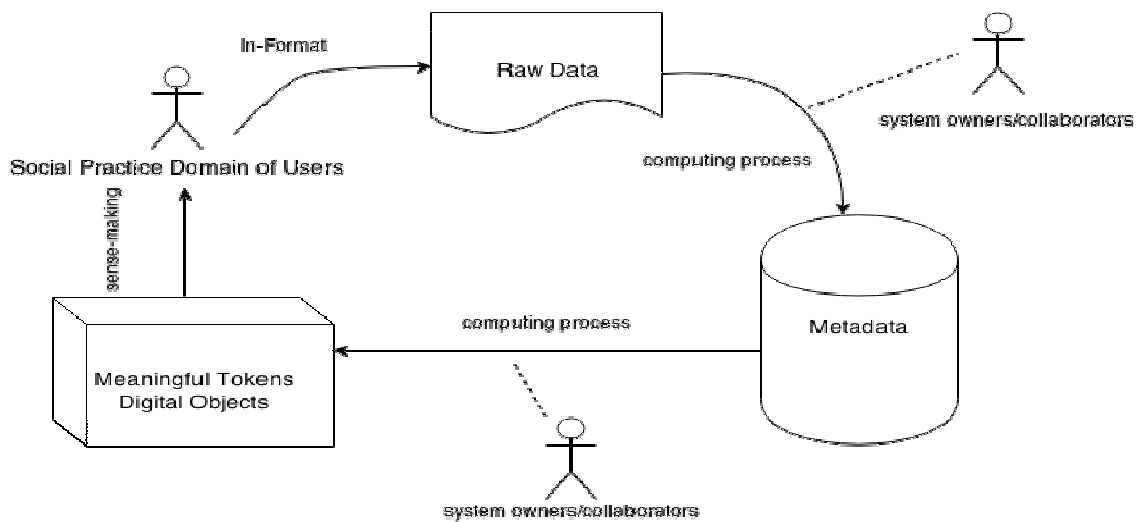


Figure 3-3 Sense-making and the manufacturing of digital objects on Internet

3.3 On Hybrid Sociality – Embeddedness Revisited

Back to the theory of embeddedness, how do the insights of cognitive embeddedness in digital habitat help us understand the phenomenon that human actors are simultaneously embedded in local context and digital context? Before rushing to mix the theories of local embeddedness and digital embeddedness and taking the technological interventions as another space of relations, it is probably necessary to assess the meaning of “virtuality” on internet. In other words, how virtual are we by being on internet?

The “space” view of internet networks – as explicit as the term “cyberspace” – is the result of a discursive and rhetorical construction process, since the very notion of cyberspace, and various digital-objects (*website, platform, knowledge portal, uniform resource locator* etc.) draws heavily from what we know as the territorial concepts of space and place (Graham 1998). These concepts refer to nothing but the heterogenous networks of ICT and human practice, which involves “programmers, codes, silicon chips, international transmission protocols, users, telephones, institutions, computer languages, modems, lawyers, fibre-optic cables, and governments to name but a few, straddling, linking and weaving together” (Bingham 1996).

It by historically constituting these spatial/territorial metaphors into the understandings of new technologies (virtual communities, platform technology, knowledge portal, online shopping mall) that those complex technological systems (silicon chips, fibre-optic cables, protocols, software codes and algorithms) and the exchange activities of data become comprehensible and operable for individual actors and institutions. While conceptual metaphors indeed shape the way we think and act (Lakoff and Johnson 1980), the ongoing rhetorical construction process may infuse novel interpretations, which means that the territorial metaphors – as one interpretive mechanism to symbolize, legitimize and mobilize complex networks of technology artefact and human actors – are subject to constant challenges of alternative interpretations of digital symbols, entailing, of course, various kinds of power interests. So it is clear that internet networks as “virtual space” is only a matter of discursive constructions¹³, lacking the critical quality of being another dimension of space¹⁴.

In light of this insight, the efforts of theorizing “recombinant architecture” in which the digital networks and local context are intertwined necessitate

¹³ In fact, geographers like David Harvey, Henri Lefebvre, and Yifu Tuan, would illustrate that the concept of place and space are subject to very different ways of discursive construction. On one hand, many scholars assume that the space is an Euclidean three-dimension sphere where place is determined by location and distance. On the other hand, critical perspectives of geography studies indicates that modern geographic concepts, or out ways of understanding geography (space and time), are subject to the shaping of powerful institutional forces in our time, such as the global capital and production flows, science and technological rationality etc.

¹⁴ By space, I only mean the three-dimensional physical space as we as humans experience in the world. I recognize many geographers’ efforts to theorise space beyond the boundary of such three-dimensional physicality and indicate the co-existence of multiple combinations of space and time. Whether the internet network belongs to such multiple combinations of space and time merits another effort of examination.

the existence of a common ontological ground of space and place. Instead of having a static view of social relations networks as social structure proxy and relying metaphors to draw boundaries between online social world and local social context, the theory of hybrid-sociality can be developed by considering individual's actions in context of on-going (meaning-construction) process of socio-technical practice.

By hybrid sociality, I mean the effects of meaningful social relations jointly constructed via both online regulative regimes and offline local institutional environment. The ongoing process of socio-technical practice refers to the actor's enactment of meanings through both technological means and spatial means. Such meanings express themselves through actor's sense-making practice in context, such as the understandings of good management practice, rationalities of good behaviour (Callon 1998, Avgerou and McGrath 2007), various social rules and procedures. From this perspective, social relations constructed and transmitted through the communication networks of internet – the conduits (membership, affiliation etc.) through which meanings and institutional power are transmitted and enacted – are nothings “virtual” or “imagine”, but ontologically as real as those social relations constructed through material places.

This is to understand embeddedness not a static pattern of relations (Ettlinger 2003: 159), but as a dynamic process of social relations

formation and deformation – a process of an expanding regime of control via associating or dis-associating (local, nonlocal) relations. Cyberspace, in the view hybrid sociality, is simply a different source of governance structure from local space. By associating themselves with online institutions, local actor's agency is being framed by the institutional structures of the Internet. Due to the local actor's "membership" in the online networks, they may be influenced by specific set of rationalities and visions, who in turn may actively enrol other local actors into the online institutional regimes, mixing (constituting) the meanings of online institutions with the existing interpretations in local place.

Embeddedness as Process of Sense-making and Control

To illustrate how hybrid sociality constitutes local actor's behavioural agency, it is important to see how these expanding technology-enabled regimes of control shape the ways actors build up local social relations and collaborate with each other. In the risk of over-simplification, I argue that the essential feature of the internet networks as governance is the organizing mechanisms to increase the connectivity of individual users as well as platforms. By connectivity, I follow van Dijck's (2013) definition which refers to the process of amassing economic capital based on social connections on internet. In non-theoretical language, connectivity refers to the ways that individual users (and platform owners, corporations of course) amass online connections and transform such connections into favourable clicking-flows (using a blunt jargon from

Silicon Valley venture capitalists, the eyeballs) so that the business can be sustained.

Research literature of social media and web2.0 indicate that actors may follow at least three different online mechanisms to gain connectivity advantages: namely, openness, connectedness and participation. The openness mechanisms encourage individuals to share as much information about them as possible – explicitly and implicitly (van Dijck 2013; Fuchs..) – so that the technological system can recommend extra possibility of links to help them better connect with others. Connectedness provides a variety of new ways to link people together by online experience with information tokens. Such ways may take the mechanisms of search engines (or techniques of search engine optimizations), or the mechanisms of *interoperability* – allowing external service providers to exploit the network data and provide novels of connecting and information-production. Participation (or peer production) provides another important mechanism for online users to boost connectivity, as users may collaborate with each other on a joint-project so that their individual contributions can be rewarded with wider reputational recognition on the network. These three mechanisms in practice are not clearly-cut as the platform owners and users tend to mix all three mechanisms together to boost connectivity. For example, Facebook brands itself as an open platform not only in the way that it encourages users to share their personal information and social

connections, but also to share its platform network data with external platforms so that it becomes possible for the third-party service providers like Spotify to supply new ways of experience and connecting.

The regimes of connectivity may have enormous impacts on the ways users construct their social relations in local context (see Figure 3-4). First, once an individual user has accumulated large amount of “social capital¹⁵” – meaning social connections, clicking flows, eyeballs – on the digital network, which can be objectified in various kinds of digital symbols (TripAdvisor’s ratings, Twitter’s followers, Google’s top PageRank etc.), his/her local social relations are likely to be re-moulded in a way that contribute to the reinforcement of the established online social capital. A hotel may be well motivated to improve its customer service and facility in a way that directly responds to its TripAdvisor rating schemes and comments. The hotel may even hire specialised staff to deal with online comments, especially those negative reviewers who have significant influence online.

Second, local actors may develop many different ways of collaborating with each other, if they believe that their joint-efforts directly contribute to the boost of their connectivity online. The ways they transform their joint-efforts into online connectivity can be seen as a process of digital rendition (framing) of what they do and how well they do it – a process of

¹⁵ Here I use the term “social capital” in its very general sense, meaning the amount of connections on internet and the potential of converting such connections to economic capital.

datafication. Since the Internet has become such a comprehensive surveillance regime that captures details of the reality, local actors gradually develop the skills of knowing what's been captured and computed by the internet, in what ways. It is based on such practical know-how that the local actors develop various arrangements of collaboration and joint projects, which they believe will be recognised by the internet-based algorithms and eventually translated into connectivity.

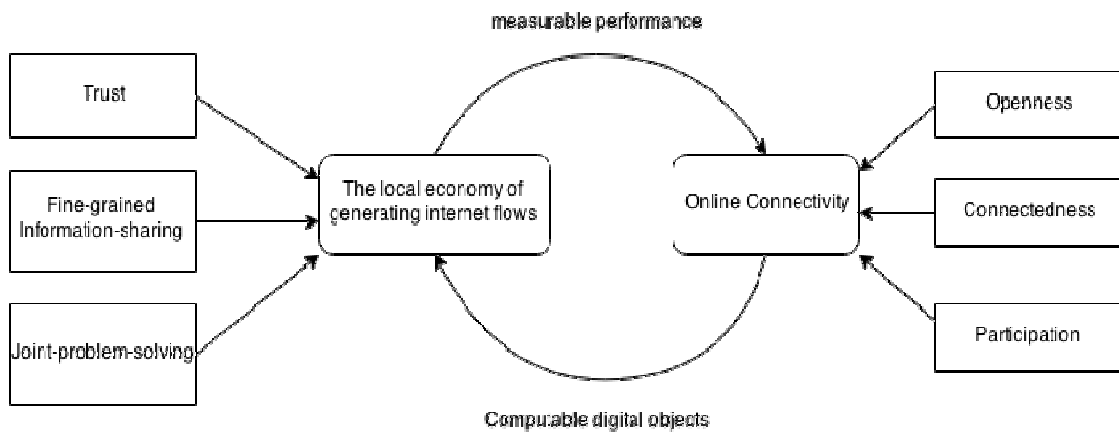


Figure 3-4 Embeddedness as Hybrid Sociality

Third, the local domains of social relations actually provide the organizing support that works to actually commoditize the online connectivity. In the case of e-commerce, online seller's social capital may bring favourable internet clickingflows (page views). However, these sellers need the whole line of business operations from manufacturing, sales to customer service that work together to turn internet connections into profits. Failure to streamline these business operations into competitive online experience (measured by digital objects) simply leads to lower

connectivity, which feedback to less sales, low profits. In other words, the online connectivity and its underlying networking logic (openness, connectedness, participation) entails the emergence of new ways of managing business. A striking feature of this new network managerialism is the infusion of networking logic into the ways a local business can be organized, whose performance is essentially judged by the criteria of connectivity, not profit.

4. Research Methodology

4.1 Introduction

This research follows the strategy of ethnographic case study, as the research methodology that combines interpretive case study method with ethnographic techniques. Case study, according to Yin (2009), is an empirical inquiry that “*investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident*”. It is true that Yin tried to distance case study from ethnography as an independent research methodology, suggesting that case study doesn’t necessarily involve some ethnographic principles (such as “detailed observation of the natural world” and “attempt to avoid prior theoretical commitment¹⁶”). And yet he admitted that case study can be based on a mix of quantitative and qualitative evidence, including, of course, the evidence collected via ethnographic techniques.

What I have adopted as ethnographic case study is different from what the anthropologists expected as ethnography methodology. For anthropology, ethnography means years of living and “hanging out” with the cultural natives and systematic documentation and analysis of alien

¹⁶ Many ethnographers would firmly deny that they avoid prior theoretical commitment in their research. Yin (2003) probably only referred to a branch of ethnographic researchers, such as the school of Grounded Theory, who tried to mingle ethnographic analysis with positivist traditions.

cultures, which constitutes the core identity of the discipline, the central rite of passage (Van Maanen 1988), sometimes, a strong philosophical commitment (Geertz 1994, Malinowski 2003). Here, ethnographic case study is closer to the strategy developed by the sociology branch, which, as exemplified by the Chicago School, normally involves short expeditions¹⁷, intensive and targeted interviews, and close observation of the settings (Blumer 1966, Van Maanen 1988, Becker 2008). In short, the ethnographic case study serves as the research methodology here because: a) the case study comes with strong prior theoretical propositions and philosophical assumptions that guide the empirical search in the field – theoretical concepts work as the “sensitizing device” (Kallinikos 2011) to detect and see relevant things in the field; b) ethnographic techniques involves participant observation and information conversation-based interviews, which proves instrumental to identify the subjective interpretations of the world, as well as how such subjective understandings are related to surrounding social relations and their practical use of technology. The ethnographic techniques provide important empirical data to address the research concern on the relations between ICTs, social relations and local context.

¹⁷ While typical sociological fieldwork involves short expeditions to domestic sites, this research takes field trips to China, a country with different language and culture from the English-speaking-world readers. This research, however, still belongs to a kind of sociological enquiry, comparing to its anthropological cousin, not least because the author speaks Chinese mandarin with no problems of interacting with the natives, but also because of the methodological nature of this enquiry.

4.2 Research Design and Field Experience

The fieldwork in China consists of one pilot study and three formal field trips between 2008 and 2011 (August 2008, March-April 2010, June-July 2010, and August-September 2011, see Appendix A.). The pilot study in 2008 involved intensive interviews with the Alibaba Group and its affiliated company Taobao — the major Chinese e-commerce service providers. I interviewed with three middle-level managers in Alibaba and Taobao in the city of Hangzhou, where the Group's headquarters are based, and one district manager in Jiangsu Province (Nanjing). The interviewees at Hangzhou headquarters introduced the Alibaba Group's entrepreneurial story, main strategy issues, their understandings of customers and service products etc. They also revealed details about Alibaba's corporate culture and the urban environment of Hangzhou its global headquarter, comparing to other metropolitans such as Beijing or Shanghai. The interviews with the district manager in Nanjing was more about the ways Alibaba companies provide on-site support for local SMEs and marketing tactics. While the interviews were mainly about finding how Alibaba and Taobao, as China's leading online business service, actually develop service product and organize online business communities, the focus of pilot study was to assess the roles of China's software-service providers in supporting domestic SME manufacturing industries, which contributed to the master degree dissertation before PhD upgrading in 2009.

The first field trip in 2010 was based on the previous contacts with the Alibaba and Taobao people established in 2008. For the first week, I stayed in the city centre of Hangzhou and lived in a hotel just next to the complex office buildings of Taobao. The on-site observation was arranged by appointments with the Strategy division of the Group. A senior manager from the strategy division, who is also responsible for research projects in Alibaba Research Centre, facilitated the granting of my access to the company as an academic researcher. So I stayed in the open plan area of the company for roughly three to four hours every day for a week, and talked to people in different divisions of the work place to understand their roles. The company does not allow the use of an audio/video recorder in the open-plan work place, although a few camera shots were allowed. One-to-one interviews were arranged in meeting rooms, where the use of recorder can be allowed if agreed by interviewees. Also as a byproduct of sitting and wandering in the open-plan area like a “professional stranger” (Agar 1996) or “self-reliant loner” (Lofland 1974, Maanen 1988), I had the chance to meet and observe micro-entrepreneurs, the company’s clients, who came to the company to attend training seminars and look for business collaboration opportunities.

Meeting people and talking with them in office settings can be very formal. Exchanging business cards is a ritual before starting a talk, even though the meetings were usually arranged by an employee whose task

was to show me around and facilitate acquaintance. However, social conversations occurring in the settings of off-work environment can be very different. I managed to get extra contact with Taobao employees and micro-entrepreneurs in two ways apart from being in the office. One way was to arrange one-to-one meetings in other places, mostly, in the coffee shops near Taobao (and my hotel). Such style of interview was very effective for micro-entrepreneurs, because they seemed to trust me as a scholar and felt relaxed to talk about their experience with someone they regarded as “independent expert” with no strings attached.

Another way was informal socialization by getting mingled in Taobao employee's social life. I was invited to attend a few evening dinners and night cafe/clubs after work. The employees I met during the daytime work got more relaxed about expressing their views of Taobao and their own jobs. It was mainly through these informal talks that I got to learn what social background of these employees come from and why they become involved with Internet industries. Such evening dinners and coffee bars were usually a mix of current employees, ex-employee-turned entrepreneurs, micro-entrepreneurs (clients), software developers and university faculties/graduates etc. One night bar -- a place called BetaCafe Club -- becomes one of the most popular places among e-commerce related entrepreneurs and Alibaba employees. The club is situated five-minutes-walk-away from the Taobao office building and is run by an ex-employee of Alibaba Group. I met many people from that

club, among whom several micro-entrepreneurs came from Yiwu regions. Although I met some of these entrepreneurs in Taobao seminars/conferences before, there were not much time to talk with them partly because of the office settings in Taobao -- the company was keen to show their clients sophisticated software service or training materials, leaving little time for informal conversation. So sitting in BetaCafe was a great opportunity to talk with these people. Their stories of managing e-commerce enterprises with local support eventually lead to my fieldwork in Yiwu's regional clusters. After Hangzhou, I initially went to Shanghai, because a couple of entrepreneurs I knew from Hangzhou were operating business at Shanghai. I only stayed in Shanghai for two days, visiting their companies and asking questions about their business and their suppliers.

The second week of the first field trip in 2010, following a week of intensive interviews and participant observation with Alibaba-Taobao staff, was conducted in the city of Yiwu. The city of Yiwu was brought to my attention partly because many of the micro-entrepreneurs I met in Hangzhou were from this place and they all mentioned the advantages of doing commodity trade business there. Yiwu city has a different setting from Hangzhou. It's a much smaller town in the centre of Zhejiang Province, with a county-level government. I stayed in Yiwu for five days and conducted intensive interviews with local micro-entrepreneurs. Before the Yiwu trip, I managed to secure support from the Alibaba

Research Centre, whose staff helped introduce my research purpose and selected a few successful entrepreneurs who agree to have interviews. So I spent the first three days visiting six different entrepreneurs (and their families), their offices and their homes. The interviews were semi-structured, with broadly three categories of questions (online business strategy, Taobao service support, and internal operation management). The unstructured part of the conversations was actually more informative, revealing life stories of entrepreneurs, local social relations, leisure hobbies and personal ambition etc.

It was during the second week that I found most Taobao micro-entrepreneurs are living and working in a small community neighborhood -- QingYanLiu. The neighborhood is situated in a particular geographic setting that enables socio-economic conditions that support the growth of micro-business on Taobao (the local college, the restaurants and café, the commodity market and the logistic companies). Curious enough on why and how these micro-entrepreneurs are clustered in a particular neighborhood, I walked around the streets of the neighborhood for two days and tried to catch up with random micro-entrepreneurs and asked general questions about their life conditions and social habits -- business hours, commodity sources, skills of management and Taobao tools etc (pictures are attached in the Appendix). I received assistance from the Yiwu e-Business Association, a local business group organized by local volunteers via online forums. The association helped me access to the

the neighborhood's business firms and I found that each flat in the neighborhood hosts a business enterprise that uses Taobao platform to operate business. Thanks to the introduction of the association, I managed to get inside several flats and observe the ways they organize their daily work -- a small open-plan working area, a few employees with computers, balcony kitchen, printers and delivery forms etc. The interviews involved semi-structured questions followed by informal conversation about their local social life. Apart from visiting individual family business (apartments), I also took time to walk on the streets and tried to write down everything I saw into field notes -- the street ads, the general layout of the neighborhood, the "timetable" of delivery companies, the business hours of restaurants and café etc.

The trip to Dongfeng village, a small rural village in the north of Jiangsu Province, was the last stop of my first field trip in 2010. I learnt about the story of the village, which developed a competitive furniture-making cluster via Taobao platform, from a local newspaper reporter, who was also collecting news materials in Yiwu at the time of my research. Back from Yiwu, I enquired the situation of Dongfeng village furniture-making clusters from Alibaba Research Centre and collected some descriptive data about the scale of the furniture business in that region -- as recorded in Taobao's database, the number of furniture business registered at Dongfeng area, the total annual revenue, the average customer ratings etc. Then I made direct contact with the township

government of Shaji, the governing body of Dongfeng's local region and successfully secured an appointment with the local government officials there. Part of the reason, as I reflected later, that the local government officials were quite supportive to receive my visit may be that they were keen to display their peculiar industrial success as a rural region. So my first meeting in Dongfeng was with the government officials in Shaji town. The meeting took about one hour in the government offices, with party secretary and his colleagues introducing the general economic situation of the town, and their views on Dongfeng village's furniture cluster.

During the meeting with government officials, I was introduced to a few local entrepreneurial leaders. They didn't have the time to talk during the meeting, since the government officials were taking the time for presentation. After the meeting, I was invited by these local entrepreneurs to visit their offices and factories. The government buildings were about ten-minute walk away from Dongfeng village. The township government was situated in the high street of the Shaji town, while the village is located in the south end of the high street and has convenient access to the highway networks, which connects Shangji town to nearby major cities. I stayed in each office of entrepreneurs for about one hour, and talked with them while observing their employees working with their computers side by side. My initial questions were very explorative, and asked about their business conditions, online tools, capital and skills etc. Then during the conversation, I tried to understand

how the local people, most of who are peasant and had limited education background, get to learn e-commerce skills that are necessary for their business. During the conversation, I also sought information about the social relations between individuals and families in the local area. After the one-to-one conversation, I asked if they could show me around the village and see the way the whole village is geographically organized.

After the first field trip (March -- April 2010), I came back to London and organized my field notes. The second field trip (June -- July 2010) was arranged only one month later. It was primarily focused on the regional clusters of two regions -- Yiwu and Dongfeng. I stayed at Yiwu and Dongfeng for another week in each place. Based on the interviews I've done one month ago, the second week of visit was more informal than the first trip. For example, as I've known many people in both places, I had the opportunity to chat and socialize with them on the streets, in café places and restaurants. Through these informal conversations, I got to learn the social relations between these local people, for instance, who and how do they share fine-grained information with, how do unfamiliar people establish trust through local networks, and government relations etc. During my stay in Dongfeng village, it was even possible to run a limited survey by visiting every family in the village. The survey collected some basic information their e-commerce business (number of employees, monthly revenue, taobao tools, loan application, main suppliers etc.), and it received help from local government officials,

because they were also keen to collect more information about the local business.

Based on the data collected from Hangzhou, Yiwu and Dongfeng, I gradually became confident that both regions host successful entrepreneurial networks that heavily rely on the operation of online technology platforms. The business service delivered via technology platforms exhibits strong web features. Bearing such interpretation, the third field trip (August - September 2011) took place in Yiwu and Dongfeng one year later, and mainly served as the confirmation process of my interpretation, based on the participant observation and interview data I collected one year ago. The confirmation process was also assisted by the research staff in Alibaba Research Centre, who were generous enough to offer their views on my findings. It should be noted that apart from the three formal field visits, I kept online contacts with the informants in both Alibaba Group and two regions, via Aliwangwang (Taobao's online messenger) and emails. Sometimes, the informants talked about their recent experience via online messengers, and exchange views with me regarding my observation findings. Based upon the data collection (and analysis) activities in three field trips, the view that the relational and institutional embeddedness of the entrepreneurial social networks are essential a hybrid of online and localized process have been established and confirmed.

4.3 Access -- Beyond Gatekeeper

Unlike anthropologists who gain access to an alien culture through local “gatekeepers” (Hammersley and Atkinson 1995), my greatest concern in this research was not the restrictions of access to the natives in China (how-to-access), but the control of directions of such access (access-to-what). There are simply too many things unfolding in China which can be related to the “e-commerce entrepreneurs”, “Taobao ecosystems” or “SME networks”. So a fieldworker, once landed in China, could easily get lost in its socio-economic diaspora. My data collection experience in field followed a snowballing approach (Biernacki and Waldorf 1981, Doreian and Woodard 1992) to gain access and manage contacts, which could help make sense of decisions such as who to follow and why. The “seed” points of contact I made was the Alibaba Group, particularly with employees who share my concerns of e-commerce and entrepreneurship -- the process of referring myself to relevant personnel within Alibaba took another process of referral networks, something the sociologists referred as *Guanxi* networks. During formal interviewing and informal socialization with these employees, I was quite open about my research interest and managed to develop trust relationship based on common research interest and expectation of potential collaboration. Thanks to the openness of the Group, I was told that they welcome a wide range of researchers to examine the e-commerce entrepreneurship phenomenon as they are struggling themselves to “catch up” with the phenomenon.

Due to my Chinese background, the informal social process helped secure my involvement in a number of important social events (seminars, conferences, and coffee break) which provide lots of opportunities to meet the micro-entrepreneurs. Both the Yiwu and Dongfeng case was identified during informal discussions with Alibaba employees and their micro-entrepreneur clients (sometimes, even local news reporters). The support from Alibaba Group, both formal and informal, was crucial for my exploration in the field. In Yiwu region, my involvement was coordinated by the local e-business association, which was introduced through Alibaba employees. The access of Dongfeng case was slightly different because I gained the access through the local government officials, whose motivation were more opportunistic in terms of seeking as much external collaborations as possible. To a certain extent, the referral networks of the snowballing approach became a social network itself, with me as a researcher embedded in a trans-local network of micro-entrepreneurs, Taobao employees and external researchers.

4.4 Participant Observation

Familiarity with Chinese culture and language -- including its dialects and local customs -- poses serious challenges to the process and outcome of participant observation, since my consciousness may carry too much taken-for-granted local knowledge. Similar challenges have been addressed by Chicagoan sociologists who conducted fieldwork in domestic sites -- especially the community studies or urban subculture

studies, drawing clear boundaries between sociologic ethnography and anthropological ethnography (Van Maanen 1988). While there are several techniques to alleviate the inevitable bias or ignorance in field, for instance, techniques of massive detailed description (Becker 2008) and reflexive/confessional narratives (Van Maanen 1988, Becker 2008) etc., I relied upon two techniques to “recalibrate” the experiential understandings as part of the collected data. The first technique is the joint observation and extensive discussion. Joint observation took place between the corporate researchers of Alibaba Group and me, an independent external researcher. Conversation between these corporate researchers could help me further reflect not only the business practice of micro-entrepreneurs, but also the use of languages and common mindset among Taobao communities and the ways Alibaba and Taobao influence the entrepreneur’s cognitive understandings. It also took place between non-Chinese observers -- in this case, my PhD supervisor at the LSE and other academic colleagues -- and me, the translator in joint participant observation. Through the sharing experience of on-site observation, issues of why and how local actors are doing things in particular ways, especially those pertaining to lingual-cultural concepts that could have easily slipped into the “natural way of thinking and doing things”, surfaced to our horizons of critical reflection.

Tracing the Actors

The second technique is inspired by what Actor Network Theorists embraced as “tracing the actors” in the field (Law 1991, Callon 1999, Latour 2005). When ANT theorists speak of tracing the actors in the networks of mediators and intermediaries, they meant more than -- even different from -- what I mean by literally tracing the actors through their social networks -- particularly their emphasis on human-object symmetry is missing in my inquiry. Nevertheless, the participant observation process in China draws inspirations from the methodological implications of actor network theory in terms of tracing the meanings and references of actions in local context. For example, by tracing the actors and social networks of employees in Taobao company, I was able to, step by step, access the dynamic social life of heterogeneous actors as well as their entanglement with technologies, which ranges from micro-entrepreneurs, online consumers, software developers, venture capitalists, corporate bureaucrats, local families, to government officials. The process of following the social networks of actors was conducted by constantly questioning the rationale of actions in relation to actor’s specific situations: who are the actors? what are their social background and their main struggles? how are they connected via online tools or offline settings? what kind of social context are these actors embedded within? where are they stemming from? where are the important co-operators located? how do they establish and sustain the collaboration? In the process of following the rationalization process of actors in local context, the method of inquiry can be understood as an effort of “framing” the

study of economic activities entangled with Internet networks. I will explain this in detail in the analysis section.

4.5 Data Analysis

Based on ethnographic data, the central task of analysis is to uncover the institutional underpinnings of actors that can justify their ways of thinking and doing things. In other words, the analysis is as a process of mapping the local social actions with contextual structures, drawing upon the theoretical insights of embeddedness I have discussed in the theory chapter. Such analysis can be effectively conducted by following the analytical approach of framing and reframing. Drawn from Goffman (Goffman 1964, 1974), Avgerou and Madon (2004) suggested that the framing process should be:

“... the revealing of the already institutionalized idea, claims of truth, and codified practice enacted by actors involved in IS innovation. The effort of framing is intended to shift the focus of attention from the observed actions of an IS episode to the roles or the mental and emotional states these actions enacted, and the discourses responsible for the claims of their validity, and the mechanisms that reproduce them...” (p173).

To operationalize framing analysis is to trace a diversity of sources of institutional forces based on a process of reflective assessment on individual's actions and thinking in specific situations. In practical terms, this can be done in two steps. Firstly, the documentation phase, in which the researcher presents an account of thick, detailed narrative -- simply to narrate an episode as fact. Secondly, the reflective assessment phase is to analytically reveal the institutional framing of actions -- to justify the actions or to question the assumed causality in context. This two-steps analytical process seems to resonate with what Lee and Baskerville (2003) summarized as the first-level constructs and second-level constructs as the features of interpretive analysis. Drawn upon methodologists of ethnography like John Van Maanen (1988), Alfred Schultz (Schutz 1962), and Clifford Geertz (Geertz 1973), Lee and Baskerville (2003) suggested that the first-level constructs refer to the thick description of the observed people and actions, "just as a passing instantiation of people's culture and social structures" (p230), while the second-level constructs refer to the general theory that is based upon thick descriptions and applied to explain the observed phenomenon, which is only relevant to the culture of researchers, not the researched. Understanding of the relation between first-order and second-order constructs involves the debates between objectivism and subjectivism in philosophy, and between structuralism/functionalism and poststructuralism in sociology¹⁸. Therefore, as neat as the two-steps

¹⁸ examples can be easily found in the rising interests on critical realism, the

procedure seems, a close examination of the ethnographic data suggests a much more complicated picture than the two-level framework. Let me explain why these two levels of conceptual constructs become more complicated in data analysis, both ontologically and epistemologically.

Realist tales?

The first step involves an “objectivist” and “realist” account of what was happening in micro situations within macro historical context. By using adjectives like “objective” and “realist”, I am referring to the particular styles of writing (Van Maanen 1988) rather than a realist ontology. In fact, the narrative tales account for the observed fact -- what people said, what they did and how their actions related to desirable or undesirable outcomes -- only as a part of the reality. More importantly, the narrative tales account for the meanings of actors, actions and the sense-making process as an essential part of the empirical data. In other words, the subjective meanings of actors and events -- embodied through symbols, discourses and emotional states -- are an essential part of the objective reality itself (Schutz 1962, Geertz 1973, Walsham 1993). Bearing in mind that the philosophy of phenomenology tends to suggest that the subjective perception constitutes the totality of being (Lyotard 1984, Derrida 1993, Merleau-Ponty 1996, Sartre 2013), my ontological assumption here is less towards this subjective extreme, which assumes

influence of Phenomenology since late 20th century in sociological thinking, particularly the tradition of symbolic interactionism in America, or Pierre Bourdieu’s resolution of social research as “two-minutes” argument.

that the mixture of subjective meanings and objective fact¹⁹ constitutes the observable reality. Simply, the documentation phase of inquiry holds that the observed fact is a matter of interpretation, in the same way as the actor's interpretation becomes the matter of fact.

It should be noted that the assumptions of observable reality that I hold in this research does not entail the efforts of uncovering an absolute reality, like what critical realism intends to do. Reality is not the giant elephant to be discovered by people in the darkness. Neither is the observable reality a relativist concept, allowing multiple understandings from multiple perspectives. Instead, the observable reality means that it is produced, shared and contested by actor's interpretation and their relations to the *state of things* -- that is, their enactment of interpretations in practice -- an ontological position generally referred as the relational ontology²⁰. Actors, including me as the social researcher, are equipped with various theoretical apparatuses to interpret life world *in situ*, and act upon -- *perform* -- the world by practicing such interpretations. As Law and Urry

¹⁹ by saying objective fact, I'm fully aware of the complications that being a fact, itself, entails actor's interpretation and a degree of shared understanding among different actors. Latour 1993, Law 2004, Nathen and Stengers 1995. However, I used the term "fact" here in its simplest way, meaning the narrative, the unfolding of events in its natural way.

²⁰ Relational ontology, as the hallmark premise of process philosophy originated in Alfred Whitehead's theory of *Process as Reality*, is a philosophic tradition that is influential among the various fields of contemporary social research, particularly the critical studies of human geography on spatio-temporality (Harvey, 2004; Thrift..Graham...), cybernetics (Donna Haraway...) or hybridity (Deleuze and Guattari, 1982; 1980) and the sociology of translation (Callon and Latour; Law and Mol...). The basic premise of relational ontology is that being is an unfolding process of events, rather than static status with certain attributes. "In contrast to the substance-metaphysical philosophers who always ask *what it is*, process philosophers analyze *becoming* and ask *what is occurring as well as ways of occurring*" (Seibt 2012).

(2004) argued in their article "*enacting the social*", social research is itself productive²¹ -- observing and understanding the social reality is actually a process of producing social reality:

"the reality is indeed real...it is also made...and it is made in relations...theories and methods are protocols for modes of questioning and interacting which also produce realities...we are not saying that reality is arbitrary...the argument is neither relativist or realist...instead, it is that the real is produced in thoroughly non-arbitrary ways, in dense and extended set of relation...."

Without further detailed philosophical review, I rephrase my interpretive positions in this research as follows: a) there exists the "reality", a kind of unfolding multiple-process nature; b) reality is also being made by actor's interpretations and acting upon it, whose consequences are contingent upon the relational structures in which the actors are embedded; and c) to approach the reality involves more than simply observing (interpreting) it -- taking a snapshot, but reflecting the unfolding process of how the actor's social relations shaped their particular ways of understanding and enacting such understandings -- in other words, to trace the process of *becoming* through various interpretive schemes.

²¹ According Latour and Woolgar (1979), science and scientific knowledge, too, is both productive of reality and the result of the process of being produced.

Tracing as the analytic apparatus

Methodologically, what is significant in the “framing approach” for interpretive researchers is to trace where the interpretation stems from and how it becomes meaningful not only to explain individual’s behavior, but also to gain insights into the macro institutional structures (interpretive schemes). This connects to the second phase of analysis, the critical reflection of institutional bearings. To begin with, the reflective assessment²² phrase requires an attitude of the researcher to examine beyond the circle of the focal affairs, and reflect back upon it from contextual perspectives. For example, reflecting upon a case of e-government system failure in an Indian state, Avgerou and Madon (2004) traced the seemingly “irrational” behavior of government officials in using ICT systems. The reflective analysis leads them from identifying a list of critical factors, into the workings of contextual institutions -- the state bureaucracy, caste system and local family life. Their analysis suggested that without a broader and deeper reflection of the significance of contextual institutions, the researchers could miss the crucial point that actor’s behavior can be locally justified. Such a way of making an in-depth analysis, by tracing the institutional bearings of IS innovation according to “its own way of unfolding” -- in contrast to having a “priori categorization” -- illustrates the way framing analysis can be done as data analysis technique.

²² Reflective assessment contains elements of what Pierre Bourdieu (1992) termed as “reflexive sociology”, which denotes that the researchers are part of the “world” they study, and to reflect upon the interpretation of local actors requires the researcher’s own consciousness of his/her own prejudgements.

To trace the actors' institutional bearings into macro structural conditions, the researchers need to follow the individual actors' behavior and perspectives, and seek to uncover the social relations which constitute the relational and institutional embeddedness of these actors. For example, this research starts from following a group of micro-entrepreneurs using online platforms to conduct business, which involves diverse economic activities ranging from manufacturing to retailing. The analysis first sets up accounts of these micro-entrepreneurs, such as who they are, where they are located, which business sector they are focusing on, and how they become connected to each other both online and offline etc. Since most of these micro-entrepreneurs are young local residents with limited education who turn into business adventure for the first time, the study of their experience leads to the analytical inquiry to pursuing how they are involved into the business of e-commerce and why their business adventure becomes such a success, given their disadvantaged socio-economic background. This direction of inquiry then leads the researcher to examine various institutional forces at play in the field: a powerful Internet service corporation, various imaginations of Internet, entrepreneurial local government and political ideologies, rural family life, neighborhood communities, local colleges, division of labour and local markets, financing mechanisms etc. The workings of institutional forces can be analyzed as a particular interpretive scheme

(actor-networks) to which the local actors subscribed, and through which various meanings are generated in local interaction.

For instance, of particular importance in the analytic process is the analysis of the local knowledge about how to make things work. To problematize common sense knowledge is to trace the local sense-making process (Geertz 1973), which is heavily shaped by institutional forces. The local actors hold an abundance of such knowledge. And it is the researcher's priority to uncover relevant local knowledge and gain insights on how the institutional order is settled based on interpretive analysis of it. It is the underlying assumption of the analysis process that institutional forces can be mapped by tracing local actors' interpretive actions in networks of social relations. More than identifying the workings of institutional forces, the analysis moves on to understand how these institutions are coupled with each other and constitute the embeddedness of local actors in the Chinese context.

Framing as the search for the macro structure

Essentially, tracing actors from micro social interactions into the contextual structures constitute the core struggle of theory-building in social research. Karin Knorr-Cetina (1981) identified three broad traditions of social theory trying to settle micro-macro relations, each with a unique focus on unit of analysis: the methodological individualism, methodological collectivism and methodological situationism. Theories of

methodological individualism believe that the macro social structures are constituted and thereby explained by the individual's social behavior (von Hayek 1948, Watkins 1955), while the methodological collectivism suggests the macro social structures (institutional analysis, social systems) exist as a separate phenomenon -- from micro social actions -- which objectively governs the individual's behavior, such as the Marxist concept of capital and capitalism, and Wallerstein's "world-system" (1991). Methodological situationism, instead of offering a compromise between two extremes, suggests that the unit of analysis should be placed on the interactions as a social reality *sui generis*, a domain of inquiry that cannot be reduced to either individual actors or priori structures (Mead and Mind 1934, Blumer 1994). These different schools of social theories, of course, prescribe very different methods of inquiry²³.

Two research strategies, for example, are particularly relevant here, which can be broadly understood as either methodological situationism or collectivism: notably, institutional ethnography and the extended case method. Institutional ethnography is a research strategy developed by Dorothy Smith (2005) based on her own experience as both a researcher and a participant in the feminist movement of North America. It aims to

²³ For example, methodological individualism entails the collection and analysis of data on the properties, interests and activities of individuals, and the ways to account such individual actors in "aggregated" scale, informing theory-building by large-scale measurement and quantitative analysis of statistical data, while the methodological situationism advocates participant observation and analysis of everyday life (symbolic interaction), often influenced by linguistic/discourse analysis (so-called "cognitive turn"), in order to study the situated interaction and the social order/structure being practiced through inter-actions.

understand how the macro institutional structures shape the local individual's experience through social relations, whose key contribution is to uncover the working of power structures in a society and help activists to form informed understandings of the ruling systems against which they are struggling. Extended case method, developed by Michael Burawoy (Burawoy 1991, Burawoy 1998, Burawoy 2000), has been designed as a research strategy to understand the working of global institutional forces through examining the everyday life of local actors. With a clear Marxist tradition, extended case method aims to establish a link between the micro social interactions and the global institutional forces by applying insights of *a-priori* structural concepts into specific case analysis (Burawoy, Blum et al. 2000:29). Both approaches offer a way of understanding macro structure via micro situations. Yet the framing analysis belongs to neither of these methodologies.

Despite recent sociological thinkers' attempts to harmonize the divide between "individualism" and "collectivism", for example, by stressing the roles of "social reproduction of structures in everyday life" (Giddens 1984, Bourdieu and Passeron 1990) or the "emergent order out of individual actions" (Luhmann 1993), a bolder and yet more promising hypothesis is that macro structures might not be even existing if not represented by micro actors and the process of their social interactions, "*through which representations are actively negotiated and constructed, challenged and re-constructed*" (Knorr-Cetina 1981:41). It is the latter perspective that

gains increasing support from both the ethnomethodologists (Cicourel 1974, Garfinkel 2002) and actor-network-theorists (Callon 1999, Latour 2005), which was summarized by Knorr-Cetina (1981: 34) as:

“...the macro appears no longer as a particular layer of social reality on top of micro-episodes composed of their interrelation, their aggregation...rather, it is seen to reside within these micro-episodes where it results from the structuring practices of agents....”

Bruno Latour (2005: 176) argued for the same point on micro-macro relations -- in a Guattarian tone (Deleuze and Guattari 1987) -- taking a relative view of contextual structures and micro social behavior and insisting that there is no such thing as macro structure superseding and governing local interactions except the meanings that connect (by controlling, enlisting, negotiating, and resisting) things across different sites -- in other words, the social world is flat, no upper level, no lower level, simply different sites and connections:

“...macro no longer describes a wider or a larger site in which the micro would be embedded like some Russian Matryoshka doll, but another equally local, equally micro place, which is connected to many others through some medium transporting specific types of traces. No place can be said bigger than any other place, but some can be said

to benefit from far safer connections with many more places than others...”

It is this relational view of micro-macro relations that underlies the framing approach of this research. Tracing the actors, therefore, is essentially about finding the institutional structures through the process of enrolling, contesting and maintaining social relations in local domains - - macro institutional structures exist nowhere but being enacted through local social relations. Such inquiry of identifying institutional structures via local relations is not necessarily to be confined within the micro situations, which, in the case of IS innovation, always assumes organizational context as a taken-for-granted boundary of analysis (Orlikowski 1992, Suchman 1994). Rather, the inquiry of tracing actors seeks to broaden the focus from micro interactions to broader contextual structures without assuming that such macro structures as existing entities *a priori* (Madon and Avgerou 2004).

In other words, tracing the actors is to follow the networks of social relations, which serve as the local medium to transmit macro institutional forces and shape actor's behavior. This is what is meant by Mark Granovetter (1985) when he stressed the significance of “social relations” to explain social behavior to avoid the deterministic/automatic theories that are either over-socialized or under-socialized. Hence, the framing approach can be taken as an analytical method which is to understand

the workings of contextual institutional structures by tracing the networks of social relations in micro situations -- the macro structure is manifested in and maintained by the micro-episodes of social relations. This network logic of framing was also reflected in Avgerou and Madon's (2004: 176) original proposal of framing analysis:

“the framing of IS studies...requires an analytical approach that allows for the emergence of the boundary of an enquiry by its own unfolding...the framing of an IS innovation study is contingent and emergent...a study can begin only by tracing the network of actors involved in episodes of the innovation process under investigation...but the initial boundaries of a study should be redrawn as the study progresses to probe further in history and institutional domains, with the focus shifting to look more closely within specific institutions or to understand the relationship among institutional actors...”

To summarize, the data analysis of this study follows the strategy of framing approach. The aim of framing analysis is to uncover the institutional structures of local actors by justifying their ways of thinking and doing things based on their everyday life contexts. The framing analysis is conducted in two stages: the documentation stage and the reflective assessment stage. The documentation stages presents the major results of participant observations and interviews, bearing in mind that interpretive research presents reality that is composed of both

subjective meanings and observations of “fact”. The reflective assessment stage problematizes the common-sense knowledge and ways of doing things, and trace the broader institutional structures that shapes local meaning-construction and behavior. The analytical method of uncovering macro institutional structure though the examination of micro networks of social relations is justified by the school of the methodological situationism in sociology which argues that the macro structure is only represented by micro social interactions.

5. A Tale of Two Regions

5.1 On China

China is a country of great size. With a land territory of approximately 9.6 million square kilometers, its population, over 1.3 billion, is the largest one in the world. Since the adoption of the 'One Child Policy' in 1977²⁴, China's population growth substantially slows down while the whole population is aging quickly, leading to mounting concerns not only on the pressure of social welfare system, but also on the sources of economic development in the coming decades²⁵. Before 1978, the year that marked Deng Xiaoping's 'Reform and Open Policy', rural population accounts for 80 percent of Chinese population (between 800 - 900 million), most of which are recognized as poverty population²⁶. The era of pro-market and liberalization 'Reform and Open Policy' after 1978 has seen the fastest economic growth in China's modern history. Since 1980s, the economy has been growing at consistent annual growth rates around 10 percent. After three decades of high-speed growth, China

²⁴ Scholars have different views on the date of enforcement of the 'one child policy' in China, as the policy has been implemented in various stages with various specifications across different regions in China. Here I recognize the year 1977, because the 12th National Congress of CPC in 1977 officially recognized the population control policy as the fundamental national strategy.

²⁵ The country's current economic growth is to a large extent dependent on the supply for cheap labour, mostly coming from rural areas.

²⁶ According to the data from Chinese Academic of Social Science, the poverty population living under 1.25 US\$ per day in 2010 still amounts to 400 million.

becomes a major economic powerhouse, ranking since 2010 the world second largest economy in terms of GDP size.

China's development efforts after 1978 are in many ways attributed to the ideological transformation inside the ruling Chinese Communist Party (CCP). Deng Xiaoping, known as the "chief architect" of the "Reform and Open Policy", called upon his colleagues to critically reflect Mao's legacy -- especially the class-struggle doctrine -- and to "seek the truth from the fact" (实事求是) and "make practice the only criteria for testing truth" (实践是检验真理的唯一标准)²⁷. Through series of nationwide debates, Deng dismissed Mao's class-struggle doctrine and argued that the ultimate goal of socialism is to achieve common prosperity (共同富裕), and that the CCP must commit itself to those effective political and socio-economic arrangements that are conducive to such goal²⁸. This ideological turn of CCP bears a clear political logic, meaning the CCP prioritizes economic development on the top of its policy agenda, and that China should learn from those advanced capitalist countries by transforming its socio-economic structures from planning economies to

²⁷ "Seek the True from the Fact", "Practice is the Only Criteria for Testing Truth", these are the two slogans of Deng's "Thought Emancipation" Campaign in 1980s, which aims to reach societal consensus to abandon Mao's doctrines and support his "Reform and Open" policy.

²⁸ "Poverty is not socialism....the task of socialism is to emancipate and develop productive forces, and eliminate poverty..." quoted from Selected Works of Deng Xiaoping Vol.2 (1982-1992). Deng's famous "cat theory" -- a cat is a good cat regardless of black or white -- is a metaphor he used to illustrate the point the socialism and capitalism should learn from each other to achieve the common goal.

market economies. Until today, Deng's political vision has been firmly held as the ruling principles of CCP, and economic growth constitutes a fundamental pillar of CCP's ruling legitimacy. Nevertheless, political reforms, promised by the CCP to construct a democratic and accountable government, had little progress since 1990s²⁹, particularly after the Tian'anmen Square Movement in 1989. Critics point out that political reform as a core element of Deng's reform agenda, has been conveniently circumvented in China's recent development efforts. In short, China remains essentially an authoritarian party state³⁰ which commits itself into the course of economic growth and poverty alleviation as sources of its ruling legitimacy. Party theorists are keen to brand this political principle as the "socialism with Chinese characteristics" in efforts to dodge both the left Maoist critique and the rightist liberal challenge³¹.

China's economic reforms are widely recognized as an incremental transition to market economy, strategically and prudently implemented by the the party state. This historical transition can be generally understood as being through three stages. The first stage saw the introduction of

²⁹ Since Jiang Zemin's era (1991-2002), CCP began to emphasize the principle of "Rule by Law" (依法治国) in Chinese society, and actively construct a comprehensive legal systems to address the demand of market economies.

However, the Party rejected the principle of "Judicial Independence", and asserted that the legal systems should be under the leadership of CCP.

³⁰ For descriptions of China's party-state power structure, see Manion 1985 and Beyme 1996. Some scholars tend to describe China's development as the "state corporatism", see Oi 1992

³¹ The Chinese version of "The Third Way" was explicitly expressed by Hu Jintao in his report to the 18th CCP National Congress 2012, in which he claims that China's political future lies neither in retreating to its historical old paths (Maoism) nor in embracing the Western-style liberal democracy.

Household Responsibility System³² in the countryside (around 1980) and a shift of industrial policy emphasis from heavy industry (Mao's legacy) to light industry in cities. The second wave of development came after 1992³³, when a substantial investment (mostly foreign direct investment) has been made to the consumer electronics industries. At the same time, the government began to consolidate the State-owned Enterprises (SOEs), by privatizing most of these enterprises – millions of industrial workers lost their lifetime employment and were force to enter job markets – while directly controlling a few SOEs in strategic sectors³⁴. Also the 1990s saw the Chinese authorities began to invest extensively on infrastructure and energy supply. The third stage of development is marked by the event that China became a member of WTO in 2001. From 2001, the Chinese economy quickly became an export-led economy. The manufacturing industries (both Chinese domestic and foreign multinational corporations) managed to gain global competitiveness due to the mass supply of cheap labour, collaborative local governments and favorable monetary policies.

Unlike Japan and “Asian tigers”, poverty and inequality remains China's top social and political problem after thirty-years of high-speed

³² The Household Responsibility System (HRS), replacing the People's Commune System in Mao's era, recognizes the each rural family as the basic unit of agricultural production. Unlike People's Commune, HRS allows the land to be allocated to each family's responsibility, and the state will only tax a proportion of the output, leaving the space for private ownership of the agricultural output.

³³ In 1992, Deng Xiaoping began his famous “Southern Tour” to Guangdong Province and made a number of important speeches, which helped re-boot China's reform efforts after 1989's political turmoil and subsequent leadership change.

³⁴ See the National Champions, Peter Nolan...

development. The fast growing economy has been able to lift hundreds of millions of people out of poverty, however, it has been estimated that still more than 150 million people are living under 1.25 US\$ per day³⁵. At the same time, a class of super rich is expanding in major cities, with at least 65,000 individuals (excluding Hong Kong, Macau and Taiwan) owning assets worth more than 100 million RMB (roughly 16 million US\$) by the end of 2011, and about 1.02 million individuals own assets more than 10 million RMB³⁶. The Gini Co-efficient³⁷ in China surpassed 0.47 in 2010, where 0.40 plus is internationally considered as a dangerous zone for social and political stability. In GDP per capita terms, in 2010 China is ranked as the world's 91st (4,382 US\$), behind Namibia, Belarus and Angola, a typical low-income developing country.

The persistent inequality and poverty problem is associated with the dualistic economic structure of China, that is, a sharp divide between the rural economies and the urban economies. For decades, China's economic growth has been based on a process of transferring what the economists called "the surplus labour" in rural areas to feed the expanding demand of urban industrialization. The divide between the urban and the rural continues to enlarge as the economy grows. In 2010, urban residents earn at least three times of the incomes of rural residents

³⁵ Chinese State Statistics Bureau 2005 estimated that poverty rates fell substantially from 53 percent in 1981 to 2=5 percent in 2005.

³⁶ Hurun Report 2012, <http://www.hurun.net>

³⁷ An economic indicator to measure the extent of income inequality in a society, where 0 denotes absolute equality, and 1 means complete inequality.

(including rural migrant workers living in cities)³⁸. While such process has done a great job in lifting a massive rural population above the poverty line, the established institutional frameworks inherited from Mao's era may serve to enlarge the inequality between the rural and the urban, rather than diminishing it. For example, the 'hukou' institution (户口制度), a system of 'residency permit' based on household registration, restricts the migration of population across regions particularly between urban and rural areas, partly accounts for the inequality. In the Planning Economy era, hukou system allows the state to provide preferential treatment to the industrial workers, bureaucrats, and intellectuals in the cities, creating a huge inequality of social and economic benefits and de facto discrimination against rural population. Such 'household registration' institution becomes hugely problematic as the 'market-based' economic growth requires the flow of cheap labour from rural areas. Those rural migrant workers -- estimated in a number of 229.8 million in 2009 -- who secured employment in cities, are finding themselves difficult to live their urban life, as the hukou institution not only requires the local authority's 'temporary residence permit', but also exclude them from local welfare benefits (housing, schooling and health insurance, social security etc.). Such discrimination policy combined with rocketing-high urban property prices, only exacerbates urban poverty. In recent years, there is a growing concern that the slum districts -- where

³⁸ BBC Report: Inequality in China: rural poverty resists and urban wealth balloons. <http://www.bbc.co.uk/news/business-13945072>

these rural migrant workers live -- are emerging and gradually engulfing the mega-cities in the eastern part of China³⁹.

Regional inequality is another problem. The coastal provinces have the fastest growth rates, with Guangdong, Shanghai, Jiangsu, and Zhejiang leading the country's manufacturing sectors and international trade. Economic development has been led by three major mega-urban clusters, namely the Beijing-Tianjin circle, Shanghai-Nanjing-Hangzhou Triangle (Yangzi River Delta), the Guangzhou-Shenzhen-Hong Kong Triangle (Zhujiang River Delta). A large number of middle class is emerging in these coastal metropolitan areas. And with the rise of middle class, consumption appetite and material culture is rapidly growing. The in-land provinces are generally much less developed with majority rural population where those rural migrant workers in coast cities come from, supplying cheap labour for industrialization in coastal regions. Chinese government initiated development strategy specifically to promote development in in-land provinces ("The Great Development of the West" 西部大开发) since 2000, leading to huge government-led investment on infrastructures in efforts to make these regions accessible and attractive for foreign and domestic investors. One policy of such "go-west" strategy is to force the labour-intensive and low value-added industries migrate

³⁹ There has been a persistent call in Chinese society to eliminate the "hukou" institution and stop treating the rural population as a second-class citizen. However, the CCP's policy avoids the abolishment of "hukou", instead further emphasizes the urbanization and sub-urbanization efforts in rural areas, especially in those in-land provinces, which is designed to make these rural population stay and live urban life in their homeland, with improved social, health and education welfare.

from coast provinces to in-land poverty provinces, where the urbanization process provides local supply of cheap labour.

Chinese leaders believe that the country still needs another ten years (or more) of high-speed growth⁴⁰ in order to sustain the momentum of urbanization and lift hundred of millions of rural population out of poverty. However, China's current growth model, critically dependent on the state-led investment (as well as multinationals' FDI), cheap labour cost, and export-oriented industries, is widely considered as unsustainable in future decades, not only due to the long-term restructuring of global capitalism, but also more urgently due to the environmental and social stability concerns. In recent years, Chinese government attempts to upgrade its economy towards an innovation-based, consumption-oriented economy⁴¹, in order to address the sustainability concern. The CCP systematically revises their grand development strategy by campaigning the ideology of "Sustainable Development" (可持续发展) and "The Perspective of Scientific Development" (科学发展观) since Hu Jintao came into power in 2002. The Twelfth-Five-Year-Plan (2011-2016) detailed a number of economic strategies to enlarge the proportion of

⁴⁰ The growth rate gradually slows down from 10 percent every year since 2005. During the Financial Crisis since 2008, Chinese government made it clear that the economic growth needs to be no less than 8 percent, in order to keep China's unemployment rate running at low levels. Economist estimated that China's growth rate will be around 7 percent in the next five years.

⁴¹ The strategy -- Transform the Economic Growth Model (转变经济发展方式) -- was crystallized in the 17th CCP National Congress in 2007 and was formally recognized as China's economic strategy in the Twelfth-Five-Year-Plan 2011-2016.

domestic consumptions (especially increasing labour incomes, improving social security standards, and promoting urban service economies etc.), as well as to stimulate investments on innovation-driven industries (especially those strategic sectors listed by that State Council such as energy, communication, transportation and defense). Particularly, ICTs and Internet-based service industries, have been emphasized by Chinese government as the strategic sectors that have huge potential to transform China's economic structure towards innovation-based and consumption-oriented economy. At this stage, it remains unclear whether this upgrading strategy will succeed in the next five years in helping China's economic growth become more sustainable. However, it is for sure that this grand strategy will have deep implications for China's future development.

5.2 The World of Taobao: An Evolving Business “Ecosystem”

Taobao starts from a platform for shopping. The company was established by Ma Yun (alias Jack Ma) and his team in Hangzhou city in 2003. Before Taobao, Ma Yun was already an icon of IT entrepreneur in China. He has been successfully running Alibaba.com since 1999⁴², helping domestic manufacturers find foreign procurement contracts and providing service for export industries. Taobao is among Ma’s first attempts to find e-business opportunity in the market of domestic trade. Ma Yun and his Alibaba Group’s strategic turn to the domestic market reflects his vision that the rise of Chinese domestic consumers in the next decades -- the urban middle class -- will reshape the growth model of Chinese economy.

The idea of Taobao was similar to eBay, which is creating a virtual market place and providing intermediary service connecting internet shoppers and sellers. In a fierce competition with eBay’s Chinese subsidiary Eachnet⁴³, Taobao initially adopted free-service strategy, providing all free software tools for sellers and charging no commission

⁴² Alibaba.com has been list in Hong Kong Stock Exchange since 2007, with market capitalization about 1.5 billion USD. Alibaba.com is a member company of the Alibaba Group, which controls a number of major players in China’s Internet business, such as the AliPay, Yahoo China, Ali-Cloud Service etc.

⁴³ For detailed description of the competition between eBay and Taobao, see Chen, Zhang et al. 2007, THE NATURE OF THE EMERGING C2C ELECTRONIC MARKET IN CHINA: A CASE STUDY FROM SOCIAL NETWORK THEROY AND CRM PERSPECTIVES. Proceedings of the 9th International Conference on Social Implications of Computers in Developing Countries, São Paulo, Brazil May 2007, and Ou and Davison 2009 Why eBay lost to TaoBao in China: the glocal advantage, Communications of ACM

fee on transactions. Taobao also differentiated itself from eBay by providing locally-customised tools to cater Chinese internet users' preferences⁴⁴. Examples of such locally customised tools include the instant-message tools (Ali-Wang-Wang), virtual community (She Qu), credit-grade scheme (Xin-Yong-Ping-Ji), and an integrated eschew-based payment system (AliPay). Within a few years, Taobao quickly established itself as the undisputed market leader in Chinese e-shopping sector⁴⁵. In 2008, it is estimated that Taobao occupied 59 percent of Chinese C2C market. In 2010, the platform boasted over 170 million registered users, and an annual transaction volume of 400 billion RMB (roughly 40 billion GBP). According to the National Bureau of Statistics of China (NBSC), China's total retail scale of consumer goods in 2009 is 13,267.84 billion RMB, which means the retailing scale of Taobao is responsible for roughly 0.3 percent of China's total retailing market⁴⁶.

⁴⁴ The sudden success of Taobao in Chinese consumer market has raised serious concerns regarding the abuse of intellectual property by Taobao's individual sellers. It has been reported that some commodities that have been sold on Taobao platform either lack the legal authorization of distribution, or simply hold counterfeit trademarks. These concerns have not only been raised by Taobao's competitors, but also by the Chinese nati In our interview with Taobao, the senior executives of Taobao have relentlessly stressed that the company is committed to fighting with the abuse of intellectual property and counterfeit products, although some observers indicated that Taobao gained substantial initial advantage with its loose restrictions while eBay in China might be more strictly regulating the sellers.

⁴⁵ By saying e-shopping sector, I mean the Customer-to-Customer area (B2C) and Business-to-Customer (B2C) area. Taobao approached the e-shoppers by establishing C2C service first in 2004. However, many of the sellers on Taobao become so successful and quite-large business companies that since 2010, Taobao established a dedicated platform for B2C transactions - Tabao Mall (TMall). Sellers of TMall platform must be government-registered companies, instead of individuals, and held full legal/tax responsibilities for the product they sell.

⁴⁶ This is a rough calculation rather than a rigorous statistical analysis. We are fully aware that the 400 billion RMB annual transaction volume on Taobao platform could include a small proportion of sales occurring between business retailers, which are not counted as part of 'total retail scale of consumer goods' according to the definition of NBSC. In our interviews with Taobao company staff, we are informed

Such a scale makes Taobao the dominant platform in China's internet shopping sector.

"Information Tokens" in "Shopping Mall"

For general visitors, Taobao is a vibrant shopping community, the one-stop place where the experience of entertainment, fashion and bargain are mixed together. The platform imitates a physical shopping mall where lots of people not only do browsing and shopping, but also socialise and entertain in restaurants and coffee shops. In Taobao's virtual shopping mall, the scale is much larger -- millions of people actively visiting hundreds of thousands of shops 24 hours everyday⁴⁷. Taobao catalogue lists twenty-four major market sections: virtual money and ticketing, consumer electronics, household appliance, women's fashion, men's fashion, children's fashion, women's shoes, men's shoes, underwear, luggage and bag, fashion accessories, jewellery and watch, cosmetics and beauty products, mother and baby, furniture and home decoration, household daily consumables, food and health, sport equipment, outdoor and camping, automobile and accessories, toys, stationary, hobbies pets and collection, local life service.

that the Taobao platform does not encourage business-to-business sales and it does not seem reasonable for netpreneurs to buy and resale on the same Taobao platform, because the Alibaba Group has the another dedicated wholesale platform Alibaba.com to help netpreneurs find wholesalers and manufacturers with much lower price.

⁴⁷ The website ranking company Alexa.com placed Taobao.com in the 14th of the world's most popular website, the third in China, behind baidu.com and QQ.com.

Each market section is comprised of eight to ten sub-sections, which further contain increasing commodity categories. For example, the virtual money and ticketing section lists eight sub-sections: mobile-phone credits, online game credits, virtual game gadgets, flight ticket, QQ⁴⁸ special section, online game support, lottery, and travel package deals. Clicking each category leads to a list of shops offering the category of products. Buyers can filter the results by using various criteria such as credit grade, popularity, online seller, recent deals etc. The system may also suggest filters that are most popular at that time. Apart from regular catalogue and search, Taobao actively organises themed market sections -- such as the "Special Offer of the Day", "England Fashion Show", "Group Purchase Special", "Celebrity's Shops", "One Yuan Lucky Strike"⁴⁹ etc -- and advertise these themed-markets on its own homepage (ranked the world's 14th most popular website) or other major media spaces (television commercials, newspapers and magazines, outdoors, websites etc.). In short, Taobao visitors have multiple ways to access the shops, people, and products, either by searching, browsing, following advertisement or subscribing to themed activities.

⁴⁸ QQ is the largest online social interaction and game platform in China. The company that owns QQ is Tencent, listed in Hong Kong Stock Exchange. It starts from an instant messenger tool QQ and evolves into a comprehensive online virtual entertainment platform, covering games, virtual pets, gadgets, ringtone download etc. In 2012, QQ estimated that active members amount to 721 million.

⁴⁹ "One Yuan Lucky Strike", or in Chinese 一元秒杀 "Yi Yuan Miao Sha", is one of the most popular themes in Taobao. It is essentially an activity of "luck draw", in which a large number of buyers rush to buy a particular kind of commodity in a short period of time (in many cases, in seconds) and the system will determine that a few lucky buyers will get the commodity for one yuan. Taobao periodically advertise these themed activities in efforts to stimulate the shopping atmosphere in its community.

Like other Web 2.0 service providers, Taobao platform is critically dependent on individual user's contribution of web content. The web content comes from both sides of sellers and buyers. On seller's side, Taobao provides software tools for building and maintaining online stores. Equipped with ready-made website builders (*Wang Pu*), sellers can select a few webpage models, styles and frameworks, and then supply updated and detailed information about the products or other information they want the buyers to know. Typical tasks of Taobao sellers include writing descriptions, uploading product pictures, setting prices for each product, and answering buyer's enquiries etc. To make their stores more attractive, sellers spend much time in 'decorating' their online pages, sometimes hiring professional website designers.

On buyer's side, users need to supply some personal information, such as postal address, ID number, payment information, product preferences and ratings etc. The platform provides search function and categories to help shoppers navigate in the system. The platform takes records of each registered user's browsing history, and makes recommendations based on user's accumulated viewing/buying history. Also buyers can keep and edit a personal list of stuff they like as they go around the shops, by clicking "adding to my album". These albums are categorised and themed by the buyers and can be made private or public. Those buyers who actively edit and publish their personal "albums" are

generously rewarded with community-status-promotion (Fashion-Talent Badges or Chao Ren Xun Zhang) and shopping coupons⁵⁰.

To encourage the sharing of shopping experience and information among buyers, Taobao's VIP Club has a set of rules to evaluate the contribution of buyers. The rating scheme of VIP status -- ranging from V1 to V6 -- takes into account not only historical shopping volumes, but also the contribution of "albums" in community. Highly ranked VIP members not only get discounts in Taobao stores, but also enjoy a number of other privileges, such as priority customer service, super-fast delivery or refund, and quick response from sellers as complaints from highly ranked VIPs are seriously handled by Taobao. When buyers browse online stores, they can chat with sellers (or the agents of sellers) using Ali-WangWang, make comments of each product or store, bookmark their favourite products, and subscribe to the stores they like. Both buyers and sellers keep a list of contacts in their Ali-Wangwang messenger, enabling them to chat whenever they would like to and develop long-term relationship. Taobao archives the chatting records generated by Ali-Wangwang, and claims a right to investigate these chatting content in cases that disputes occur between buyer and seller or fraud case is reported.

⁵⁰ The dedicated page for buyer-generated information is published in Love.taobao.com. The channel is similar to Youtube or Twitter, where each member has their own tube for publishing and sharing their own albums while they get recommended by the system to those with similar favorites. Buyers subscribe to the channels that fit their tastes. The system's recommendation of products and friends gets more precise as the buyers share more information about their tastes.

Bargain is a common practice in Taobao market. Instead of clicking “buy it now” or “bid” directly, buyers usually use Ali-Wangwang to talk directly with sellers and negotiate a price and specific terms and conditions that both sides are satisfied with (special requirements include delivery time and means, package decorations or other personal preferences). When a negotiated price is agreed, the seller sends a dedicated webpage -- which is automatically generated by store management tools -- to the buyer, who then checks and confirms the agreement. The buyer then either clicks the “buy” button on this dedicated page and goes through the AliPay system to further the transactions, or saves the deal page and comes back later before the deal expires. The sellers are keen to chat and provide additional service for buyers because they want to get a positive feedback. When a deal is finished, both buyers and sellers leave comments on each other’s trade history page. A long trade history, with detailed feedbacks of good points and bad points by the trading party, is regarded as the most important “reputation asset” in Taobao platform.

Trust is the top priority concern in virtual market places. Taobao platform designs a set of schemes and rules to make transparency a principle of practice. For example, each user has a publicly-accessible profile page, which lists key information about this user (username, credit-grade, regions, business sector, recent trades etc.). The extent to which these personal information can be accessible depends on the roles (buyer or

seller) and the user's tolerance of being open. Seller's profile page usually displays information such as username, business certificates, credit grade, location, business sector, and most importantly transaction record. Taobao platform makes it a default rule that each seller's profile displays all transaction histories on the profile page⁵¹. The transaction history gives detailed information such as buyer's username, purchased product, feedback texts, and transaction time and date. Clicking each buyer's username leads to the profile page of the buyer, where most buyers show off their recent purchase with pictures and links, as well as their microblogs and social networks (friends, follows, fans, tubes etc). Most Sellers also leave comments on buyers' profile page so that the general public can know how this particular buyer behaved in previous deals.

To measure credit and reputation, Taobao platform has a scheme to measure credit history of each seller (or buyer) -- Credit Grade (Xin Yong Deng Ji). The index is calculated based on a double-blind feedback rating scheme. When a transaction is finalised, Taobao system sends a questionnaire to both buyer and seller, asking them to give ratings (a scale from 1 to 5 star) to five questions. The feedback rating is

⁵¹ Since trading history is publicly accessible, the risk of online scams can be traced and therefore controlled. For example, one of the most popular scam is to inflate the Credit Grade in a short period of time -- Credit Inflation or *Shua Zhuan*. By creating fake transactions, the credit inflation scam gives the seller an opportunity to upgrade their credit grade level to the "Diamond" in a short period of time. However, this kind of 'illegal' business is easy to detect, because the the transaction record is normally corresponding to the payment information collected by Alipay system, which means those deals without compatible Alipay records are suspicious and subject to Taobao's further investigation.

mandatory, as the system sets a default answer of positive rating of 5-star to each question. Based on the answers, the system adjusts the general credit grade (Xin Yong Deng Ji) and the percent of positive feedback (Hao Ping Lv), which is displayed as the important sign of “reputation” on the top of each user profile page. It is the system’s rule that the raw results will not be seen by the subject individuals under evaluation. The credit grade and trade history subsystem is probably one of the fundamental schemes to ensure Taobao’s transparency principle. As the credit grade and trade history acts as the de facto “trademark” of sellers, Taobao platform has to deal with a large number of disputes and complaints regarding the authenticity of these user-generated information. The company employs thousands of customer service staff working 24/7 to ensure that these disputes and complaints are properly dealt with and the authenticity of these credit and history data is guaranteed.

To ensure a high level of transparency, Taobao system actively collects user-generated data, compute and remix these data in various ways. The credit grade is a good example of using such user-generated data. Another example is that Taobao systems collects and analyses the business performance data of sellers (trade volumes, frequency of orders, price fluctuation, visitor popularity etc.) and makes sense of these data sector by sector. For instance, on each seller’s profile page, three key performance index are required to be displayed publicly: Precision of Description (Miao Shu Xiang Fu), Service Attitudes (Fu Wu Tai Du),

Speed of Delivery (Fa Huo Su Du). Each performance index (a scale of 1 to 5) is calculated based on customer feedback rating and real-time operation data recorded by Taobao system. Moreover, these index are displayed in a graphic scale featured with the position of the benchmark of industrial average (Yu Tong Hang Bi) -- another system-generated index. Similar schemes of data collection and analysis are also applied to the buyer's side.

Taobao employs an army of staff to provide "notarial" service for business accounts. Getting Taobao's official verification and certificates are important for sellers, because to promote sales they need to convince potential customers that they are trustable. Taobao provides various kinds of certificate service, ranging from ID verification, business license verification, credit card acceptance, to the third-party quality check. Once sellers get certified by Taobao (or its external partners), their profile pages will be featured with a particular badge, so that buyers will be informed as soon as they enter the shop. Moreover, Taobao system makes it possible that when buyers search specific products, they can always filter the results to those sellers who have particular Taobao certificates. Table 5.1 lists some examples of certification service that are popular on Taobao platform.





Name	Badge	Meaning
Golden Seller		1. Quality Assurance; 2. Highest Evaluation Credits; 3. Quick Service; 4. 7 Days No Reason Return
Consumer Protection Scheme (CPS)		1. 7 Days Guaranteed No Reason Return; 2. Less than 24 Hours Despatch; 3. No Counterfeit Guarantee; 4. 30 Days Free Repair Service; 5. The Third-Party Quality Check (Optional)
ID and Bank Account Verified		Personal ID checked, Bank Account verified, and Alipay registered
Quality Check Certificate		Product Quality Standard Guaranteed by a third-party.

Table 5-1 A list of Certified Badges on Seller's Profile Page

Connections and Connectivity: Social Relations Matter

On Taobao, there is a strong feeling of social touch. The interviewees, either shoppers, netpreneurs or Taobao staff, have repetitively stressed in their description of experience that the construction of personal relations with someone or some groups online has been one of the most important component of their daily work on Taobao. Several highly successful netpreneurs have confessed in interviews that they developed a particular set of 'technical secrets' to make friends with customers in order to win their heart. These 'technical secrets' are tacit knowledge gained in practice, which take a long time to learn, and the content of

such knowledge ranges from 'the language style' to various ways of detecting customer needs. "Heart worth much more than money", one of the sellers said, "heart brings confidence, positive review, and mouth-to-mouth reputation, because on taobao bad review flushes over-a-night and there is really nowhere to hide". Some shoppers reported that the shopping on taobao is a different experience from shopping in physical stores. "it's more like meeting with old friends, the sellers remember my preference, and the price is often negotiable, when there is a problem, I just speak out and they give feedbacks and solutions instantly".

Such social element is not only present in relations between shoppers and sellers, but also reflected in various dynamic communities of netpreneurs and shopping experts. During fieldwork, I find many sellers and buyers are actively participating in voluntary online content-writing and editing activities, contributing and exchanging their knowledge on certain commodities or business operations and sharing them with 'online friends' for free. For sellers, the benefits of contributing content on Taobao reach far more than exhibiting their commodities and making them accessible for a national-scale of shoppers. They seem to value both commercial benefits as well as the social benefits by participating in online communities. For example, in the sector of fashion clothes, there are several virtual communities, where individuals are constantly organised to share updated knowledge and information on topics such as fashion trend analysis, fabric choice and sourcing, manufacturer

management etc. These kinds of knowledge and information are periodically edited by volunteers in the form of web magazines, published on Taobao platform with open access, and distributed by social networking services. Sometimes, these voluntary efforts are designed in the form of fashion magazines or catalogues targeted at particular groups of fashion shoppers. These free fashion magazines and catalogues offer video, pictures, reviews and analysis followed by URL linkages to specific Taobao stores that are currently selling those products⁵².

For these sellers, Taobao is the media space for them to find their roles, contribute their social efforts and reap both commercial and social benefits. These kinds of activities share several key features with wikipedia and open source software movement. Both have a large scale, dynamic and complex social relations between voluntary contributors, editors, and offer free access to a large population of audience. A particular feature of Taobao is that many of these voluntary projects are intertwined with various mechanisms of commercial advertising, which resembles those internet marketing strategies such as SEO (search engine optimization) and SEM (search engine marketing) developed from Google's advertising mechanisms.

⁵² There is a diversity of incentives to explain why volunteers are participating. Sometimes, the store owners are directly participating in the editing of such magazines, because it means advertising opportunities. Sometimes these volunteers are shopping experts who want to share their knowledge with other shoppers. And the fame they gained from these magazines will help improve their own business either as direct sellers or as shopping consultants.

Advertising: Commoditizing Connections and Flows

As a company, Taobao makes profits mainly by charging search-related advertising fees. With most of its service free of charge, the company has a search-advertising service available for store operators ('Zhi Tong Che', translated as the Express Train Service), providing customised web advertising opportunities for netpreneurs⁵³. Imitating Google's strategy, Taobao has been trying to gather as much websites as possible under its Taobao Advertising Alliance (TAA), in efforts to maximise the range of web spaces that are available for Taobao ads. Taobao's ad service mechanism is very similar to Google's AdWords and AdSense. The Express Train Service (ETS) is Taobao's version of "AdWords", enabling netpreneurs and other business owners to buy key words in search results as well as featured ad spaces on web pages, with auctioned prices (pay-per-click, PPC). TAA is similar to Google's AdSense, providing an advertising market platform where ad space providers can customise the ad content and forms while those ad buyers (mainly netpreneurs) offer competitive commission rates to attract the best ad providers. In short, Taobao, aspiring to be not only a shopping mall but also a leading internet advertising company, has been ambitious

⁵³ Like Google, the keyword search results on taobao platform have two rankings for display, one is the paid-for-search result whose position is auctioned by bidders, the other is the organic page ranking calculated on several key measurements such as relevancy, page views, store reputation, transaction volume etc.

and aggressive in developing the new media space in China, making itself a direct competitor not only with eBay, but rather with search engines giants such as Google, Baidu, and Yahoo⁵⁴, and those new media giants such as Facebook, Tweeter, and Youtube⁵⁵.

For netpreneurs whose daily work is maintenance of Taobao stores, there are at least three categories of work they need to focus on with the support of taobao's software service: namely, store & commodity management, marketing tactics, and customer relations. The store & commodity management software resembles an enterprise management system, which involves typical tasks of commodity data input and maintenance, checking stock level, arranging supply and delivery, and managing accounts and payment. Working with the store management system is probably the most labour-intensive work, requiring the daily writing and editing work on detailed – often in standardised format – descriptions of each commodity, accompanied by high-specification pictures and other related information. Taobao offered a few standardised store models with different styles and settings, while the

⁵⁴ In a series of complex financial deals, Alibaba Group, Taobao's parent company, has successfully acquired Yahoo China in 2008, at the cost of 40 percent of the Group shares controlled by Yahoo. For taobao, the acquisition of Yahoo's cutting-edge search technology has critically strengthened its leading position in Chinese internet searching market, which forms the fundamental basis for the company's advertising strategy.

⁵⁵ In China, due to the widely-known media regulation policies, these new media giants have their Chinese local copycats. For example, Renren.com and Kaixin.com are Chinese versions of Facebook, while Weibo.com is a counterpart of Tweeter, and Youku offers similar video-sharing service like Youtube. This situation is probably good for Taobao's ambitious strategy, because comparing to those international giants, the whole Alibaba Group is in a better position with enough financial capacity to control these local media service providers, or make them to build collaborative relations with Taobao.

platform also allows the third party developers to develop and sell new models (either at charged price or for free). The making of descriptions and pictures (as well as artistic web page designs) actually requires very tacit and specialised knowledge, which can be gradually acquired by experience. Some of these skills (such as artistic web design and pictures) can also be sourced from professional service providers. Also, the Ali-Software company, a member of Alibaba Group, provides enhanced software solutions to satisfy Taobao business' specific requirements. Most of these software are free for Taobao sellers and delivered in cloud-computing style.

Marketing is a key skill for store operators. Marketing tactics in Taobao essentially involve the techniques of SEO (search engine optimisation), which means tagging and bidding search words. On daily basis, store operators need to build up an optimal portfolio of ads displaying channels within a budget limit. Marketing opportunities are both inside and outside Taobao domain. Inside Taobao (and Yahoo! China), sellers actively deploy SEM techniques in efforts to make their stores more accessible than competitors in the search results. They can directly bid for a specific search token (search keyword) via ETS, so that search results will be topped by highest bidder's product descriptions and pictures. Alternatively, sellers may find ways to 'optimise' product's descriptors and tags so that their product will be "naturally" ranked high in the search results. TAA platform provides the opportunity of advertising outside

Taobao domain. On TAA platform, sellers hunt good advertising opportunities (hot searches in Baidu or Google, popular websites, blogs, videos etc.), negotiate hiring prices or commission rates with the webspace supplier, and ensure that there are stable page-visits (PV) from potential customers. The skills of SEO and search token identification has been regarded as highly valuable skills in Taobao's e-business circles, as the deep knowledge of using Taobao's search engines and a good understanding of consumer trends are required.

The work of customer relation management involves maintenance of customer data and transaction history, as well as proactive communications with customers. It covers rich communications mainly via Taobao's instant messaging tools (Ali-Wangwang) with potential customers or old customers. The flexibility of making deals and the use of languages in such communications are essential skills in order to build trust relations with customers and bring good deals. Taobao has been proud of its customer service for buyers, because it believes that a direct seller-to-buyer style of communication may bring much better customer experience than a centralised customer call centre.

Monitoring and manipulating internet traffic is one of the core businesses of Taobao. Taobao platform tracks details of user's web behaviour and records such data in databases for marketing analytics. The bills sent

from Taobao to store owners (or netpreneurs) are calculated based on several key measurements of web traffic, notably the daily page-view (PV) and the unique-view (UV)⁵⁶. Such service charge is only applicable when netpreneurs subscribe to certain search tokens or web page ads space (ETS or TAA service), generating PVs/UVs into his/her retailing stores. The natural visit by web users, which means those visits not generated by ads clicking or keyword ranking, are not accounted in bills. Similarly, websites outside Taobao displaying Taobao-distributed advertisements get revenues from Taobao based on the calculation of PV and UV channelled by these websites. Even individuals, via subscribing to 'TaobaoKer' (or "taobao friends") service on TAA platform, are able to let their personal spaces for Taobao ads, and get paid by Taobao sellers. For these advertising space rent or let, taobao charge fees on both sides.

Moreover, these key measurements of web traffic are important criteria for evaluating the work of Taobao's business support staff. PV and UV, particularly, have been widely used as a part of KPIs⁵⁷ (key performance indicators) for evaluating the performance of many Taobao staff. A key part of Taobao's corporate culture is performance-oriented. High achievers are generously rewarded and promoted while bottom

⁵⁶ Detailed definition of PV, UV and other web analytics techniques, please see Google's Analytics Help document:

<http://www.google.com/support/analytics/bin/answer.py?answer=57164>

⁵⁷ The management structure of taobao company is another major area of investigation during our fieldwork. We briefly mention KPI here to illustrate the key mechanism of taobao platform, and will talk about the details of KPI and management of taobao company in another fieldwork report.

performance staff risk being sacked. Taobao staff are working very hard to achieve their own annual KPIs. Within Taobao, the front-office customer-facing teams are generally divided into specific market-section-focused teams in order to provide customised service for netpreneurs. And the calculation of PV and UV for KPIs is based on the average of a group of Taobao stores that the support staff is responsible for. So the staff's work is directed towards the collective development of his/her allocated stores. To promote PV and UV, the section-focused teams need to work simultaneously in at least three areas: to creatively organise and maintain themed activities (business campaigns), to maximise the visibility of commodities to shoppers (marketing), and to help netpreneurs improve their online store business (e-commerce management). By monitoring internet traffic, they can quickly spot those highly successful netpreneurs as well as those having great growth potential. For example, the teams usually set a benchmark on growth potential, measured by the ratio of transaction volume to UV (on daily basis) – they call this ratio 'the percentage of conversion' (PC), measuring how many percentage of people are willing to buy when they visit the store. If a particular store has a high level of PV/UV but lower than average PC, it means that the store may have some management problems because they are obviously attractive but fail to make deals. In such situation, what they normally do is to talk to the owners directly and make sure he/she has the necessary knowledge and skills to improve the

PC. So the work of these Taobao support staff⁵⁸ (they call themselves 'Xiao Er', meaning "servant" or "waiter/waitress", a taobao jargon approximately equivalent to "butlers" in English), involves a strong element of proactive consulting service, as their experience of overseeing the growth of many successful Taobao stores help them identify the specific problems and give solutions to those netpreneurs who are developing business in Taobao. Apart from consulting service, these support staff have the capability of mobilising key 'resources' to help netpreneurs to promote their business performance. Such key 'resources' can range from advertising discounts to an exclusive list of quality suppliers. Since the KPIs are linked with the performance of store they take responsibility of, the staff always need to work like a management consultant, a knowledge/innovation disseminator, an intermediary agent for inter-firm collaboration, and sometimes an investment banker -- a support role that is hard to define but most of them are happy to call themselves the "babysitter".

In 2010, I spent two weeks working side by side with these Taobao "babysitters". My role as external researcher was introduced by two

⁵⁸ The role of these taobao 'xiao er' has clear distinctions from what we typically know as salesperson in search-engine or other web 2.0 companies. Unlike the salesperson in Google or Baidu, whose major work involves the selling of keywords in search results, taobao 'xiao er' is more concerned with the performance of their customers' online business, rather than whether their customers are willing to pay for more advertising or not. 'Xiao Er' is jargon borrowed from Chinese literature of "Kungfu/martial arts novels", which originally refers to the those servants working in restaurants and hotels who can provide comprehensive and quality service for customers. A certain degree of similarity can be drawn to be compared with what the English termed as "the Butler".

managers who worked there (Mr. Dou and Mr. Gan). In my direct experience, their daily jobs seemed to be obsessively involved with various kinds of team meetings and organising business forums. Most of the time, I stayed in the open plan offices where two major departments are located: the Platform Business Service Department (PBSD) and the Business Support Department (BSD). The PBSD deals with the platform-based service integration, which means that they deal with the third-party service providers and bring their business service (apps) into Taobao platform. The BSD teams focus on specific market sections and advise their business customers to improve their performance on markets -- in many cases, by persuading them to learn and master Taobao's advertising tools. Both departments have more than 100 permanent staff and a number of specific teams looking after several target groups of customers of high importance, and sometimes they seek extra human resources by hiring dozens of summer interns from universities.

When I asked them how they collaborated with their customers and how they achieved success, I always got the similar message that they have the necessary 'resources' or are capable of channeling resources which proved to be valuable for business customers. While not sure about the exact meaning of 'resource', I understood the word in context as something about getting online exposure and more the Internet traffic and eventually sales promotion, such as the opportunities of placing ads on shopper-mostly-visited pages. Taobao "babysitters" actively utilise

online forums and off-line e-business workshops to attract business customers to join their “activities”(huo dong) for the benefits of potential ‘resources’, which promise to provide more opportunities of exposure to online shoppers, in addition to other traditional marketing methods such as bidding keywords and paying search engines⁵⁹.

These initiatives (huo dong) usually take the form of “themed activities” which are advertised -- or even highlighted -- in those “hot” pages that mass consumers would most likely visit (like the Taobao.com homepage). Whether these huo dong can be advertised in high profile depends further on the support from Taobao’s departmental directors or senior management. For example, one of the most successful ‘themed activities’ in recent years is the “One Yuan Lucky Strike” (一元秒杀) theme which works like a lottery draw during a period of time when dozens of lucky buyers will get the price for only one yuan. For sellers, this theme provides a solution to quickly expose their products to millions of potential buyers in a short period of time, and thus proves very effective in advertising their T-shops. This activity proved to be very successful and the Taobao management decided to advertise this activity on the homepage for several months. In order to grab a chance to be part of the scheme, those qualified sellers line up a long queue to be selected into the activity, and most of the time, it is often up to the

⁵⁹ While it is possible that sellers can join these advertising schemes and increase their internet traffic without paying Taobao’s search engine for advertising fees, it is normally a default rule that the subscription of Taobao’s advertising products serves as the priori condition for joining various advertising schemes.

Taobao staff's personal discretion to decide who can get the opportunity or not⁶⁰. In order to generate such "resources", Taobao teams work in very strong entrepreneurial spirits, which are constantly seeking creative ways to trade their "resources" with other teams in exchange for more "traffic volume" (PVs and UVs) that generate revenues for their customers.

New Professions based Information Tokens

Since its inception, Taobao has evolved into a vibrant business community. As the market size rapidly grows up, new roles and industries emerged. Many of these new roles are related to the peripheral support for conducting retailing business or improving shopping experience. For example, those photographers with special skills of taking "Taobao-style" pictures often operate good business on Taobao community, since high-definition photograph with detailed illustration is a critical part of online product display, and always attracts more attention (clicks) than less good-looking pictures. Many professional photographers either get hired internally by Taobao sellers' companies or become an independent contractor maintaining a

⁶⁰ The issue that Taobao "Xiao Er"'s personal discretion could heavily affect Taobao sellers' business performance has been openly discussed in recent years in mainstream Chinese e-business media. Naturally, many sellers and journalists expressed that concern that corruptive relations between Taobao staff and small groups of sellers are seriously damaging the "open" and "trustworthy" culture of Taobao's e-business circle. Taobao company remains low profile on these concerns and replied that the company is taking the issue of business integrity and anti-corruption seriously by closely over-looking its own staff.

workshop and advertising in Taobao's media space. Textual description⁶¹ and communication (including Aliwangwang chat) also contains much tacit knowledge (colours, highlights, tones and manners, styles etc.), which can only be improved by long-term Taobao experience. Various training programs of communication and writing skills are popular in Taobao. Some experienced Taobao sellers gradually become full-time or part-time trainers for teaching these skills. Teaching and training sessions are sometimes organised by "Taobao University"⁶², either online or offline, and sometimes organised by a group of veteran Taobao businessmen⁶³.

Apart from photographer and lecturers, fashion model is another professional role in Taobao that has huge demand from sellers. Since

⁶¹ Taobao's online tutorials contain many techniques for making a good textual description. By "good", I mean those texts that are able attract maximum internet visitors through Taobao's search engine. Also, sellers often need to read Taobao's professional bloggers to know the recent shopping trends, as these trends could be highly associated with shopper's search keywords. The earlier the sellers use these keywords in their description, the lower price they would get when bidding for them in system. Some of these trends can also be learnt from using Taobao's premium business data analytics.

⁶² Taobao University (daxue.taobao.com) is a subsidiary created in 2007 by Taobao company, providing training on various subjects of e-Business management and Taobao technology. Lectures are recruited both on part-time and full-time based. Most part-time lecturers are themselves successful entrepreneurs in Taobao community, and actively maintaining shops in Taobao system. Graduates will be awarded a certificate, providing the level of skills in e-business. Some of graduates become employees of companies operating in Taobao, some others become netpreneurs.

⁶³ An typical example is Shanghai Weiya Club (www.weiyaclub.com). The club is organized by leading Taobao lecturers (also bloggers). It holds annual conferences and workshops on various issues of managing e-business. Since the club is self-organized and hence independent of Taobao company, its views are highly respected by the e-business community. Shanghai Weiya maintains blogs which often share industrial news and case studies of successful e-business startups. In Taobao world, the club assumes the roles of "Tech-Crunch" in Silicon Valley and the roles of "World Economic Forum" in world economy,

2009, Taobao maintained a dedicated channel for these models (in Taobao, they are widely called as “MaDou”, or “Miss Tao”) to display their profile and professional résumé (mm.taobao.com). The purpose of the channel is to create a new market place where Taobao sellers find appropriate models for displaying their products. Most of these fashion models have years of experience as buyers (or sellers) in Taobao. They are very familiar with Taobao community’s social environment including codes of conducting business. Many of them are not from professional training background, but instead start from displaying their own artistic photos in their own blogs and get famous in internet. Some successful models have affiliated workshops while others keep stable collaborative relations with certain photographers and designers. To become a ‘glamorous celebrity’ or a fashion icon is the way they conduct their business in Taobao’s advertising industry.

Such an appetite for becoming ‘celebrity’ is not confined in the model and photography industry. To take advantage of the immense media resources available in Taobao platform, many businessmen have their own “public relation” strategy. Some set up their own video or blog channels and broadcast entertainment content that might be attractive for general public. Some use blogs to share their personal stories of how to become successful in Taobao. Some others practice citizen journalism and become volunteer reporters to write about recent events, new products, and business news taking place in taobao community. When I

stayed in Hangzhou city and tried to establish good relationship with Taobao staff and netpreneurs, I was often recommended to follow and read some Taobao “celebrity’s” blogs, or attend their self-organized conferences/workshops. It seemed to me that these blogs and celebrity’s activities are very important for their social communications, because their media contents serve as the “public topic” for these people to communicate and develop a sense of “common-identity” in Taobao’s e-business community.

Reputation and fame brings not only friends and wider-scale social recognition, but also - more importantly -- the Internet traffic (in Taobao jargon “Liu Liang”, meaning “flow rate”). Internet traffic, measured by PV and UV, is the life-blood of taobao shops (and perhaps all internet industries). It becomes no surprise that those leading voices in taobao community (either fashion models, opinion leaders, entertainers, or guerrilla journalists) are actively involved in all kinds of advertising business: models display pictures featured with sellers’ brands, opinion leaders share knowledge and introduce “success models” with vivid case stories, entertainers are thankful for the sponsors, and guerrilla journalists gossip some celebrities find new fashionable gadgets -- which are available in taobao shops with just a few clicks away.

From Connections to Connectivity: Taobao's Strategic Chang

“Eventually, we become an utility company in e-commerce world, we specialise in supplying ‘water’, ‘electricity’, and ‘gas’ for e-commerce companies.”

-- A Strategy Manager, Alibaba Group

Since 2009, Taobao company began to implement what it branded as “the big taobao” strategy (大淘宝战略), aiming to consolidate its current service architecture and make the system an “open” platform for external partners. A central task of this strategy is to publish a set of technology standards (programming language, API library, SDK etc.)⁶⁴ and a centralised application market. The new Taobao technology standards enable external partners to quickly develop applications (apps) that are compatible with Taobao system. The centralised application market (“fuwu”, fuwu.taobao.com) is the place where external partners deploy apps and make them available for customers. Apps are stored and operated in Alibaba’s cloud (Ali-Cloud-Computing), and therefore are fully integrated into Taobao’s current service architecture.

With standardised technology interface, developers are able to combine Toabao’s sources codes and data with their own specialities, and deliver innovative service in a manner of SaaS (Software-As-A-Service).

⁶⁴ Details see open.taobao.com

Following the open strategy of those internet platform giants like Google and Apple, Taobao aims to nurture a vibrant community of developers and the-third-party service providers, so that users have the capacity to enrich and customise their own experience in Taobao systems.

There are generally two categories of apps in Taobao's fuwu market: for buyers and for sellers. Apps for sellers provide enhanced functions for managing daily operations of online shops and analysing customer's shopping behaviour, while apps for buyers provide rich experience of shopping guide, credits and discounts or other service. Apps are also available for mobile devices. Service providers come from a wide range of background industries. Some are management or accounting software companies, while some others are specialised in e-business consulting or data analytics techniques. Still other developers come from the background of marketing&SEO consultants, web designers, voucher&discount dealers, specialised quality control agency (QC), and BPO (Business Process Outsourcing) providers etc. To ensure a high standard of service quality, Taobao company quarterly assesses the service quality of the third-party providers -- with specified standards customised to each market section -- and publish the assessment results to the public.

With such software service architecture, Taobao is set to become the infrastructure service provider for e-commerce companies, particularly

SMEs. This strategic turn means that Taobao's service actually stretches outside the Taobao.com domain and becomes an open-end network of e-commerce process. To the extent that such network of processes could potentially dominate Chinese e-commerce industry and present a common industrial standard of e-commerce, Taobao is ambitious to be the maker of industrial standards. Jack Ma had a famous claim by paying tribute to Intel: "I dream one day when every e-commerce company runs Taobao-Inside."

5.3 Furniture Manufacturing and e-Commerce -- A Rural Development Story

Dongfeng (东风村) is a small village located in the northern part of Jiangsu Province with about 1,200 households. Supervised by the township government of Shaji and the municipality of Xuzhou, the village is a typical Chinese peasant community with the majority of its population (roughly 5,000) involved in traditional agricultural production, such as growing crops, raising and herding cattle etc. Jiangsu Province, bordering Shanghai along the east coast, is among the most affluent provinces in China. However, it has a sharp regional economic divide. The southern part hosts the country's most dynamic manufacturing clusters which economically integrates with Shanghai and the northern part of Zhejiang Province -- the so-called Sunan Industrial District in the Changjiang-River-Delta Economic Zone (CRDEZ, 长三角经济区)⁶⁵, while the northern part, separated by Changjiang River (alias Yangzi-River), historically lacks strong economic connections with the south and is lagging behind in terms of economic performance. Dongfeng is located in the heart of northern part. For these local residents, migrating to

⁶⁵ CRDEZ, alias Yangzi-River Delta, together with Pear-River-Delta, is widely considered as China's major economic engines, accounting for the majority of Chinese industrial production and export.

southern cities to find employment seems to be a more reasonable choice than staying at home and growing crops⁶⁶.

Start-up at Home

In 2007, several young local farmers started producing and selling wooden furniture using Taobao's e-commerce platform. Three years later, over three hundred Taobao-registered 'net-shops' (T-Shop) were created in the village. These villager entrepreneurs quickly capitalised Taobao's e-commerce platform to break into the ready-to-made furniture industry and collectively achieved a sizeable scale of manufacturing. According to the local government official in Shaji, in 2010 the overall annual revenue of furniture-making T-shops of the town amount to over 50 million Yuan (around 8 million US\$).

To illustrate the scale of furniture business in Dongfeng, I have a list of regions with furniture sector ranked by Taobao revenues⁶⁷ (Figure 5-1).

⁶⁶ Under China's rural Household Responsibility System, each registered family (hukou) gets an allocated piece of land for production. The ownership of land belongs to the state, and rural families technically work on the land based on a lease with the state. According to the original HRS design, rural families need to pay fixed rents for using the land, what Chinese government termed as the "rural tax" (农业税). Since early 2000s, many provincial governments including Jiangsu and Zhejiang voluntarily abandon the 'rural tax' to alleviate rural family's burdens (减轻农民负担). In 2004, Chinese central government officially declared the abolishment of 'rural tax' in national scale. Nevertheless, the earnings from growing crops are still very limited for rural families because the piece of land available for each family is so small that it can only support the basic livelihood. Rural poverty problem remains one of the greatest concerns for Chinese leaders for decades as it indicates the deep structural problems on the relations between current Chinese economic institutions, urban development and rural development.

⁶⁷ Data comes from Taobao's open data service: shu.taobao.com

Dongfeng village is located within Xuzhou municipality, which is listed among the top five regions in terms of furniture sector in China. Comparing to metropolitan cities such as Shanghai, Beijing or Hangzhou, Xuzhou is a lagged-behind region (about one tenth of Shanghai's GDP) without a history of large scale furniture manufacturing. However, Taobao's data shows that Xuzhou accounts for 3 percent of total furniture online sales. Most of the sales come from this small village of Dongfeng.

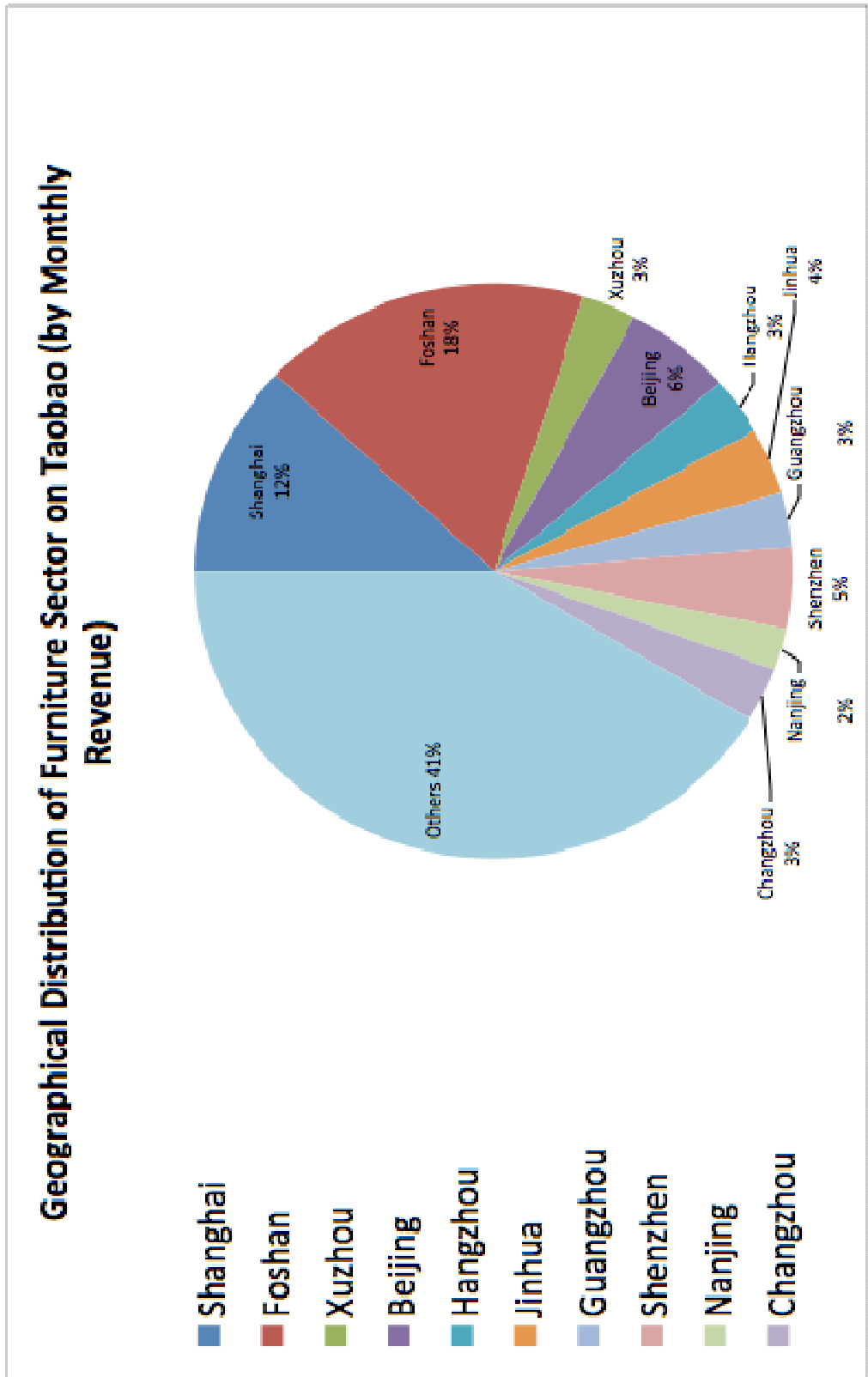


Figure 5-1 Geographical distribution of furniture Sector on Taobao 2010 (Data source: Shu.taobao.com)

When I first visited the village in 2010, I was repeatedly referred to a number of key local entrepreneurial leaders, and Sun Han was one of them. Sun Han, a 27-years old young man, started the first local furniture business in 2007. After graduating from a college in a nearby city (XuZhou), Sun Han spent several years in a state-owned telecommunication company (China Mobile) in Xuzhou city. Like millions of other contemporary Chinese youth, he aspires to make a success by setting up his own business. Years of urban life experience made him familiar with popular consumer brands, and IKEA was one of his favourites.

During his urban life, he found that many young Chinese urban consumers favoured the ready-to-assemble style furniture like IKEA, whose price is too high for them. While working in the telecommunication company, he discovered that Taobao as a C2C market is probably the best way for him to start a business -- a computer with broadband would make business running from scratch. So he developed a business idea which is to sell ready-made furniture over Taobao platforms, with affordable price for ordinary Chinese youths. In interviews, Sun Han mentioned that he developed the idea when he visited some furniture exhibitions in Shanghai as some of the design ideas are very easy to “copy” and “re-produce”. In 2007, he quitted his job and returned home for his first experiment. He said the salary of his urban jobs are very low in comparison to the rising living cost, and he developed this belief that

internet is a magic place for entrepreneurial success, and he said Taobao's founder Ma Yun (Jack Ma)⁶⁸ inspired his passion of entrepreneurship in many ways.

The first meeting with Sun Han was arranged by the local party secretary, who introduced me as an expert of IT and e-commerce. I met him and his local friends -- who are also furniture business owners -- in the government building of Shaji town. I found him a very shy young man, who avoids direct eye contacts while we talked to each other. He expressed his points in short sentences and sometimes had a polite smile to his audience. I understand the smile as a gesture of expressing apology because of his clumsiness in speaking. I can also sense this formality in communication with him, because the talk was made in a local government's office where local party secretaries were intermittently talking about town's recent development and quoting Sun Han's success as a testament of their positive efforts.

⁶⁸ Ma Yun is properly one of the most popular icons in contemporary China. For many Chinese youths, Ma Yun is equivalent to the status of a "rock star". In less than a decade, he turned himself from a pedicab driver in Hangzhou to the most successful entrepreneur in China, running a worldwide respectable internet company. Moreover, Ma Yun has a talent for making speech and he loves to share his ideas, reflections and life experience with the general public. In fact, his speech becomes so popular that it becomes a business itself and he has a PR team to operate presentation tours around the country. Unlike most successful Chinese businessmen, Ma Yun speaks fluent English, making him the rare Chinese business star in western media. The Economist, a weekly news journal, called him the "king" of Chinese e-commerce. It is probably because of his preaching efforts on the vision of doing business with Internet that many young Chinese began to regard Internet and e-commerce as their chance of success in future.

So I went to Sun Han's workshop directly for the second visit. The second meeting was much more relaxed with him telling a lot of his personal stories. He seemed to be very interested in things related to computer technology, and he mentioned since his college years, he spent a lot of time with his computer and surfing the Internet. Even when we are talking to each other, he never completely ignored his screens and intermittently checked and typed information in his computer. His company had a very large courtyard surrounded by manufacturing workshops and office houses. His office is located in a corner of the courtyard, where his Taobao sales team is based. The sales team had seven or eight young employees, most of whom are teenagers from local village or nearby places and each one of them is equipped with a computer and a shared printer. About ten to fifteen carpenters and timber workers are working in the manufacturing workshops on the other side of the courtyard. Sitting in his office, Sun Han admitted that he started the business because the idea was simple and required few financial investment, however, he didn't expect such a fast speed of growth during last three years. Also working and living at home is a huge advantage -- he doesn't need to worry about basic living cost as his family has a piece of land which provides basic financial security, unlike living in the cities where he must earn his salary to pay for house rents and living cost.

I was a bit surprised to find that Sun Han, albeit a bit shy and awkward in speaking, was actually thinking about his own business ideas very

logically and strategically. He told me that he believed the business is feasible because he can control the price at a low level while ensuring an IKEA standard of quality. His confidence came from two aspects of facts that he observed from his life experience: 1) The IKEA model of furniture retail is widely welcomed by Chinese youngsters but few domestic manufactures have yet to offer similar products⁶⁹; 2) There is a commercial forest near Dongfeng -- a possible source for timber materials at bargain price and historically the timber materials have to sold to the southern cities where industrial demand are located; 3) for furniture designs, he manages to find many free copies by searching in Internet. In 2007, Sun Han managed to hire a simple timber machine, registered his first Taobao store and began to sell ready-made furniture. The first product he tried to sell is computer table, he managed to find design diagrams from the internet and manufactured structural parts using the machine he hired from a nearby town. The business went surprisingly well and grew up quickly. In 2009, Sun Han's company had a turnover of three million yuan, making him the richest person -- and the youngest -- in the town.

The Gossip Travels

⁶⁹ Most established Chinese furniture makers are focusing on the high-end furniture market, which comes with the whole-piece, standardized design and mass-produced models with little alterations. Strangely enough, these kinds of furniture products are priced much higher than ready-to-made or do-it-yourself (DIY) ones, and for the most of time, dominates Chinese furniture market. The IKEA model of furniture is only a recent phenomenon and mostly has its customers among urban young white-collars.

Sun Han's success story quickly becomes an unusual gossip among the locals. The local residents, most of them know Sun Han from childhood, simply took it as a strange thing because the new rich man seldom leaves his house or computer in daytime. Soon those young people all rush to Sun Han's home and look for secrets. Among the first followers are his closest friends and neighbours. Many of them initially registered T-shops and began to sell furnitures even though they didn't have the facility to produce. With the help of Sun Han, they quickly mastered the techniques of working with taobao technology. Some of his neighbours initially worked for him in his sales team. When they set-up their own T-shops and began to sell furniture online, many of them went to Sun Han's warehouse and purchased the piece before sending it away. The transaction between Sun Han and his fellow locals took very simple forms as they only need to register their names as well as product/quantity each time they came to collect products -- settlement occurs in the end of each month or sometimes each week. Surprisingly, Sun Han was actually happy to see his fellow neighbours to catch up on tabao. I suspected part of the reason is that they substantially helped him promote the online sales.

I raised the question to Sun Han several times just to know clearly his attitudes towards competition from his fellow friends and neighbours. He said the Taobao market size is immense and is still growing so quickly that he wouldn't mind his fellow neighbour's share of it. Later I heard

from local party officials that initially Sun Han was actually a bit concerned about his neighbour's free-ride because he spent so much time in teaching and training his fellow neighbours and received few financial return from them. And the local party officials said they tried to convince Sun Han that teaching and training his neighbours is a good thing and they also lobbied the local government to backup Sun Han's business plans, highlighting the fact that he was actively training the locals to use e-commerce skills for entrepreneurial purpose. Outside Sun Han's sales team office there is a a display board which reads: "The Communist Youth League's e-Business Skills Training Centre, Suining County". The local party officials explained that the display board is awarded by the county government to show their support for Sun Han's e-business training initiative. I understand this symbol of government's blessing could help Sun Han's business in certain ways.

Most of these young followers had similar background: aged between 20-30, received moderate education (most junior/high school), and many of them had urban experience for studying or working (rural migrant workers). As the business on Taobao quickly grew up, they gradually involved themselves into Sun Han's business vision: to become successful ready-made furniture suppliers in Taobao. The close friends, and those who had working experience with Sun Han, quickly established themselves as local 'opinion leaders', actively disseminating ideas and persuading people to follow their examples of success.

These young people first learned skills from their friends or relatives, and then went back home to turn the whole family into a manufacturing workshop. Like other typical Chinese rural families, they live in big families -- married brothers live in neighbourhood with independent houses while married daughters live with husband's families. Each house has two or three floors with an antechamber and a spacious backyard. Many local families transformed the antechamber into warehouse, stocking all finished furnitures, while changing the backyard into manufacturing workshops. The second floor or the third floor are designed as the offices for the sales and marketing teams equipped with computers and printers, where sisters and wives may offer help hands.

As villagers normally live with agricultural products, they don't have any formal jobs or employment income. That makes it easy to turn the whole family into a manufacturing workshop. Many of the young people who are rural migrant workers and have jobs in southern cities come back home and become an entrepreneur. By working on Taobao and following Sun Han's established business model, many of them earned incomes at home that are much greater than their working salaries in the cities.

The Furniture Cluster In-Making

In a few years, the village has quickly turned itself into a cluster of furniture business, hosting more than 500 T-shops⁷⁰ and 83 manufacturing workshops in a square mile area. The division of labour between these families gradually specialises into specific areas as the collective scale grows up. The number of logistical companies increased from 1 to 15 in four years, each offering differentiated prices and service types, which are customised to the specific requirements of furniture business. Various kinds of specialised manufacturers begin to emerge, since some families began to purchase fine machines and employ professional workers from other regions. Some families specialise in material sourcing, supplying metallic materials or timber materials not only from local forests but also from foreign forests (mainly from Russia). The local entrepreneurs said that in recent years, the cost of conducting furniture business has been substantially lowered down due to the local availability of timber materials and business support service.

Logistic companies find local family agents, who established long-term contracts with much lower price with local clients. The material sourcing families managed to order in a large volume of materials, because they have a stable group of customers who buy a stable amount of materials periodically. It has been said that most of these supply deals do not have formal contracts between two parties. Sometimes, an oral notice

⁷⁰ The exact number of T-shops is difficult to track because many local families registered more than one T-shops.

between these business partners are quite enough for making business decisions.

Summary of Dongfeng Furniture Cluster			
Types of Enterprise		Shaji	Dongfeng
Taobao Netshop		1030	512
Manufacturer		162	83
Manufacturer+Netshop		152	75
Material Supplier	Wooden materials	8	6
	Metal materials	5	4
Logistics		21	15
IT Service		1	0
Banking & Finance		2	0

Table 5-2 A summary of Dongfeng furniture business cluster in 2011

Liu's local experience

Mr. Liu is among the most successful entrepreneurs in the village. He is a local resident with the whole family living in the Dongfeng village, about ten years older than Sun Han. In 1995, he graduated with a degree of food engineering from an university in Lianyugang city not far from his hometown. After the graduation, he joined the Dadi Group in Xuzhou city, a State-owned-Enterprise (SoE) producing soya bean products (mainly soya milk and dairy). He said he was pretty happy when he got the job, because he thought he was going to live in the cities and become an urban resident. The company went down in 1998 during the Asian financial crisis, and was acquired by another local competitor. After joining the new company, Liu said he had learnt some enterprise management skills in the first few years and then decided to quit his job in 2006 because he was bored by the bureaucracy and low-efficiency and there was no hope of promotion or pay-rise. The SoE he worked in XuZhou city later became bankrupted and was privatised by the local government.

Mr. Liu set up his first T-shop in 2007, immediately after Sun Han began his first experiment. He was one of the few early entrepreneurs in the village who saw the opportunity almost at the same time with Sun Han. In three years, Liu's enterprise, the Sanshi Furniture Company, developed from a one-person company to a middle-sized one with about 30 employees (15 carpenters, 7-8 management staff, 4 remote sales staff)

with an estimated revenue of three million yuan between 2010-2011. He said the revenue was not something he expected when he started in 2007. In 2007-2008, his company only earned about fifty thousand yuan, then the sales rocketed to two hundred thousand in 2009, 1.7 million in 2010, and 3 million in 2011.

Taobao e-business platform is essential for Mr. Liu's business adventure. Taobao provides access to a furniture market that is growing at a fast speed, and more than that, he gradually masters the skills of how to find customers and how to let customers find his business on Taobao platform. As his experience and knowledge of e-business increases, he said he gradually learnt the knowledge of how to enlarge market share and meet the demand by flexibly managing his backyard manufacturing workshop.

As I talked with Mr. Liu in his office -- the office was located in a corner of a warehouse by the side of the village main street -- he was sitting in front of his computer, intermittently checking the screen which was flashing all kinds of message alerts. He described his daily job as sitting on his desk and monitoring the online market transactions, drafting pricing strategy and guiding his sales team's performances. The whole sales team was not actually located in Dongfeng. The team was located in Xuzhou city, about 80 kilometres away from Dongfeng. Mr Liu explained that he need some people with college degrees who can

speak the language of young Chinese internet users, in Taobao style. And it was not easy to find in rural areas. It seems to me that Mr. Liu is quite comfortable with working with his employees in Taobao-supported virtual environment instead of the face-to-face physical office.

Apart from manufacturing, Liu's company is completely running on Internet, particularly on Taobao. He maintains a T-shop featured with over 60 furniture designs. Each design has a specific page detailed by high-specification pictures, function descriptions, user manuals etc. The top banner of his shop displays three key icons: a "crown", Aliwangwang and CPS. The crown icon means this shop is among the highest rank of credits in Taobao (with credit points between 10000 and 20000, see Taobao rule No.1 Credit Grade Scheme). Clicking on the Aliwangwang icon directs visitors to an online chat mode with one of the sales team members, including Liu himself -- if no body is on duty, the icon displays in grey. CPS icon, as I have explained above, is the Consumer Protection Scheme, meaning Liu's company has signed up such protection scheme with Taobao and paid substantial deposit, in which case shoppers in this shop have the privilege of returning stuff without a reason in 7 days. The top banner is also featured with a search frame, which enables user to search items either in this shop or in Taobao. More than showing a gallery of office desks, chairs or other furnitures -- many pictures are featured by professional models -- the advertising space in the Liu's shop is highlighted by an array of pictures showing

some high-level government officials visiting in his workshop (the Governor and Vice Governor of Jiangsu Province). One picture gives screenshots of TV's news program, in which his company employees are interviewed. The TV news program is China Central Television's (CCTV) News Broadcast (Xin Wen Lian Bo), the most important propaganda TV program in China.

Like Sun Han, Mr. Liu mentioned that in the local area, it was very easy to source timber materials, because growing and selling timber materials had been a historical business among the whole Xuzhou and neighbouring Suqian regions. This was confirmed by my own observation when I toured around the neighbouring area, as there were hundreds of timber-yards along the highways and most of the logistic trucks on highways through these forests are log-trailers. The Xuzhou-Suqian region, located in the far northern part of Jiangsu Province and roughly 500 kilometres from Shanghai, is famous for its production of timber logs. However, historically the region has failed to develop any advanced industry that is based on timber production. Timbers were sent to southern cities, like Shanghai, Suzhou, Nanjing and Guangdong Province, because the industrial demand were there. Now, Liu said he just need to contact his local friends and relatives to source the right timber materials. And now he had two local long-term suppliers, who migrated their workshops from neighbouring towns to Dongfeng, just the next door to Liu's workshop.

Working side by side with fifteen carpenters from local regions, Liu keeps an eye on the market trend of furniture products. Sometimes he has to guess what his customers would like to buy and sometimes he just copies the most popular designs from the internet -- which may be circulated by his Taobao friends in online forums. In order to manufacture these products, Liu frequently talks to his carpenters and discusses the feasibility of manufacturing new designs. The workshop works on orders directly coming from T-Shops and doesn't keep stocks. All Liu needs to guarantee in the production process is the timber material supply. With the supply in place, Liu arranges production plan on daily basis while he collects information and prioritise orders coming from Taobao. His zero-stock approach gives him a special advantage comparing to those big furniture wholesalers on Taobao, that is, the flexibility for customisation. By taking customer orders, Liu has detailed information of what his customer wants or specifies, and the capacity to put these detailed specification into products. The practice of tailor-made service is actually the common practice across most T-shops and manufacturers in Dongfeng.

Many of Liu's customers are young Chinese college students or white-collars working in big cities. These people, according to Liu, are looking for the furniture that is functional to their urban lifestyle, cheap but fashionable. IKEA products were very popular for them, but the prices

are very high, considering their income. Popular products of Liu's company include computer desks, office chairs, dinner tables, book shelves, cabinets etc, and the prices are normally less than half of IKEA counterparts, at least. Apart from low price compared to major furniture wholesalers, customers of T-shops can also design their own furniture, negotiate a bargain price and enjoy home delivery service that is guaranteed by the Taobao company.

One of the key concerns of Liu's job was focused on pricing. In a series of talk, Liu confessed that although having being doing furniture business for a few years, he still had questions about how to make good pricing strategies. He said that although the manufacturing cost is controllable, the pricing of the product sometimes has little to do with cost. The pricing, he said, is like operating on stock market. Sometimes it goes up and sometimes it goes down. And what he needs to do is to collect as much information as possible, based on which his model of pricing will be built. In order to achieve the information advantage, he needs to master the technologies offered in Taobao platform, particularly the search engines, advertising channels, and data analytics software. The Taobao platform offers some customer-tracking and user-behaviour-data-mining software, which would help netpreneurs understand the shopping behaviour of target customers, and this is not for free. More importantly, he makes friends with other Taobao sellers and share information with them, mostly by joining their communication networks (for example, the Taobao

furniture business forums, offline industrial conference etc.). “it’s very much about guessing how much you customers will be willing to pay,” he said, “and to do that, you need know your customers and your competitors”. When I asked the question “what would you do to know your customer/competitor”, he was given a short answer “it’s all in Taobao, you need to dig them out”.

Liu also recognised the benefits of local clustering and said it gives him extra advantage over competitors online. He said when he started business four years ago, there were many furniture makers on Taobao, coming from a varieties of places in China. Four years later, most of his competitors or collaborators come from a few set of places, namely Zhejiang, Foshan or Dongfeng (Xuzhou). Located in Dongfeng village, the benefits of collective efficiency were very important for his business. For example, a few years ago, he needed to travel to neighbour counties to find timber suppliers, negotiate logistic arrangement and the price and quality were not stable because the deals were short-term. Now in his own village there are more than a hundred manufacturers, and a dozen of material suppliers. The benefits of suppliers and manufacturers sitting next door include not only lower transportation cost and face-to-face communications, but also on information-richness, better quality and trust. Another major benefit of clustering includes the cost of logistics. Four years ago, there were only one logistic company’s branch in the nearest county, and price is calculated based on the weight of each product. Now

there are about twenty agents of various logistic companies in the village, each agent office is actually run by a local family. The collective bargain power for delivery service in this village makes it possible that the delivery price is much lower than competitors from other regions.

The 'scale economy' effect of furniture manufacturing, Liu said, has enabled his enterprise to enter into a new market segment -- the subcontracting of furniture manufacturing. Liu had a long-term partner company located in Anji, Zhejiang Province, which is a place about 300 miles in the south and famous for producing chairs (Anji is also the brand name). With the partnership, Liu was allowed to produce tables and desks, to match the chairs, under the brand Anji. Liu said he was in a very strong position when he secured the contract, because he not only can produce in a cost-effective way, but also distributed the products more efficiently (with delivery cost half of the competitors), thanks to the collective bargain with logistic companies in local village.

In addition, the creation of this industrial network owes a lot to local government support. Since the introduction of market economy in the 1980s and following central government policy, the local government had encouraged private entrepreneurship. Prior to the specialising in furniture-making, the village have tried a number of other businesses, such as noodle-making, pig and poultry farming, plastic materials manufacturing. Therefore there was a certain culture of entrepreneurship

in the area, and this, Sun Han and other local netpreneurs told us, had influenced their decisions to make their own enterprises. In recognition of his success, his company was appointed by the government of the local county as the 'training centre for young entrepreneurs'. We understood that such official government blessing was an important factor for success in the Chinese market.

Support of the Party

The party secretary of the village, Mr. Wang, was once a manager of the Shaji Town Industrial Group (STIG), before he was appointed in Dongfeng⁷¹. Shaji Town Industrial Group is actually a government-controlled company which owns the major industrial enterprises in Shaji area, whose main business is plastic materials manufacturing. Mr. Wang considered himself as a businessman rather than a civil servant, and he told me proudly a story of how he acted as a go-between to help Sun Han secure a loan from the local bank so that Sun Han could expand his manufacturing scale. Since major local banks are state-owned, Mr. Wang explained that it was problematic for Sun Han to go ahead to apply for business loan by his own, because private enterprises, unless they are very big in scale, are not the type of clients local banks are targeting.

⁷¹ In Chinese government structure, the township government was the basic unit of government body, which is supervised by the county government. In the village level, technically the village chief is elected by local residents according to the Village Autonomy Principles in Chinese legislation. That means his office does not necessarily take orders from township government and should be held responsible for local constituents. However, because the party secretary and the village chief is the same person, and the post of party secretary is a part of communist party structures, so in reality, the village party secretary paradoxically represents the voice of local government, and act for the interest for the local collective.

To facilitate the deal, he introduced another company, the Qiangsheng Plastic Company, to step in as a guarantor for Sun Han's application for a business loan. Qiangsheng is a company owned by STIG, therefore it's a state-owned company and the banks recognise state-owned companies as low-risk clients. I suspect that this is probably the benefit both Mr. Wang and the party secretary of the government of Shaji (Mr. Huang) promised to Sun Han when they tried to persuade Sun Han to voluntarily share his knowledge and skills with others in the village.

It seems to me that the logic of government active involvement to help local e-commerce development is clear: the industrial development in local areas, measured by GDP growth, is the top priority in the local government's agenda, which determines the evaluation result of the local party leader's performance. It came to be no surprise that one year later (2011) when I returned to the village, the locals told me that Mr. Huang, the party secretary of Shaji Town, got promoted to the position of vice-party-secretary in Suining County -- a sign of positive feedback from his "boss" on his job performance. So the political ideology of economic development makes it possible that these local party officials were very entrepreneurial in promoting economic development.

Many of the local party officials I met explained that they can help foster local e-commerce development by improving the mutual trust between the entrepreneurs and the local banks. During the second time of my visit,

I noticed that there are two new bank branches operating in Shaji town (ICBC, and Post-Bank), and local government officials said it was their efforts to attract these banks to open branches here because normally these banks only have branches in the urban area. The two banks are specifically targeting at e-business SMEs, through the government's involvement. They were in close contact with local business owners. The township government building is just a mile away from Dongfeng. Mr. Liu mentioned that the township government officials regularly visited his office, at least two or three times a week. I asked Mr. Liu what these government officials normally did when they visit his company, he said their visits were very informal because they knew each other well. When these party officials paid visits, sometimes they might just want to learn his recent situation and asked if there was anything they could help. "it's informal," Mr. Liu said, "it's more like local friends and neighbours dropping by and saying hi, which happens here every day." I understand that since the local government is acting as a quasi-guarantor between banks and local business owners, they have the natural tendency to learn how these business were going on regular basis.

When I paid the first visit to the local government, the party officials and several leading entrepreneurs were having a meeting and discussing possible solutions to reduce the negative effects of internal competition, especially price-competition between local business on Taobao platform. Those big business owners like Mr. Liu or Sun Han were very concerned

about the general quality control and minimum price of furniture products produced in local areas, as they are aware that ‘Dongfeng’ or ‘Shaji’ have already become a popular brand on Taobao platform as well as more and more shoppers learnt that this area produce good quality furnitures with reasonable price. They were planning to establish a government-backed “Furniture e-Business Association” to set up rules and procedures for local business collaboration, thus regulating locally quality standards, prices, and brand management. Their meeting elected Sun Han as the first chairman of this local business community. I suspected that this association is still an on-going project before it can do anything substantial, except the skill training part.

Another major support that these local entrepreneurs need from local government is the issue of land. Under Chinese regulations, the industrial-purpose land use needs to be approved by the county-level government or its superior government. Since the majority of land in Dongfeng village is for agricultural-purpose, the local furniture entrepreneurs, especially those growing fast on Taobao platform, desperately need a much bigger share of land that is dedicated for “industrial-purpose”. Since Sun Han and other leading entrepreneurs were recognised by the government as good examples of development, the township government becomes active in lobbying his superior government (Suining County) to approve more land for industrial-purpose than before. Hence when I visit the party secretary’s office in Dongfeng,

he proudly showed me on his map that now there is a large industrial park under construction in his village, and the major manufacturing workshops in Shaji Town will be move into the this industrial park. “The new industrial park has good infrastructures and are next to the highways”, he said, “and we don’t have to worry about the industrial land anymore.”

5.4 Yiwu City - Embedding Netpreneur's Local Community

The City of Commodity Trade

Yiwu is a middle-sized city of 1.2 million population. It is located in central Zhejiang Province, which is about 100 km south of the provincial capital Hangzhou (Taobao's home city) and 280 km southwest of Shanghai -- the southern end of Shanghai-centred economic periphery (CRDEZ). The city has a county-level government, supervised by the municipal-level government of Jinhua. Since early 1990s, Yiwu gradually gained its national and international fame as the 'capital of small commodity trade'. The city hosts China's largest wholesale market for "small commodities" (小商品市场, such as toys, lights and household ornaments etc.), and it attracts a large number of foreign entrepreneurs to trade commodities and develop export business. While far from major metropolitan centres, the city developed a good transport infrastructure featured with an international airport, a train station and highways to the national motorway networks, which is quite unusual for a county-level city in China.



Figure 5-2 Yiwu's location in China

Unlike Dongfeng, Yiwu is already a fast-developing commercial city. The presence of a vibrant commodity trade market fuelled the economic growth of Yiwu regions during the past decade. According to the local government's statistics, in 2009 there were about 1,146 large-scale (more than 100 employees) manufacturing enterprises located in Yiwu regions, 99 percent of which are privately owned. Typical local industries include knitting and weaving sectors, clothing, jewellery and ornaments, zippers, stationary and sports etc., all of which are popular commodities in the city-centre's trade market. The prosperity of commodity trade also substantially contributes to the local tourism and property sectors. It is estimated that about 30 percent of the population comes from outside Yiwu region, including foreign tourists. Most of these foreign tourists are wholesale traders from Middle East, Russia, India and Central Asia. A walk in Yiwu's city centre is a discovery of restaurants and hotels that are displaying Arabian or Russian advertisements. While many people

celebrate the success of Yiwu as an example of free-market economy and the evidence for the dynamism of Chinese grass-root economy, critiques maintain that Yiwu's development is closely related with the development of counterfeit industry and the local government's ignorance of intellectual property issues. The Wikipedia article on Yiwu describes the city as the "Wall Street for the [counterfeiting] industry, providing a vast marketplace where thousands of [counterfeit] products are openly traded and 2,000 metric tons of fakes changes hands daily" (<http://en.wikipedia.org/wiki/Yiwu>).



Map data ©2012 AutoNavi, Google

Figure 5-3 The location of Yiwu in CRDEZ Region

The Taobao Village

QingYanLiu (QYL 青岩刘) is a local neighbourhood in Yiwu city. Historically, the neighbourhood is a quiet living area with the majority residents coming from the countryside of Yiwu. The neighbourhood has some new development areas with many new residential buildings just

completed. It is very close to the city centre and provides a good living facility such as supermarkets, grocery stores, restaurants and cafe bars. Since 2008, the neighbourhood has quickly become a hotspot of young e-business entrepreneurs (or netpreneurs). By the time I visited this neighbourhood in 2010, there were roughly 1,000 netpreneurs setting up their workshops and at same time living in offices. Since all of these entrepreneurs operate on Taobao platforms, the local people called this neighbourhood the “Taobao Village” (淘宝村 taobao cun). Many of these netpreneurial workshops are founded by the recent graduate of a local college -- Yiwu Industrial and Commercial College (YICC). And many other netpreneurs either migrate from other cities to this neighbourhood or simply are local commodity traders who find new opportunities in Taobao’s e-commerce markets.



Figure 5-4 Photo from the “Central Zhejiang Info” November, 2009

A local newspaper reporter (Central Zhejiang Info, a regional newspaper), who happens to be together with me during my first visit in this neighbourhood in 2010, describes his one-day experience in this neighbourhood:

11:00 am, November 3rd: I walked on the streets of this taobao village and it was strangely quiet. The whole street neighbourhood looked nothing special, just like any urban living areas. I spotted few offices that looked like internet start-ups or commodity trade companies. The whole village was like still in sleep. I can hear nothing but the traffic noises coming from nearby highways. What made it even stranger was that most of the street restaurants, grocery stores and cafes are closed. Local people told me that these restaurants are running good business but they only open business in late afternoons and evenings.

17:30 pm, November 3rd: I came back to the same street in the late afternoon and felt the growing buzz around me. I found that the whole street was suddenly full of young student-look-like people, who are busy with moving boxing and packaging stuff. It was almost like thousands of young people suddenly came out of their flats, opening the doors of their underground warehouses, and starting to pile the boxes up on their doorsteps. Then the whole streets were filled with the noises of ripping tapes and people’s shouting.

20:00 pm, November 3rd: After two hours of packaging, the streets were filled with a long queue of trucks, which were sent by the logistics companies to pick up boxes and deliver these goods to various destinations. One of these young working staff told me that the underground spaces are used as warehouses, and what the staff need to do is to print out the delivery forms and attach a copy on the packaged box and then handled the delivery forms and boxes to the logistical company staff. After eight o'clock, the village streets were filled with people who just got off from work and rushing into restaurants for dinner and evening social life.

As the number of taobao start-ups grow in the area, the local residents and authorities are very happy to see the influx of people either as entrepreneurs or working staff, because they received substantial economic gains in the forms of house rent, local consumption and employment. Now the county government of Yiwu begin to recognize the implications of QYL e-commerce community and set to make strategies to transform the village into a e-commerce industrial park (they called the plan "Taobao City").

As I strolled in the streets of QYL, I found that the YeBA people, who had been so kind to be a company with me and many of themselves are actually living in this area, are very familiar with the local people in the streets, shops, restaurants and flats. They keep saying 'hello' and nodding heads when they meet people in the streets. We also randomly entered into some netprenerus' flats if they invite us to have a chat and a cup of tea. Lin said she had a lot of friends living here, and they quite

often visit each other's homes/offices, at least once or twice a week. When they visit the neighbour's flat, they always discussed the recent business news in taobao and local area and exchanged views and tips of business-making.

When visiting each netpreneur's office flat, I specifically asked them how they become to know their local 'friends' and how they get information about who is an expert of what. Many of them said they don't normally regard it as a problem, because the longer they live in this neighbourhood, the better they would know about the people and expertise. It is worth noting that many of the local netpreneurs seem to stress the importance of 'open' and 'sharing' culture in the local neighbourhood, which they expressed as some important experience they gained by being part of taobao's online community. I'm not very sure to what extent that such 'open' and 'sharing' culture are existing in local community, but I can feel that all these taobao netpreneurs are taking the attitudes of being open and sharing seriously. Also, while all of these netpreneurs have their online presence in various kinds of virtual communities, one advantage of being local with them is that the locals would normally have the knowledge of who is operating which taobao store specifically, while the "virtual" friends might not have such richness of information.

Lin's Local Business Life

Lin is one of the first entrepreneurs based in Yiwu whom I made contact with even before coming to the city. In her early thirties, Lin was born in the city, graduated from an university in Shanghai and then returned home for developing a business. She is currently running a cosmetics and health food store on taobao and serves as one of the leading members in Yiwu's local e-business association. During my first few days in Yiwu, Lin was actually my guide when I walked around the city and made contacts with several local entrepreneurs. With Lin's help, I came to realise that Yiwu city has an interesting geographical layout in which each section of the urban areas might serve dedicated clustering functions for certain particular business sectors (lights, shoes, zippers etc.) -- the northwest region for lights and furnitures, the southeast for shoes and socks etc. Lin's home and office is located in QYL area, which is located in central-south of Yiwu and is an area of netpreneurs, dominantly lived by taobao's business sellers.

During her university years in Shanghai, she developed an interest in health food, natural ingredients and substances used in traditional medicine and cosmetics. She did some research on recipes and manufactures of products from natural ingredients, particularly cosmetics, and she located a reliable source of such products in Thailand. When she came back home, she decided to set up a business of beauty and health products and she targeted at taobao as her business platform. Soliciting the help of a professional graphic designer -- who runs a local

business -- Lin set up her T-shop in 2008 and started selling health food and cosmetics products to online shoppers. Her company employs five staff who are working as sale assistants as well as delivery-logistics support. Her boyfriend, who is living together with her in this flat, also acts the extra employee sometimes. Most of his staff are students or recent graduates who wish to develop their own business in future. All his company staff are working on Aliwanwang -- taobao's instant messenger -- as business owner, she can keep the record of everything happening with taobao customers.

Lin's office is located on the first floor of her own living flat. The second floor is reserved for her own living space, while the first and ground/basement floor is the office area. The storage space in the basement is large (approx. 100 sq.m), where piles of boxes are stored, each box attached with labels, barcodes and detailed descriptions. Lin explained that the majority of her stocks are cosmetics, while she is continuously exploring other products - her current "research project" involves a brand of instant coffee blend from Sumatra, a product she believes has good prospects in Chinese coffee markets.

Lin normally maintains contact with the customers via aliwangwang - the primary instant-messenger tool on taobao. Occasionally, some of her customers prefer to contact via emails, in which case she also use the Alibaba's email service. When I asked Lin why she always choose to

stick with Alibaba's web products, she said that it creates professional image and a high degree of trust, as the aliwangwang and email accounts are connected to the her trade history and credit grade. Her business completely relies on Alipay to handle payment and other banking issues. Alipay's escrow service acts as guarantor of payments and doesn't release them to seller until buyers confirm receipt of the goods they ordered.

Like Mr. Liu of Dongfeng village, the marketing tactics are probably one of the important skills for Lin's business. Lin also paid an annual fee for taobao's premium service on search-and-ranking related lists. In addition, she needs to keep an eye on those hot 'search keywords' and offer her bids as early as possible so that her product's visibility could be promoted on taobao. She also needs to keep in touch with those taobao support staff (taobao xiaoer) and learn recent information regarding some themed-activities, which may attract a large number of shoppers. In order to be part of the themed-activities, Lin said, one prior condition is to have a high degree of commercial activity, notably, the high ranks of credit grade. Lin was on "diamond" (five diamonds) level when I visited her store, and she said her store will grow up to the "crown" level next year if her business grows at the same speed as last year.

In fact, the taobao reputation (credit grade) becomes so important that increasing credit grade becomes a professional service in Yiwu,

particularly in QYL area. The streets of QYL neighbourhood are littered with makeshift noticeboards displaying hundreds of handwritten notices from people who offer to help local netpreneurs improve their taobao credit grade. These ads flies quickly catch people's eyes by saying such things as "refreshing to Crown in a week!". While it is easy for experienced entrepreneurs like Lin to identify these services as fraudulent business, these kinds of business may target some new entrepreneurs who had limited knowledge about taobao. Interestingly however, the rumors say that there were some "methods" to cheat over taobao's credit fraud-detection mechanism, which takes the form of mass collaboration organised via QQ - Aliwangwang's competitor and China's biggest instant-message service.

Like many other local netpreneurs, Lin places much emphasis on the role of local 'commercial culture' in facilitating her business to grow up. Lin said that Yiwu's local business culture provides friendly and nice-living conditions for early business start-ups. In Lin's example, when she graduated from a university in Shanghai, she chose to leave Shanghai -- where most of white-collars jobs are based -- to come back home, simply because she is very comfortable with living by running her own small business. Since almost all her local friends are running wholesale related business, she actually regarded entrepreneurship as something more valuable in life than living with salaries in urban areas. Such local favour for commercial entrepreneurship has actually generated friendly

environment for early business starters. During her early years of taobao business, she had to source many products from the Yiwu Commodity Market to re-sale to taobao shoppers, although these products are not the kinds of products she intended to brand her business. Also, the existence of a wide range of additional business support services, ranging from webpage designers to photographers, available in local neighbourhood's proximity, makes netpreneur's life much easier than doing elsewhere.

For example, Lin regularly sources packaging materials from a few specialised local business in QYL neighbourhood. When I visited one of these packaging and boxing store in QYL, the owner told me that his packaging business is actually in a the-third-generation family business, which have been serving Yiwu's commodity market and local manufacturers's demand for decades. His family has now shifted attention from commodity market to the netpreneurs. Walking in his superstore, the owner proudly displayed the wide range of his products, from supersized package boxes down to a match box. Each type of packages are re-designed for the purpose of mail delivery. Local netpreneurs may pick up these boxes in person, while the store can also offer delivery service on bicycles. In many cases, store maintain good collaborative relations with the customers and are willing to adjust to some contingent changes requested by customers.

Likewise, regarding the delivery service, netpreneurs like Lin are facing a growing number of options in local area. These small businesses have appeared, multiplied and grown in tandem with the number of netpreneurs active in the city. Some of these small business offer only local delivery service, while some others collaborate with large postal and logistical companies to deliver goods to distant locations. Like the packaging company, these delivery companies have tailored their services to the local demand of netpreneurs. Many of them have local netpreneurs as their only customers.



Map data ©2012 AutoNavi, Google

Figure 5-5 Key locations in Yiwu

YICC: The Netpreneur's Bootcamp

About one mile away on the northeast of QYL neighbourhood, there is a local university --- Yiwu Industrial and Commercial College (YICC). As the only higher education institution in Yiwu region, the university provides bachelor-level business and technology courses for students coming from not only local areas, but also from other provinces. As the QYL region increasingly becomes an entrepreneurial hotbed for taobao sellers, the college systematically re-designs its courses to make its education for students who wish to make business via internet mediums. Especially in recent years, YICC provides a rich supply of young graduates with good knowledge of internet and ITs, as well as well-trained business-developing skills. To a certain extent, since many new residents of QYL neighbourhood are recent graduates from YICC, the local college has quickly turned itself into a local incubation of internet e-business industries.

The college's teaching style strongly encourages both teachers and students to set-up and run e-commerce start-ups - particularly on taobao - as part of their learning experience. To facilitate and enhance such learning experience, the college promise to help provide free warehouse spaces for students who just started their business on taobao. For potentially successful students -- such as those who manage to gain high credit grades (diamonds or crowns) in a short period of time, the

college operates an angel-fund to support student's business projects they regarded as good value for return. Such encouragement of entrepreneurship can be seen from a peculiar school academic policy that up to four points of academic credits can be earned from student's performance evaluation on taobao's platform (credit grade points and levels). For many local entrepreneurs who have little knowledge of e-commerce, YICC also provides the entry-level course to give them hands-on experience on Alibaba and Taobao's trading platforms.

To have a quick start on taobao's platform, most students rely on the model of wholesaling from local market and retailing to taobao's shoppers. Most of the local wholesale business based in central Yiwu's commodity trade market, either incapable of conducting e-commerce or getting locked in the "traditional" way of wholesale, are actually happy to help these students grow up their taobao business. Some of the most successful student netpreneurs eventually become the major buyer in Yiwu's commodity markets, while some other student netpreneurs developed their own position in the commodity market by keeping retailing and wholesale business running at the same time. Still others found business opportunities in manufacturing and gradually turned themselves from taobao sellers to manufacturers. Several logistical companies are even allowed to operate business within the campus, so that these students find it convenient to make deals with them and arrange postal delivery.

When I walked in the campus of YICC together with Lin and Mr. Gong - a lecturer of YICC and also a netpreneur, I feel like walking in the middle of a large business park. Classrooms have been modified to be suitable to work, rather than to study. Students work in their “open plan” offices and sit together with their “colleagues”. Each one of them are busy with their work on computers, maintaining their taobao stores either by updating information or chatting with potential customers (or suppliers). Their congested working spaces are filled with commodity shelves, displaying various kinds of products they are trying to sell via taobao.

Mr. Gong told me that the teaching staff are actually working under pressure as the students learn very quickly by taking part in taobao’s business practice. Teachers have to learn quickly as they teach these business skills. Sometimes, they seek collaborations with taobao’s training departments (Taobao University) who can provide more updated training materials which student netpreneurs might find useful. Sometimes, they have work on their own to solve some urgent problems. For example, Mr. Gong mentioned that he working with other colleagues on a research project of measuring the internet traffic effects of several marketing techniques on taobao, which aims to produce a general evaluation model to choose and compare taobao’s wide range of marketing tools.

One of the benefits from studying in YICC's campus is that most of the entrepreneurs have the opportunity to form up long-term relationships with other fellow entrepreneurs, which may crystallise into an identity-bounded relationship-based local communities. Many graduates achieved great success in YICC's neighbouring commodity trade market. While appreciating the education they received, many of these successful graduates organised alumni networks and are actively funding the entrepreneurial initiatives in the YICC campus.

Yiwu e-Business Association

Yiwu e-Business Association (YeBA) is local club of entrepreneurs. The association was founded in 2007 by a few leading entrepreneurs. It is the largest club of netpreneurs in Yiwu area, purely self-organized and supported by the local government. The chairman of this club, Mr. Yang Defeng, is a successful local businessman, who specialises in women shoes and maintains a "crown-level" taobao store. YeBA serves actually as the first contact point in Yiwu region before I came to this commercial hotzone. I managed to establish contacts with this organisation thanks to the introduction of a few Taobao managers in Hangzhou city. YeBA as a local self-organised society, has managed to establish an active connections with Taobao, by regularly sending delegates to Hangzhou for conferences and networking with taobao staff and maintaining a live discussion forum within Taobao's platform. Lin served as the vice-chair of this organisation together with Mr. Chen Jiansheng, which explains

why she was my guide in the first place. Mr. Chen also runs a medium-sized business on toys and home decorations in Yiwu area.

The three leaders (Mr. Yang, Lin and Mr. Chen) said that they were among the first activists to organise this local club. They said they were not perfectly clear what the association can do in the beginning, just felt that it could bring much bigger benefits if grouping local taobao sellers together and maintaining regular social contacts. Initially, they maintained a virtual social group using taobao's discussion forum functions and instant-messaging tool aliwangwang. They directly branded their virtual community as the 'Yiwu e-Business Association' and one year later, they received the official recognition by taobao. And Mr. Yang and Lin were the leading members of the editor team in this community. Yang mentioned that actually the taobao virtual community is the best place to start such organisation because all the local netpreneurs can quickly learn the existence of such organisation via taobao's information mediums (notably, the aliwangwang or other social-networking tools).

The official recognition of taobao means that the members have the privilege to display the taobao-certified YeBA logo on their stores. The logo, as I suspected, is probably the most important brand that YeBA leaders are trying to build up. Yang said that the leadership team normally work on a list of high-reputation business members and give

them the privilege to display such logos in their taobao stores. And they are working hard to make sure that the logo delivers the message of high quality and honest customer service, which reflects the core values of making business in Yiwu. To maintain and update such a list of privileged members, YeBA needs to work hard to know the business details of each member, and sometimes have regulations and disciplines on the members who fail to keep their signing promises. To do so, the association normally hold social-networking activities and encourage the wide participation of local members. For instance, two regular activities the YeBA organise each month are sports -- badminton and mountain hiking. Sometimes, group-dating events are also supported by YeBA, considering that most local netpreneurs are young people mostly aged between 20-30.

New members get enrolled by making membership application to the YeBA online forum. Once get approved, new members can browse a lot of useful information within the community, historically contributed and edited by other members. Many basic questions can be answered by simply posting these questions on forums and get more experienced netpreneurs offer advice. Mr. Yang and Lin said most new members developed relationship from online forums and then became good friends by taking part in various kinds of local activities.

With the office of YeBA being physically based in QYL neighbourhood, the organisation's focus has shifted from online forum operations to local social-network activities. Running a successful local community for netpreneurs that bring not only common benefits, but also the comfort of local life, is the mission of this organisation. The social events could take different forms, some are organized by individual members who had good reasons to celebrate in his neighbourhood and invite other friends to join, some others are organized more like a dating or sports event. It might be worth noted that badminton and hiking are two very popular sports among these local entrepreneurs. Playing badminton and joining hiking tours not only improves the life quality of these netrepenrus, who are sitting long-hours behind computer on daily basis, but also it gives more opportunity of socialising and forming up a sense of common community.

Mr. Yang and Lin mentioned that the majority of members are young people aged under 30. A large part of these young people are not born locals. They came from many different provinces of the country, and came to Yiwu for business opportunities. They call themselves the 'new Yiwuers'. Most of these people came to Yiwu and got a college degree from the YICC, speicalising in e-business or other business subjects, and then decided to stay for entrepreneurial opportunities after graduation. 'When they graduate from YICC', Lin said, 'they just move their home

one stop away into this neighbourhood and continue to operate their Taobao business there’.

The association was officially recognized by the Yiwu local government in 2009, who regards these young entrepreneurs as the key advantage of the region. Mr. Chen proudly showed in his association office that they had two official recognition certificates hanging on the wall, one is from the Yiwu government, the other one from Taobao (Alibaba), recognizing the club as the official Taobao partner in Yiwu. With the help of the local government, the association has a fairly large office space based in QingYanLiu neighbourhood. And they are able to actively recruiting local college students to work in this office to help organise and coordinate both online virtual communities and office communities.

When asked why it is important to get these official recognitions, they said that official recognitions, from both taobao and local government, improves their motivations for running this organisation. The local government recognition means that they gained a certain political status in the local areas, which means that they could work and socialise with other party bureaucrats and collaborate with them in a more equal status. “if you are purely an self-organised organisation’, they said, ‘those government people - including the police - normally look down upon us and wouldn’t take our concern seriously’. Now, the people in our association have the access to knock on the door of the local

government officials, either the urban planning office or the taxation offices. “Now we have strategic collaborative relations with several local neighbourhood commission, who would help us keep in touch and organise our local entrepreneur members.” Mr. Yang said.

The similar scenario applies to the Taobao (Alibaba) recognition, they said that in the name of the Taobao partner, they regularly receive more collaboration offers from Taobao, and when members contact the Taobao using the introduction of YeBA, they normally get much better service and attendance. One example is that Taobao now sends invitation to YeBA on regular basis regarding the invitation of various commodity trade fairs in various locations of China, a premium service Taobao would not do for individual customers. Also, if they raise a service issue of Taobao service or simply lobby for more favors, in the name of YeBA, taobao staff deal with it more swiftly and responsively.

The key leaders of association are purely working on voluntary basis, although they pay those college student workers as secretaries. When asked what motivates them to work voluntarily, knowing that these people entrepreneurs themselves and had extremely busy life, they said they generally need more opportunities for social networking, to get more information and to know more people. By serving the community of netpreneurs, they can get what they need as most valuable to their business. For example, they mentioned that each member of the

leadership team of their association has the right to display their association logo in their own Taobao shops, they are also allowed to show their association status in their shops, which serve as a marketing brand meaning that the owner of the shop have high social status among businessmen in Yiwu and should be more reliable than others.

6. Analysis

In this chapter, I examine the logic of Internet-enabled clustering through the theoretical lens of hybrid sociality. I first examine the network forms of netpreneurs'⁷² local collaboration activities (6.1.1) and assess to what extent Granovetter's embeddedness framework explains such network forms of local clustering (6.1.2). The following section then traces the managerial practice of netpreneurs into the social relations of technological platforms (6.2.1, 6.2.2, 6.2.4), as well as the relations with the company (Taobao) that provides such platforms (6.2.3). I will demonstrate how the local netpreneurs' collaborative and managerial rationalities can be traced into the logic of Internet as an overarching regulative regime – that is, the continuous sense-making and manufacturing of digital meaningful tokens process through interactions between human and technology. The final section attempts to synthesize both local and online embeddedness by theorizing the combination of socio-technical relations as the “recombinant architecture” in which digital networks and local networks are intertwined, intersected and co-produced. I will argue that hybrid sociality, which explains actor's local behavior and rationality by tracing their relations not only in local context, but also on the internet networks, provides the central ways to understand the logic of clustering in the Internet age.

⁷² Here I use the term “netpreneurs” to refer to the micro-entrepreneurs who use online e-commerce platforms to conduct business. This is a term that I find commonly used in China to refer to the group of micro-entrepreneurs who rely to Taobao platform to do business.

In order to do so, I follow the methodological guidance to examine the daily practice of key actors in their relational networks (*realist tales in section 6.1.1, 6.2.1*), seeking to justify their behavior rationalities in terms of their embedded relations in territorial and Internet domains (*critical reflections and reframing analysis*). Before jumping into analysis, let me recap the underlying theoretical and methodological assumptions that I have proposed in Chapter 4 and Chapter 5. These assumptions critically justify the ways I analyse the fieldwork data. Firstly, actions (including verbal articulations) are the statement of actor's interpretation of "how things work". Such interpretation is based on a set of meanings that actors internalise to make sense their life situation and rationalise their behaviour. Secondly, actors' interpretation is shaped by the social relations they are embedded within. It is through these social relations and the process of mobilising these social relations that meanings are given, enacted, contested and modified. Therefore, to justify actor's behaviour is essentially to reveal the process in which these actors are enrolled into particular interpretive schemes. Thirdly, the social relations constructed online and offline give rise to a mixture set of meanings that are framing the local actor's interpretative actions.

6.1 Local Embeddedness

In Yiwu and Dongfeng, netpreneurs are forming up clusters of small firms through local established networks of social relations. By tracing

the relations of key actors in the local community, this section reveals the mechanisms through which these netrepreneurs build up local relations of reciprocity, trust and coordination. Using Granovetter's embeddedness theory, I will then demonstrate why such mechanisms of local collaboration turn out to be the rational behaviour for local actors, given the existence of established social relations in local place.

6.1.1 Local Forms of Collaboration

Sun Han, the leading netrepreneur of Dongfeng village, works to manufacture the self-assembly furniture products, and sell these products to remote consumers via Taobao. His business directly relies on the efficient coordination of the following key business relations: a team of employees (carpenters and sale-assistants), suppliers of timber materials and machinery hire, the delivery companies, and -- of course -- the Internet service providers (Taobao, and broadband service providers). Principally, Sun Han's business involves the maximisation of sales revenue online while minimising the cost (employee wages, material cost, delivery charge, Internet access charge, software cost etc.) -- unsurprisingly, a form of classic capitalist practice. What is interesting is the way he manages to mobilise and manage his social relations to achieve profit goals. His managerial practice, therefore, can be categorised into two kinds: the practice of pursuing sales, and the practice of reducing cost.

To reduce cost, Sun Han seeks favourable trade arrangements with the local suppliers -- the material-sourcing families, the machinery-hire families, and the delivery-agency families etc. But why should these local families offer Sun Han the special treatment? Common economic logic among the local suppliers is that they expect a large scale of orders from clients, especially if such scale of orders can be sustained in the long-term. These local families of support business need bargain power to negotiate with external suppliers, to maintain their own profitability. The best way to achieve such bargain power without increasing trade risk is to secure the support of local leading netpreneurs like Sun Han. By support, I mean the commitment of maintaining long-term supply relations. In return for such long-term support, local sourcing agents -- as well as other service agent such as logistics -- offer Sun Han a guaranteed price and a high standard of timber quality.

To expand the scale of order, Sun Han, on the one hand, works to increase his online sales and scale of manufacturing, while on the other hand, capitalises his social networks and aggregates the demand from his social networks -- his friends and neighbours are following him and selling similar products on Taobao. These followers, with implicit permissions, may just copy Sun Han's product page content (textual descriptions and pictures) and repost the same product pages in their own Taobao stores. In exchange for these free-of-charge copyrighted content, these followers are then expected to maintain close contact with

Sun Han. For example, Sun Han generally expects the friends of his social networks to: a) source the timber materials and machines via his involvement; b) to trust him that he secures the best price for them, instead of trying to get even lower price from a third-party supplier; c) if possible, to buy furniture parts from his workshop and resell on Taobao, to directly boost his own scale of manufacturing.

Members of Sun Han's social networks receive benefits much more than just low cost of supply, machinery hire, and delivery service. They also get free skill-training by being contact to Sun Han -- some relatives and neighbours send their teenage children to work as non-salary interns at Sun Han's office. They are also actively seeking quality information from conversations with Sun Han -- what products are becoming popular, how to price and how to negotiate. Many of these quality information are shared during the conversations that normally take place at Sun Han's office -- where neighbours and relatives feel free to drop by - or on the main streets of the the village.

Similar behaviour of "grouping" for reducing cost is also present in Yiwu, though with different focus of areas. Most netrepreneurs living in Yiwu's QYL neighbourhood are young college graduates with little family connections in-between, mostly friendship/alumni connections -- they mostly graduate from the same local college YICC. They have no local hero to negotiate the market price on behalf of them, partly because

there is an established super-sized wholesale market in the town centre, which means negotiating the commodity price from market becomes a very personal adventure. Since accessing large-scale commodity sources are much easier than most other regions, Yiwu's netpreneurial communities have a wide diversity of products focus -- from mobile accessories, clothes to cosmetics and healthy food, which makes it difficult for the local neighbourhood to "integrate" and "consolidate" local production capacities as the Dongfeng villagers did. The most important networks of collective bargain then focus on the sharing of some local "infrastructure" services, such as packaging, postal&delivery, restaurant & catering, and skill-training etc.

The fact these netpreneurs with such a diverse sectorial focus managed to live together as local neighbourhood in the centre of sub-urban town, exhibits a form of "grouping for collective bargain" behaviour. The collective lifestyle in this neighbourhood -- working in the daytime and relaxing in the night -- gives rise to a special business time arrangement for local restaurants, cafes and other entertainment facilities, which are different from even other parts of the same city. The local catering/entertainment business had a student-friendly menu price, tailored to the lifestyle of these young graduate entrepreneurs. The postal&delivery companies have fixed appointments with all local neighbourhoods to pick up commodities and file out the documents, which also help bring down the cost of delivery. With a sense of certainty

on the size/quantity of packages and the usual destinations, delivery companies compete to offer special prices to local business. The e-Business Association in Yiwu, with its office located in QYL neighbourhood, is a self-organised organisation and very entrepreneurial in seeking ways to take the advantage of collective bargain. The organisation works to offer a wide range of grouping-and-saving activities for local members, from postal delivery to outdoor excursions.

Loose-coupling, as a form of collaboration defined as the mutual adaptation process of different firms within networks, are also present in the case of Dongfeng and Yiwu. Such mutual adaptation process effectively reduces rigidities of organisations and the risks of radical adverse change in environment. The use of redundancy capacity of other firms, as a kind of capacity reservoir to smooth its own production requirement, is identified as a classical form of loose-coupling feature in networks.

The furniture manufacturing sectors in Dongfeng village exhibit this typical feature of loose coupling in regional networks. There is a mixture of small family-run workshops, equipped with only one or two machines, with a few large-scale furniture factories owned by local business leaders. Each firm/family maintains their own Taobao shops to sell their products. At the same time, they often cross-use each other's production capacity to deal with the ups and downs of market, based on the fact that their

production procedures are standardized through long-term collaborative activities. Small business owners simply walk into the factories of large business owners and ask for a particular kind of products, and the opposite direction applies when large business owners are overwhelmed by the volume of orders coming from Taobao. There is no formal contract to enable such relationships. The mutual commitment is implicit and embedded within a number of other local relations, such as neighbourhood, family ties, financial help etc.

The QYL neighbourhood of Yiwu doesn't have strong mechanisms of capacity reservoir locally, partly because the cluster is predominantly commerce/trade focused, while Dongfeng is more craft-manufacturing focused. In Yiwu, social relations tend to be focused on the fostering long-term relationship with suppliers and manufacturers, who are based in the neighbouring commodity market. Hence, the market uncertainty risks are shared between the netrepreneurs and their local market suppliers.

The suppliers, experienced in local wholesale market, have the capacity to off-set market uncertainty by building up their own networks of capacity reservoir in the commodity market. However, as the netrepreneurs' business grow up very quickly, it becomes a fact that those commodity market wholesalers are increasingly dependent on the QYL's netrepreneurs -- the QYL's Taobao retailing shop could sell the

products at a speed (turnover) that cannot be matched by business in the wholesale markets. When I visited the neighbourhood in 2010, there have been very live debates among netrepreneurs on whether and how it can be strategically beneficial to directly control the wholesalers of the commodity markets. Some leading netrepreneurs have already moved to control-in-house these wholesalers and their manufacturing plants, while the majority of local community chose to build up closer relationships with the wholesale markets and avoid directly controlling manufacturing plants and material supply chains. So the local networks of loose-coupling in Yiwu are taking a different shape from what was seen in Dongfeng village -- the former relied on a mature, long-established networks of "capacity reservoir" in the wholesale market, while the latter had to gradually build-up such networks based on netrepreneurs' own community relations.

Flexible specialization is another feature of collaborative forms in both clusters. Flexible specialisation, as a classical concept in industrial cluster studies, describes the institutional mechanisms of vertical collaboration across different divisions of labour or expertise in local region (Curry 1993, Sabel 1999). What differentiates flexible specialisation from collective bargain, and loose-coupling, is that the latter refer to the horizontal collaboration of local firms producing similar product or service, while the former occurs among firms in different sections of supply chains producing complementary products or service. Amin (1989)

summarised three defining features of flexible specialisation, which is useful to summarise similar aspects of local collaboration in Yiwu and Dongfeng: namely, *fragmentation of technical specialisation, family-organised craft manufacturing and flexible work time, and regional economy of single products.*

The feature of fragmentation is evident in Yiwu and Dongfeng clusters. Most local firms are micro-enterprises, employing less than five staff (a few business employs more than 20), specialising in several specific areas of business. Both regions have no dominant families controlling large trunk of capital ownership or any signs of doing so. The few ‘elites’ in Dongfeng village, for example, may function as the local centre of “manufacturing and innovation”, but they regard the region’s small family-run workshops as members of their reciprocal networks, rather than as production units. Some other local families, retreating from the fierce competition in Taobao market platform and local manufacturing workshops, turn to the business support roles, such as the material sourcing agency and logistical solution agency (as shown in Table 5-2, pictures in Appendix C.). These families of support business perform as the middle-men between the outside suppliers or service companies and the local netpreneurs.

By locating in proximity and mixing work and life experience with these local suppliers (agents of material or machinery sourcing), netpreneurs

have mutual trust with these local supply agents based on their existing social relations, which effectively saves the transaction cost of dealing with outsider suppliers directly. These local families of agency business also actively negotiate with outsiders to effectively bring down the cost of running furniture business in Dongfeng area. In Yiwu cluster, although there are not many manufacturing workshops like Dongfeng village, its community hosts a large number of local material/service providers, from IT skill trainers to packaging dealers. These local material or service firms provide tailored service for local netrepreneurs at lower price than outside market, whose service is also highly adaptable to the change of demand in the local.

Both business clusters displayed a strong feature of family-workshop and flexible work arrangements. In Dongfeng village, skilled workers -- the carpenters -- are mainly from the neighbouring regions, since Dongfeng areas don't have an established tradition of furniture manufacturing. These carpenters speak similar dialects and have mixed skills of furniture-making and sometimes work part-time for several different family workshops, where those family members -- wives, young brothers and sisters, teenage children -- doing the periphery work. The work process in each workshop are far from standardised and planned. Few families maintain large inventories. Machines, bought by a few large family workshops, are for general purpose use, and can be hired from neighbours at specific time by appointment.

For these family workshops, the key to maintain their competitiveness is not scale, but adaptability and flexibility to the online market fluctuation. Almost every workshop manufactures furniture according to the orders from Taobao, taking little risks of inventory cost. In this way, they maintain their own manner of “just-in-time” by closely “grouping” with each other, sharing production facilities, material inventories and logistical service packages while maintaining their own flexibility of production and hiring labours.

Both clusters also exhibit a strong institutional structure of product specialism, which has been characterized by geographers as the local *millieu* of flexible specialization. In Dongfeng village, the development of furniture cluster tells a story of an active/supportive local government, the homogenous local culture centred upon family-rural life, the common desire for entrepreneurial success, the political value of community prosperity with its trace back to Mao's socialist era, the complicated networks of social ties among neighbourhoods etc, and the particular local social structures -- omnipresent grassroots entrepreneurs, artisans, working wives, extended family and young labours, and inseparable work and family life places etc. Similarly, the Yiwu QYL neighbourhood tells a story of a functional and cultural impacts of local wholesale-market, the entrepreneurial and pragmatic education (YICC), the long-established regional culture of commerce and thin-profit trade which generally

assumes trust in relationship construction, and the social structure of alumni graduates, emigrant entrepreneurs, experienced market traders, boyfriend/girlfriend shared business, the foreign exporters. It is the combination of these institutional, cultural and social structures that constitutes what geographers referred as the “innovative milieu”.

In the next sub-section, I take a step back from the “objectivist” description of the collaboration forms, and reflect how these collaborative forms become the norms of practice in the local. Specifically, I will follow Granovetter to see how the mechanisms of trust, exchange of fine-grained information, and joint problem-solving are made possible by the established structures of social relations.

6.2.2 The Roles of Embedded Ties

This section applies Granovetter’s embeddedness theory to explain the ways in which established social relations are shaping the particular mechanisms of collaboration as discussed in previous section. The essential argument is that the local clusters of micro-firms manage to maintain business competitiveness because the dense networks of established social relations are overlaid upon the collaborative relations of economic exchange. Both cases of Yiwu and Dongfeng demonstrate that social relations are mainly responsible for the presence of trust, fine-grained information sharing, and joint-problem solving in the local economic life.

Trust

Trust exists in business networks when embedded actors have heuristic expectations that “an exchange partner would not act in self-interest at another’s expense” (Uzzi 1997). Such heuristic expectations, “a predilection to assume the best when interpreting other’s motives and actions”, are generally assumed in the collaborative relations of exchange in the netrepreneur’s local life. For example, Sun Han trusts his supplier agents to find the best quality timber materials with the best price they can afford to offer. Vice-versa, the local supply agents trust Sun Han to maintain the long-term supply relations, and to have direct communications with them were any important issues to arise -- instead of switching to another agent. In the same way, Sun Han’s followers -- the neighbours, relatives and friends -- have the same trust on Sun Han that he is not pursuing pure self-interest at their expense while helping them build up their own furniture business. These followers generally regard Sun Han as someone who speaks for the collective prosperity of the village, instead of pursuing economic interests selfishly for his own family. Similarly, in Yiwu’s QinYanLiu neighbourhood, Lin also made heuristic decisions on daily economic exchange -- she always finds the same local supplier of package boxes, the same logistics agents, and the same wholesaler of the local wholesale market, with the assumed trust that these exchange partners would not act in pure self-interest, but for the purpose of sustaining long-term economic relations with her business.

The continuing economic relations between local actors as seen in Dongfeng and Yiwu are partly explained by economic incentives, and partly by the social meanings of these sustained relations. Granovetter (1985) demonstrated two ways in which established social ties generate trust between economic partners: 1) known relations (or previous experience of social interactions) substantially bring down the uncertainty of risks -- "one trusts one's own information best"; 2) "continuing economic relations often become overlaid with social content" and such relations often "carries strong expectations of trust and abstention from opportunism" (Granovetter 1985: p490).

Both mechanisms of generating trust are found in the case of Yiwu and Dongfeng. For example, local actors like Sun Han, Mr. Liu and Lin all expressed strong preference to deal with partners of known relations before. Such known relations either stem from the established social ties (family relatives, neighbours, and alumni relations) or develop via the introduction of trusted persons. The partnership with persons of established social relations, on one hand, bring down the uncertainty of economic trade, especially in the business of selling commodity via the Internet where market demand is hardly predictable. In such cases, Sun Han chooses his partners (suppliers) based on his previous experience of dealing with these people -- he trusts his own information that his own experience find these people trustable. Or like Mr. Liu, he started his

business from trading with his family relatives -- Liu is a popular family name in this village which indicates that these Liu families are connected in various relative ties. Mr. Liu relied on his relatives to find the timber materials, and initially even hire relatives to work in the manufacturing workshop.

On the other hand, the sustained economic ties provide further opportunities of building up social meanings which further strength these ties. For example, since the growth of his online business generates success for his local partners (suppliers, manufacturers, service providers, and the government officials etc.), Sun Han acts as the leading entrepreneur who can speak for the collective welfare of local netrepreneurs. Such economic relations are enriched by several dimensions of social content. For instance, Sun Han is assumed to the role of local coordinator, introducing collaborations between two unfamiliar parties and occasionally, resolving disputes among local netrepreneurs. Local township government -- the local CCP secretary knows Sun Han and his family well for many years -- recognises his leading role by providing direct support for Sun Han's e-business initiate, such as, granting funds for training courses and spreading e-business skills, facilitating loan applications from the banks etc. From the perspective of locals in Dongfeng area, economic relations are just one dimension of social life -- they live their life by constructing many different kinds of social relations bonding them together as local rural community.

Neighbours have been living on the same street for decades -- families have marriage links between each other; young entrepreneurs like Sun Han and his friends grow up together since childhood. From these local perspectives, economic relations are normally much less important than other social relations -- of family-ties, of neighbourhood, of friendship, etc. -- which form the majority part of their ordinary life.

In a different way, Lin, along with her colleagues of Yiwu e-Business Association, is proactively strengthening the social meanings of ties generated through the sustained economic relations. Based on the fact that most of the local residents in QinYanLiu neighbourhood are college graduates who have few established family connections linked between them. The high-profile presence of the association in local entrepreneur's social life was primarily focused on strengthening the social bond between local entrepreneurs, who have already built up various kinds of economic relations (suppliers, online retailers, manufacturers, service providers etc). The various networking events organised by the association -- alumni reunion, sport clubs, skill workshops -- aim to create an active local community of entrepreneurs, where each one has a good knowledge of what the other is doing. The need to know a great deal about local fellow entrepreneurs partly necessitates the fact that these entrepreneurs are living and working together at the same neighbourhood. Living on the street where everyone has abundant opportunities of meeting and gossiping in local cafes and restaurants is

probably the most efficient ways of building up trust -- information is cheap by means of monitoring each other's behaviour.

Such patterns of interpersonal relations, both the rural community of Dongfeng and the student neighbourhood of Yiwu, take critical resemblance to what Mark Granovetter (1985) described in the case of "diamond market", where trust is established and sustained when economic relations are overlaid by social meanings:

"...various diamonds change hands on the diamond exchange, as the deals are sealed by a handshake...this transaction is possible in part because it is embedded in a close-knit community of diamond merchants who monitor one another's behaviour closely...."

It is through this process of building-up a close-knit community where each one knows the other that trust becomes the most characteristic quality of social relations bonding these local actors. In these close-knit communities, behaviour of fraud and malfeasance are effectively discouraged not only because the cost of cheat is so high that a gossip of one behaving indecently could cost him/her a great deal of economic trade, but also because the social meanings overlaid upon the economic relations -- family ties, alumni ties, neighbours, colleagues of voluntary work -- shaped the ways they interpret the motives and actions of others in the same community.

Formal contracts are unnecessary in most cases. Local netrepreneurs rely on their known relations to conduct business trade on daily basis. For example, Dongfeng's logistical agents rely on local netrepreneur's self-service to register the products to be delivered -- payments are usually settled once every month with a bill calculated based on the collected delivery receipts, voluntarily left and attached to the board of accounts in agent's office (see picture...) by local netrepreneurs. In this case, the unchecked trust between logistical agents and netrepreneurs, that netrepreneurs will pay the fair amount of bills while the agents would provide quality service as they expected, is not only ensured by the situation that mutual monitoring (everyone knows what the other is doing) makes the cost of cheating very high, but more importantly enabled by the long-established rural community relations in which one is shaped to have heuristic expectations to interpret other's motivations.

These kinds of transactions without formal contracts have greatly improved the collective efficiency (Schmitz 1995) of the local business. Netrepreneurs in Dongfeng just walk to the doors of their partners (suppliers, manufacturers, service providers etc), ask for specific requirement, and leave with assurance that their concerns are to be addressed in priority. QinYanLiu's residents can also walk to packaging business sites and ask for specific kinds of boxes and believe that the business owners would deal with their concerns with priority. It is such flexibility of "extra efforts" and "priority" that matters in these sustained

economic relations -- both sides are willing to give extra “favor” to suit the need of their trading party. This is consistent with what scholars have found in embedded relations of other contexts. For example, Uzzi (1997) contended that in the case of fashion-cloth manufacturing clusters in New York, such reciprocity of exchanging “favor” underpinned by unchecked trust, generates great business advantage for both sides, because *“it promoted access to privileged and difficult-to-price resources that are difficult to exchange at arm’s-length relations”* .

Fine-grained Information Transfer

Social ties between local netrepreneurs are acting as key channels in which fine-grained information are exchanged between economic partners. In Dongfeng village, useful information such as how to operate e-business, very detailed operations such as how to respond to customer enquiries, how to deal with complaints etc., are extensively shared between fellow netrepreneurs. Living in the same rural community with a common lifestyle of keeping constant communications and exchanging gossips with friends, neighbours and relatives, these local netrepreneurs simply assume the social values of talking to each other on daily basis as a very important part of their daily life, with obvious economic reasons (for example, the strategic information about market trend) only secondary to the wider social reasons, for example, to strengthen connections, to consolidate mutual trust, to give or reciprocate an extra

favor, or sometimes simply be altruistic to help relatives of family connections.

Uzzi (1997) suggested that embedded relations are exceptionally good at transferring tacit information, which is only gained through learning-by-doing and difficult to communicate in market relations. Such effects of tacit information sharing are confirmed in both cases of Yiwu and Dongfeng. For example, Sun Han's followers literally stay with him all day in order to learn quickly the e-commerce skills. The information exchange during their daily life can hardly be communicated by one-off talk or presentation. In fact, Sun Han appears rather untalented in elaborating his practical knowledge -- he obviously knows more than what he can tell. Hence the most efficient ways of learning, for these followers, are to operate e-business along side with Sun Han, and to ask for help in very detailed business operations whenever they feel free to ask.

In Dongfeng and QinYanLiu cluster, constant communication is featured as an effective way of exchanging detailed/fine-grained information. Constant communication is justified by the meanings of social relations embedded in the local context. Neighbours, relatives and friends, of both regions, feel free to visit each other's house -- serendipitously -- and ask for private business information (how much do you spend on Taobao ads service? how many products do you sell today? how did you respond to

specific customer complaints? what is on “hot sale” now? can I get your supplier’s details? etc.). The perception of someone keeping his own secret is generally taken as a negative factor constituting trust-based relations -- from the perspective of local people, honest neighbours have nothing to hide. In such situation of constant communication, valuable, detailed and tacit information that are difficult to transfer via arms-length ties because of either business confidentiality or communicational difficulty, can be effectively exchanged in locally embedded ties.

Joint Problem-solving Arrangements

According to Uzzi (1997), joint problem-solving arrangements refer to those “*routines of negotiation and mutual adjustment that flexibly resolve problems*”. Such routines and adjustments are effectively mediated through social relations characterised by mutual heuristic expectations and extensive communications. Uzzi argued that the joint problem-solving arrangements are much more efficient than market ties because the learning in embedded ties are explicit -- one just gets direct response from the other, rather than extrapolates response from another person/firm’s actions (enter or exit).

This feature of embedded ties is confirmed in the case of Dongfeng and QinYanLiu neighbourhood. In Dongfeng village, Sun Han do not switch to other timber suppliers when he find the materials are not provided as he required (for example, the sources of timber, the cuts and the shapes

turn to be different from what he expects). Instead, he raises his concerns directly to the suppliers, who would then explain in detail why they get these materials and offer replacement options. As such embedded relations continue, the information exchanged between suppliers and Sun Han become fine-grained, holistic and tacit. Supplier knows Sun Han's very detailed requirement, and proactively suggest better options which they believe may attract the client's attentions. In the same way, Sun Han often asks for specific timber materials by simply showing his suppliers a rough draft of furniture design -- based on the experience of mutual adaptation, the latter often knows what he means and acts accordingly. In QinYanLiu neighbourhood, similar relationships of embedded ties take place between local netrepreneurs and their suppliers in the commodity market, and the service providers in the local area (for example, the packaging service, and the delivery service).

Not only do joint problem-solving arrangements take place between actors of vertical supply relations, but also between actors of horizontal relations. By horizontal relations, I mean the groups of actors who are producing the same kind of products or services, and hence situated in competitive positions. In Dongfeng, joint problem-solving arrangements between horizontal actors are mediated by the local collaborative forms of loose-coupling, in which each actor has access to the production capacity of others. In these horizontal relations, learning from others is a very explicit activity -- if someone finds the problems of his neighbour's

products, he or she is most likely to tell the neighbour and joint solve the problem by offering his/her own knowledge. They have intention to jointly address the problems because they are cross-using each other's production facility and the treating others as their capacity reservoir. It is also due to the fact that in locally embedded ties (of loose coupling), exit is not option -- local actors cannot block the trade with other people of the same networks of loose coupling just because he/she finds problems in other's products and remains silent. Again, the meanings of social relations (being transparent, honest and reciprocal) in these local area are the key to the sustaining networks of joint problem-solving arrangements.

So far, I have explained how netrepreneurs in Yiwu and Dongfeng are embedded in local social networks of collaboration in order to become competitive in business. Granovetter's embeddedness theory is insightful in terms of explicating why these particular collaborative forms are taking place in the local social context. The entrepreneurial behavior of both clusters – of having heuristic expectations towards partners, of sharing fine-grained information and production resources, of mutual adaptation and collective learning, while largely deviant from the neoclassical assumptions of *homo economicus*, can actually be concretely justified by the actor's embeddedness in the local social relations.

Netpreneurs of Yiwu and Dongfeng are living in a web of social relations that have manufactured a particular way of articulating e-commerce in local life. In other words, if collaborating via various local networks is observed as the rational behaviour for these local netpreneurs to develop business, it is because they are embedded in the web of social relations that feed a particular set of meanings into their lifeworld. Such meanings that are particularly significant in their local lifeworld include: for example, the understandings of family values and sustained connections between local families, the understandings of neighbourhood's common welfare (rural communitarian values), the understandings of trust accumulated through personal relations, the rural traditions of mixing life with work, the common belief of Internet bringing economic opportunities etc.

Hence, what characterised the clustering of netpreneurs in Yiwu and Dongfeng is that the local actors have been mobilised to actively interpret the meanings of social relations, make sense of their lifeworld, and act upon their understandings in practice. It should be noted that one important source of meanings, that is, the Taobao company and its associated internet business ecosystems, have not been discussed yet. In the next section, I will make detailed analysis of Taobao's institutional role and netpreneurs' practice to interpret and act upon the meanings they subscribed from the Internet.

6.2 Running e-Business: Articulating Online Relations in Managerial Practice

In this section, I trace the social relations of netpreneurs in the context of Internet networks. The first sub-section (6.2.1) documents what is actually happening in the daily life of netpreneurs using Internet platforms to conduct business activities. It explains how Taobao's online software tools have been utilised to assist the daily managerial practice of netpreneurs. The following sub-section (6.2.2) then traces the managerial rationality of these netpreneurs into the interpretive schemes of Taobao's technological platforms, explicating how netpreneurs' daily managerial practice enabled by online software tools are shaped by the existing rules of interpretation on Taobao ecosystem. The third sub-section (6.2.3, 6.2.4) further traces netpreneurs' managerial practice into the contextual institutional forces, particularly the corporation of Taobao's roles in shaping critical interpretive schemes that are highly relevant for the justification of netpreneurs' daily practice.

6.2.1 Managerial Activities

Netpreneurs like Sun Han, Mr. Liu and Lin start their venture from developing close relationship with Taobao (the company and its platform). They submit personal information for identity check and get approved for conducting business in the platform. They sign user agreements in exchange for access to software-based service (most of which are free of

charge), while, in the mean time, setting up a personal account recording all confidential information and becoming subject to the regulatory power of the company and its platform. They trust Taobao to store and process confidential data, and they believe that using the online software enables them to achieve substantial competitiveness in business. Gradually, they learn where and how to find useful information/knowledge on the platform and optimise their daily management with situated interpretations. They develop a wide range of online/offline activities whose significance can be traced into their social relations with Taobao.

But why are these social relations with Taobao -- the company, the technological platform, and the individuals connected online -- so important for them? A general logic, self-evidently in the life of all netrepreneurs, is that the platform makes money for them, by matching millions of online buyers to the products they sell. Then the question is, how exactly does the platform help them sustain business? By following the daily life of these netrepreneurs, I find that there are at least three domains of daily managerial practice that reveal the process of how Taobao actually works with netrepreneurs towards business success. I name these three domains of activities as: the web experience domain, the internal operation domain, and the agility domain.

The ways netrepreneurs conduct their business using Taobao platforms illustrate a process of Taobao networks enrolling netrepreneurs into a

particular meaning framework which make sense of their practice and rationalise their behaviour. In other words, netpreneurs' daily practice in these domains reflects their ways of interpreting e-business management, and hence points to the institutional bearings.

Web Experience

Netpreneurs believe that the consumer's online experience -- that is, the mundane experience of browsing, searching and navigating, chatting, comparing and checking out etc. -- heavily influences the decision of what to purchase, and from whom. So they actively exploit the functionality of Taobao software in order to improve consumer's web experience. Specifically, their experience indicates that there are three areas of functionality that Taobao's online software affords to support web experience: namely, content richness (content), design aesthetics (design), and direct conversation (sales-pitching). Content richness is the dimension which denotes the amount of relevant information detailing the commodities. Design aesthetics dimension refers to the efforts in which netpreneurs work to improve the psychological reception of consumers, using artistic and creative elements to communicate consumption-stimulated messages in easily-received ways. Conversation refers to the dimension in which sellers have effective pitching conversations with the buyers. All three areas of work are supported by a variety of platform software.

Sun Han and Lin, among other ordinary netpreneurs, rely on an online software called Wang Pu to achieve the richness of content, and the aesthetics of design. Wang Pu is very similar to blogger's web consoles that edit the content and styles of blogs (for example, the WordPress's Dashboard). With Wang Pu, netpreneurs are able to manage a wide range of product information and control their online status (stock level, popularity, customer comments, suppliers etc). The software also enables them to change the "look&feel" of the content so that online consumers would find it easy to get key information and feel psychologically receptive to the product. At the same time, they use Aliwangwang, the instant messenger, to directly build up conversation with online consumers -- netpreneurs have developed sophisticated skills of initiating and sustaining online chats. The instant messenger is embedded in web pages which makes it easier for consumers to start an enquiry. They also save contacts (clients, suppliers, friends, neighbours etc.) in the Aliwangwang software, which helps them keep connected with their social networks.

Working with Wang Pu is like working as a blogger. Editing information for the readers -- not only deciding what to say, but also deciding how to say it and how to present it with multimedia objects -- is a highly valuable skill. Successful netpreneurs, like Lin, Liu and Sun Han, are good editors of product pages. Their daily work are occupied by such tasks as writing product texts, shooting product pictures and arranging content in

web-pages. They use the online software to edit and save templates so they don't have to repeat the same design work. They also develop techniques to protect their intellectual property -- such as adding watermarks to pictures -- against online copycats to use their designed templates and pictures without authorisation. The functional support they get from Taobao platform for their daily editing work is expanding as the platform allows third-party developers, designers and service providers to provide support service. Software like Wang Pu is essentially a central "operating system" through which netpreneurs can select, install and remove "apps" they choose from the online "app store" of Taobao.

Internal Operation

Internal operation means the process of activities that handles the transformation from customer enquiry to customer feedback (satisfaction). A general process of such activities can be: responding to enquiries (chatting), checking stock and confirming orders (sending emails), confirming the payment, packaging and preparing information for the couriers, informing the customers the delivery progress, and asking for good feedback or tackling returns/complaints. The efficiency of such process is a major concern for netpreneurs on daily basis. To make the process work properly requires a large amount of labour -- failure to do so results in bad customer feedbacks which effectively lead to lower CGs (credit grade), and being less competitive. Scalability is a key issue to maintain such internal operation process -- hiring extra staff may alleviate

the pressure of service quality but increase the operation cost, while hiring few staff may risk labour shortage, operational chaos and poor feedback. Netpreneurs know that they have to find a way of organising internal process that is scalable to deal with the fluctuating demand of online customers.

To do so, they rely on various management software and service to achieve scalability and efficiency. For example, Sun Han used accounting software to handle customer orders and payments; Lin used shop management software to automatically arrange which product to highlight; and Liu extensively exploit CRM software to keep connections with customers and learn from the history of transaction etc. Many of these software now become available as an app for netpreneurs to install into their Wang Pu system. To cope with the demand uncertainty of Internet retailing -- customer orders could peak as high as several times of the average volume of normal daily orders -- Liu, Sun Han and Lin make their business as flexible as possible, by hiring flexible workforce, maintaining joint inventories, and using online software as a service that are either free or charged based on subscription or usage.

These business service and resources that can be easily “loaded” and “dismissed” by netpreneur’s manipulation are regarded as “disposable resources”. Taobao’s online software service are designed to support the management of such “disposable resources”. For example, its cloud-

computing infrastructure allows the netpreneurs (and third-party service providers) to use just the amount of computing power they need; business support service can be installed or deleted as an app in Wang Pu, charged on subscription fees; human resources management software is capable of adding or deleting temporary employee accounts and controlling their access to the shop management software; the online advertising software is capable of setting fixed time for the advertising coverage of certain search keywords, even capable of customising different web content for customers of different locations etc. It is because of such demand for delivering services that are “scalable” and “disposable” that the sectors of business process outsourcing are quickly emerging on Taobao platform. These service providers can subcontract some or all of the internal operations by guaranteeing a standard quality, promising to liberate the netpreneurs from the day-to-day concerns of internal operations.

Agility

Apart from web experience and internal operation, netpreneur’s managerial efforts are associated with the purpose of pursuing “agility” in business. By agility, I mean the capability of rapidly delivering new product and service customised to niche demand, so that the economies of scope become a more important source of competitiveness than the economies of scale. In the case of Dongfeng and Yiwu, I found that the netpreneurs are working to develop two kinds of capability in efforts to

achieve agility: namely, adaptive learning and responsive delivery. To be agile, they first learn what their customers are looking for and discern the behaviour patterns of online shoppers. Such capability of adaptive learning is closely associated with the ways netpreneurs use online software to maintain constant communications with their customers -- Aliwangwang as the instant messenger is the tool they use to directly ask what their customers are really looking for; Wang Pu is the back-office web console that can track the behaviour of online customers by recording the browsing history of each IP address and the length of stay on each page; DataCubics is the dedicated data analysis software that netpreneurs use to learn the real-time emerging patterns of shoppers etc. With various platform software, it is possible that the manufacturers and retailers maintain engagement with the customers, which allows abundant opportunities for customer-participated design, manufacturing and marketing. For example, on daily basis, Sun Han and Liu's furniture business deals with customers who provide design ideas and ask if they can produce and deliver in time, while Lin's cosmetics business depends on the feedback of customers to decide which groups of products should be highlighted and what search keywords should be chosen as main descriptors and therefore should be auctioned and featured in search results.

The capability of adaptive learning may take different forms: sometimes they let the customers to configure the product by modulars before

manufacturing, and sometimes they allow the customers to come up with a completely new design and customise the product for individual shoppers. It has been a common practice among netrepreneurs that they “sell” the products before these products get manufactured. What happened is that they list these products on Taobao and collect customer pre-orders. With pre-orders, they manufacture the products and deliver them to customers. There are several reasons for such practice: 1) they have the freedom to list a wide variety of products on web without having to keep these products physically in stock. By doing so, they maximise the chances for the customers to choose the product they want, and minimise the risk of betting on a narrow range of products ; 2) with pre-orders, they can make much more informed decisions on production plans, making their production lines more flexible and agile through the mobilisation of “disposable resources”, for example, by hiring extra part-time workers and buying raw materials just as the orders require, without storing a large amount of materials.

What is important for achieving agility is the ability to deliver customised product or service responsively (literally, just in time), which means manufacturing the customised products swiftly, maintaining flexible and responsive supply relations, and using reliable courier service. Netrepreneurs know very well that without flexible production lines and responsive suppliers, they would fail to translate the fine-grained demand information learnt from online customers into final products and positive

feedback. In Dongfeng's case, Sun Han and Liu both maintained the production-lines in-house, hiring flexible workforce and designing the production process by themselves, just to make sure that the process from customer pre-orders to final products delivery is under control. To do so, they also have to rely on a few local suppliers of timber materials and local logistical companies who provide responsive support for their agile manufacturing. For Lin and her local groups in Yiwu, the capability of responsive delivery can be achieved by grouping with entrepreneurs of different production focus and building up long-term exchange relations with each other. For example, entrepreneurs in Yiwu QYL neighbourhood formed up collaborative groups -- through Taobao's various social networking services -- so that members of the group can share their manufacturing capacity and expertise. Some local entrepreneurs become so successful in organising such production groups that they become the wholesaler to supply products to local entrepreneurs. Embedded in these groups, entrepreneurs are able to take pre-orders of a variety of customisations, and then use their social networks of partners to fulfil their customer orders -- either through methods such as subcontracting, warehouse-pooling, or simply re-directing customers to their partners' web pages.

6.2.2 Managerial Rationalities

What is common between the daily experience of Sun Han, Mr. Liu and Lin is the ways they align managerial practice with their rationalisation of

daily work on the platform. It is for sure that these netrepreneurs aim for commercial success in one way or another. The vital question is: why are the three domains of activity -- web experience, internal operation and agility -- so important for their success? In other words, how do these netrepreneurs justify their daily behaviour in the sense that focusing on these three domains of activity would actually lead to commercial success? First, let me explain such managerial rationalities in each domain.

Web experience domain. Netrepreneurs work hard -- like a magazine editor -- on the design of webpages for one simple purpose: to attract the eyeballs of online shoppers and to promote sales. They believe that customers have more intentions to buy if the information is rich and clear, the pictures are detailed (eyeball-attractive), and the general browsing experience are entertaining (including good service attitudes). This logic only makes sense in the context of Taobao platform because: a) Taobao is a grassroots market where brands are not properly functioning to indicate quality or other key purchase information -- the mass online consumers do not know any of these grassroots brands (except those using fake brands, in which case sellers risk of being punished by Taobao as counterfeits). In order to compete, netrepreneurs like Sun Han and Lin have to earn their reputation by actually selling the product and gaining positive feedbacks; b) the online market has such a large number of webpages selling similar products that the quality of web

experience becomes a key factor to stand out in competition -- browsing each seller in detail and rationally compare the difference between them is simply impossible given the sheer amount of information provided by search engines.

It is because of such a huge amount of information on Taobao that consumers are looking for several key indicators to short-cut the decisions on what to browse. Hence, arms-length transaction is not the end of purpose for netpreneur's managerial work -- more importantly, they are looking for ways to improve the performance of key indicators. The index of Credit Grade (CG), as I have explained in Chapter 5, is one such indicator that consumers rely on to make decisions (what page to visit, and what product to buy), which, effectively, become the focus of netpreneur's managerial work. Since CG is calculated based on historical transactions (volume, frequency) and customer feedbacks, high CG scores indicates good reputation and long-term experience. So an important logic of netpreneurs working on web experience domain goes like this: good web experience --> volume of transactions --> good customer feedbacks (or bad feedback) --> increasing CG scores (or decreasing scores) --> higher (or lower) visibility in search results --> more (less) customers and more (less) transactions --> increasing (less) CG scores, on and on.

Internal operation domain. The managerial practice of internal operation can be simply described as the domain of activities to maintain the quality of service and product, while controlling operational cost. It has a straightforward input/output logic: to use management resources to transform customer visits to customer satisfaction, measured by the score of customer feedbacks after transaction. Since the output of internal operation has a direct impact on the score of CG, it is probably the most laborious process that netpreneurs have to deal with on daily basis. The managerial rationality is simple: internal operation --> customer feedback (service quality and speed) --> increasing CG scores --> higher (or lower) visibility in search results --> more (less) customers and more (less) transactions --> increasing (less) CG scores, on and on.

Agility domain. The flexibility to customise product for niche market demand is a vital strategy for growth on Taobao. Netpreneurs, with little capital and limited capability of innovation, are already selling their products on very slim margins. While selling-stuff-cheap might be the initial advantage of operating on Taobao, it is simply unsustainable in the fierce competition of online market where there are thousands of sellers selling similar products with equally low profit margins (some of whom are not even liable for taxes). To be outstanding, netpreneurs like Mr. Liu, Sun Han and Lin know that there are two principle strategies to follow: either 1) to develop a high reputation for their business through key descriptors like brands or CGs, so that they distinguish themselves

by good customer feedback and reliability of good quality -- advantages generated by search engine filters; or 2) to develop the capability of providing a wide range of products or service , especially those that are not sold in high volumes, where the scale of mass production is not realistic -- advantages generated by flexibility and the long-tails. Most entrepreneurs in Dongfeng and Yiwu follow both strategies -- to grow reputation in mass sales while staying flexible on the range of products by allowing customisation. So the managerial rationality in agility domain is like this: customisation --> increasing the range of products (the long-tail) --> more customer visits and customer retention --> more transactions and positive feedbacks --> higher CGs, and on and on.

Activity Domains	Aims	Typical Logic of Reasoning
Web Experience	Finding Customers: Promoting Sales	Web experience --> sales volume -> CG -> search regimes -> online eyeballs -> finding the customers --> sales volume....
Internal Operation	Controlling Cost and Quality: Productivity	Internal operation --> positive feedback -> CG -> search regimes -> online eyeballs -> finding the customers -> positive feedback...
Agility	Product Diversity: The Long Tail	Long tail, customization --> Customer Retention & Eyeballs -> sale volume -> positive feedback -- > CG --> search regimes --> online eyeballs...

Table 6-1 Managerial Rationalities in Three Domains of Activity

These netrepreneurs' practice reflect their particular interpretations of how Taobao systems work to support online business. The above analysis of managerial rationalities in each domain of activity suggests that to grow up on Taobao platform, netrepreneurs need to act upon the circulation process of three key domains of information – information tokens -- stored and utilised by Taobao platform: the eyeballs, the account record, and the key descriptors. The domain of eyeballs simply refers to the amount of customer visits that each product page attracts. Eyeballs are the pre-condition of operating online business and most commonly measured by PVs and UVs. To increase eyeballs, netrepreneurs developed many different methods. Most methods are related to the mechanisms of search engines (SEO), and online advertising. Alternatively, some netrepreneurs exploit various Web 2.0 tools to self-broad content in order to become a celebrity which naturally attracts eyeballs. The domain of account record refers to the comprehensive profile of a seller and his/her product page, for example, the history of transaction, customers, customer feedbacks and ratings, locations etc. The domain of account record aims to describe in detail that who the seller is, what he/she is doing on the platform, and how he/she is rated in each transaction. The domain of key descriptors is a collection of descriptors that is capable of characterising and categorising sellers into different groups. The prime example of such domain is CG index, the metadata descriptor that is calculated based on the data of historical transactions and feedbacks (ratings). This domain also includes

search tokens (tags), some of which are available to be auctioned for advertising purpose. Other examples include popularity indicators (calculated based on PVs and UVs), sales volume indicators, new product indicators, Aliwangwang availability indicators etc. Any codes or tags that can be used to quickly refer to a seller or a product page should be counted in the domain of key descriptors. These indicators or the combination of them work as filters to help buyers quickly browse many product pages without spending too much time. So the main purpose of this domain is to help buyers make decisions on what to look at and whom to deal with, with indexed metadata measuring how sellers have performed, what precisely they sell, and how they are rated or described by others.

In principle, the circulation process of the three information domains (tokens) goes like this: the domain of eyeballs gets translated, through entrepreneur's managerial practice, into the domain of account records (P1); the domain of account records, then, through various algorithms of indexing in Taobao platform, gets translated into the domain of key descriptors (P2); the domain of key descriptors, in turn, through both managerial practice and Taobao software (mainly the search engines), gets translated into the domain of eyeballs (P3).

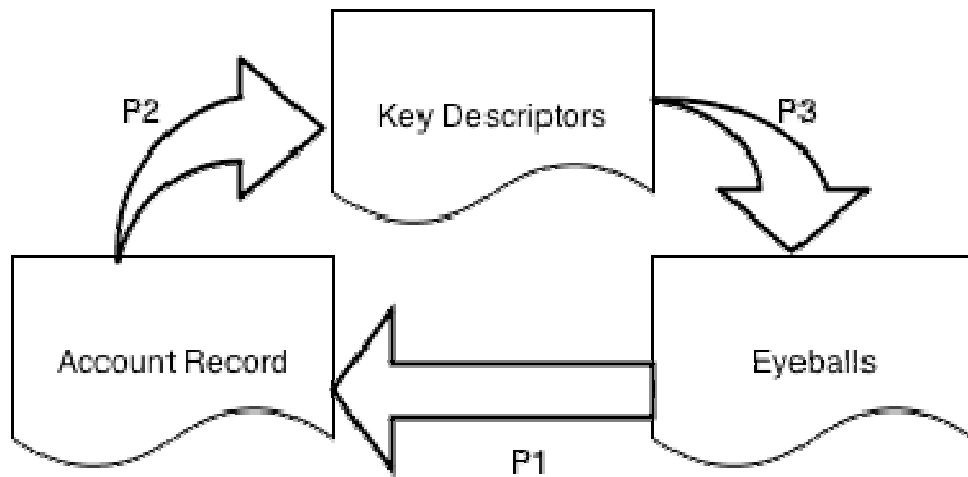


Figure 6-1 The Circulation of Information on Taobao Platform

To be embedded in Taobao's platform is essentially to be embedded in the complex cognitive environment of digital tokens and the continuous cycles of sense-making and rationalization with meanings delivered through technology. It is the P1 process, that is, the transformation from eyeballs to account records that most netpreneurs have spent their daily work on. P1 refers to the process in which customer visits are transformed into customer satisfaction -- transaction done, positive feedback received. The process requires the efforts in all three domains of activity: customers browse the webpages, chat with staff and get good web experience; after making orders, they may track the delivery status, receive the correct products with the correct specifications in time, which requires the effective work in the domains of internal operation and agility. P2 process, the transformation from account record into key descriptors, involves less netpreneurial activity, but more algorithms of indexing and rules set by Taobao platform to categorise sellers (as well as buyers).

It is the production process of metadata -- producing refined, interpreted information out of the ocean of online information. I will specify this process in the following section.

P3 process -- the transformation from key descriptors to eyeballs -- involves the institutions of matching customers to products. A prime institution at work in this process is the search engine -- search engine, with its fixed algorithms, use key descriptors and the search tokens to return the lists of sellers that potentially match the customer's demand. The major domain of practice working in this process is the domain of agility. By maintaining a long tail of products listed online, netpreneurs maximise the chances of being searched and therefore more likely to be visited. Alternatively, netpreneurs may work out ways other than search engines to get eyeballs, for example, by paying advertising fees to popular websites which might bring into many eyeballs. Such circulation process (P1--> P2 --> P3 --> P1...) is a self-reinforcing process which means that as long as they find ways to improve eyeballs, and they maintain good managerial practice, the search engines will eventually work to the advantages of their growth.

It is important to note that this is not a claim that the principle of information circulation process is necessarily the fundamental mechanism of how Taobao platform actually works to mobilise netpreneurs -- the fieldwork data I collected are simply insufficient to

support it. Instead, I present this principle to illustrate the ways netrepreneurs like Lin and Sun Han have interpreted the workings of Taobao platform and acted upon their understandings in daily management practice. The principle of circulation, therefore, is an example of the underlying interpretive schemes that local actors adopt to make sense of the world and act upon the meanings in practice. In other words, netrepreneurs, like Sun Han, Liu and Lin, are framed in a set of institutional logic originated from the Internet that justifies their ways of doing things. Let me further specify these institutional logic and trace the origins of their actor-networks in the following section.

6.2.3 The Networks of Meanings -- Openness, Sharing and Collaboration?

Until now, I have established the theoretical arguments to explain why the local netrepreneurs are adopting the particular forms of local collaborations and how their daily managerial practice can be justified by their interpretations of meanings on Taobao networks. In this sub-section, I further trace these local netrepreneurs' managerial rationalities into the internal mechanisms of technology (Taobao platform) and aim to explain how these netrepreneurs' interpretations (beliefs, good practice, routines) can be justified by the specific governance mechanisms of Taobao's technology platform. I argue that *Taobao platform works as an institutional environment which shapes netrepreneurs' online networking*

behaviour with several key interpretive schemes. These key interpretive schemes justify the ways – the collaborative forms, the local social relations -- netrepreneurs conduct their business on daily basis in the local area.

Since the netrepreneurs' daily practice is aimed to translate the P1 process -- transforming customer visits (eyeballs) to accumulated transactions and good feedback (account records), the key question to trace is: why does it (P1) matter? why is it not the case that netrepreneurs place profit maximisation as the top priority of transactions? What kinds of institutions (interpretive schemes) are working to justify the purpose of P1 process? How are these institutions related to the life of the local netrepreneurs? These questions point to the ways P2 and P3 processes work to help netrepreneurs find customers on the Internet networks.

In this section, I further trace netrepreneurs' rationalities from their daily practice to the ways Taobao platforms work to support their business. I argue that Taobao platform is an institutional structure that shapes netrepreneurs' online networking behaviour with a number of key interpretive schemes. These key interpretive schemes justify the ways netrepreneurs conduct their business on daily basis.

An Organising Vision

Taobao, the company and its platform, orchestrates an “organising vision” (Swanson and Ramiller 1997) in Chinese cyberspace. It portrays an ideology of business ecosystem that depends on Internet’s network arrangements to facilitate collaboration and ensure trust. Following Swanson and Ramiller’s (1997) terminology, Taobao company has been actively fulfilling the interpretive, legitimising, and mobilising functions of an organising vision. Such organising vision can be summarised as: an Internet-based network that has open, sharing and collaborative relations between its members contribute to the business success of everyone. The company’s interpretive role is clearly seen when Jack Ma, the founder, assumes the role of innovation guru and preaches the idea of “new business civilisation”, defining it as the modus operandi of Taobao network. Coming from grassroots background himself, Jack Ma’s interpretation has been extremely influential among Chinese entrepreneurs.

In a public speech in 2009, Jack Ma said: “we have an aim in the coming decade -- to create a business platform for over 10 million micro-business to grow and succeed, to generate 100 million job opportunities worldwide, and to provide a shopping platform that supports 1 billion consumers....we have no intention to be an empire, but a strong determination to become a market-based business ecosystem...our strategy has three key principles -- open, sharing, and collaboration”

The legitimising influence of this organising vision, of creating wealth by doing business collaboratively via the Internet, not only draws upon the contemporary discourses of social progress through technology, but also draws upon the realistic class politics in China -- empowering and uniting the poor. In Chinese society, there is a cynical common sense that business success requires “guanxi” networks. “Guanxi” refers to the established social ties (classmates, family connections, former colleagues etc.) that can be capitalised as network mechanisms to access trust and favour. Guanxi networks are, therefore, associated with the class status in China. Although members of Chinese society know that guanxi networks harbour corruptions and defy the modern value of social equality, they, nonetheless, regard such networks (of favouritism, of patron-clients) as an important personal asset. In this context, the ideal of Internet business network, to create a virtual space of assumed-trust and collaboration without guanxi privileges, is translated from an IT innovation to a discourse of real politics in China. Taobao champions this discourse of social change, with its charismatic leader Jack Ma repetitively alluding to Mao’s anti-elitism rhetorics.

Ironically, this is the domain of politics that the Chinese Communist Party has skilfully avoided since Deng’s Reform, for the fear of returning to Maoist era. The fact that Taobao network targets grassroots entrepreneurs and relies upon grassroots’ success to develop its influence gradually finds its way into the real politics in China. It becomes

no surprise that the Taobao company takes every opportunity to publicly express its concerns for social responsibility and show the ways Internet may contribute to a better society. The company clearly delivered the message that its own success depends on the collective success of grassroots entrepreneurs on its platform. So the legitimising influence is that they make Chinese grassroots believe the Internet is their fair opportunities for wealth creation.

The mobilising feature of this vision is clearly seen in the ways the company execute its principle strategies (open, sharing and collaboration). In terms of service provisions, for example, the company engineered its software platforms in Web 2.0 protocols – to create a platform of open standards which allows interoperability, providing software service over the cloud, as well as an architecture of providing, remixing data from multiple sources, particularly the peer-to-peer user-generated data. The company invites the third-party developers to co-develop software via its standard interfaces, sharing its data, software and computing resources to empower individual users. The company also orchestrates the efforts of Internet advertising by offering external websites (content contributors) the opportunity to advertise Taobao sellers in return for profits of counting internet eyeballs. Moreover, Taobao mobilises its service platform in such a way that individual entrepreneurs rationalises their practice according to this organising vision -- being transparent, sharing information and collaborating with

others on Taobao platform is not only the “good” thing to do, but also the rational behaviour for business. Let me explain how Taobao rationalises the online business practice to support its three principles and the organising vision -- again, from tracing the rationalities of netpreneurs.

6.2.4 Matching as Regulative Control

The significance of P1 process depends on the working of an essential institution in the world of Taobao system: the web of information flows sells stuff, that is, the relentless process of matching seller with buyer. On one hand, millions of buyers are browsing web content as well as participating in the production of it (search, blogs, social networks, video and audio, news&magazines etc.). On the other hand, Taobao hosts a large number of sellers who are trying to reach as many buyers as possible. These sellers exploit various communication channels to attract and retain customers. The competition for consumer’s eyeballs is fierce. It is imperative for Taobao -- if the company’s strategy is to become a dominant shopping platform, a vibrant online business community -- to work out mechanisms to facilitate such matching process sustainably. That means a set of interpretive schemes to rationalise certain types of behaviour (supposedly those kinds of openness, sharing and collaboration), making other behavioural agency illegitimate in its institutional environment.

For example, if the data of historical transactions is not utilised to indicate the key performance of Lin's business and thereby to improve her chance of being searched and visited by potential customers (P2 & P3), the legitimacy of P1 process for Lin, that is, to work for a good record of transaction history, become questionable: why is she more bothered with urging customers to leave good feedback than with maximising profits in each transaction? According to Granovetter's (1984) embeddedness theory, actors pursuing pure profits from arm's-length transactions are susceptible of opportunism and malfeasance. So if opportunistic behaviour and malfeasance are not the rational things to do, it must be the fact that such historical data feeds into a process of rationalisation which rewords certain types of behaviour with favourable conditions of distributing eyeballs. Such process of rationalisation is where these netrepreneurs like Sun Han and Lin are "virtually" embedded.

Specifically, how do Taobao networks rationalise netrepreneurs' managerial practice so that they believe certain behaviour models lead to business success? This points to the ways Taobao networks collect, process and make use of user information (data) for the purpose of matching process. Broadly speaking, there are three major interpretive schemes through which netrepreneur's managerial rationalities can be justified: namely, the user-generated-data (UGD) scheme, the indexing scheme, and the corporate control scheme. Each interpretive scheme can be seen as a hermeneutic cycle between human actors and

technology – entrepreneurs have to keep catching up with meanings generated through digital tokens and respond with appropriate actions which, captured (in-formated) by the technology, further reinforce the meanings of belief they get from the technology (Figure 3-3). Let me explain how such symbolic interactions work in each interpretive scheme.

Firstly, Taobao system is a platform of user-generate-data service. Not only does it provide the functional possibilities for users to generate their own content (and data) -- webpages, blogs, micro-blogs, public forums, groupware, social-networking-sites, peer-to-peer-sharing, e-auction etc. - - but also it promotes a participatory culture among users, with a set of rules which rewards those who actively contribute and share content on its networks. For example, the network effect -- that is, the more people contribute to the platform, the more valuable the platform becomes in terms of being connected to -- is at work. The same effect applies to individual users as well -- the more connections one possess on the platform, the more valuable one becomes in terms of being connected to. Under this regime, individual's agency is shaped by the motivation to become more and more connected to other users -- since eventually connections lead to better distribution of eyeballs. To do this, entrepreneurs have the incentives to share as much content as they could in online networks and to become high-profile in the online communities -- they have the incentives to do so because being open and transparent is the key to building up sustainable social connections.

The service of user-generated-content provides the conditions under which netpreneurs like Lin and Sun Han increasingly modify their behavioural agency from a market player (*homo economicus*) towards a member of community (*homo sociologicus*). Indeed, the prime purpose of these netpreneurs remains predominantly focused on economic prospects. However, the vital difference is that with UGC tools -- “likes”, “aliwangwang friends”, “fans”, “followers”, “RSS readers” etc. -- netpreneurs are able to construct substantial social relations with potential buyers in the practice of sharing media content, participating in public debates, and organising social movements. Becoming an “Internet celebrity”, for example, is a typical example of such individual agency. By gaining fame on the Internet, netpreneurs manage to associate their business with some “key descriptors” (P2.2), for instance, fashion taste, specific products, media narratives, socio-political campaigns, brand names etc., which effectively translate one’s own networks of social relations into specific search tokens or search filters (P2.2), and consequently leading to the eyeballs (P3.2). The logic can be summarised as: P2 -> P3 -> P1.

Not only content, but data are generated and processed on Taobao platform. Taobao platform actually works like a mass-surveillance system that tracks and records nearly every aspect of user’s online behaviour -- browsing history, search history, transaction history, address, social ties,

chatting and comments, banking details etc (P1). Being conscious of the fact that Taobao is watching them in every detail, netpreneurs have intentions to behave in ways that are generally perceived as “good conduct”, in order to become competitive. Moreover, they learn through experience the ways Taobao platform interprets their behaviour data and adaptively adjust their behaviour to match the system’s interpretive schemes (P1). The logic of interpreting this scheme is: P1 -> P2 -> P3.

Secondly, the index scheme refer to the understanding that Taobao’s algorithms collect, compute and combine various user-generated-data, and translate them into a few key descriptors (P2) to indicate some qualities of netpreneurs. Essentially, this is a process of producing information out of information -- generating metadata by data-mining techniques. What matters, for netpreneurs, is the input and output of such metadata generating process -- what kinds of metadata Taobao system uses to distribute eyeballs (P3), and what kinds of data have been used as input for computing metadata (P2). Credit Grade, for example, is a pillar indexing scheme. As described in Chapter 5, CG is rating scheme that is designed to measure the trustworthiness of individual users (seller and buyer) based on their historical behaviour on the platform -- a key descriptor. In Taobao system, the higher rating a seller gets (P2.1), the larger possibility of this seller being matched to buyers (P3.1), and then possibly gaining even higher CGs (P1->P2->P3). For sellers, the CG algorithm prescribes a number of behaviour

principles, for instance, honest in description, good service attitudes, responsive service, delivery speed etc. This algorithm also prioritise certain behaviour patterns, which netrepreneurs need experience to learn and adapt. For example, the algorithms may generate higher scores if the netrepreneurs are 1) to make as many deals as possible (not as big deal as possible); 2) to achieve as high daily average revenue as possible; or 3) to gain strong momentum of revenue growth etc. Apart from CG index, the Taobao system dynamics calculates an increasing range of key descriptors based on the the massive data the system collected from users (i.e. recent sale volume, popularity, new arrivals etc.). The same indexing schemes work for buyers as well -- a pattern of shopping (browsing) history help the system to generate recommendations for search, browser and buy. Buyers get the benefits of quickly reaching the content they might like at the expense of submitting -- wittingly or unwittingly -- behaviour data to the control of "content-customisation" regimes (P2.3, P3.3). These key descriptors mainly serve as the search filters so that buyers can be quickly matched to the products they are looking for.

Another pillar index scheme is, of course, the search ranking scheme. Different from Google's search engine, which is dependent on the algorithms of calculating page-ranks, Taobao's search engine relies heavily on the exploitation of key descriptors -- metadata and meta-content. When users search on Taobao for products, the search engine

first goes through major metadata of the content such as titles, tags, catalogue trees, instead of searching the whole content of web pages. The search engine then utilises various filters (key descriptors) to refine search results. The search engine then list results based on user's own configured preferences: CG rankings, featured images, recent popular sellers, new arrivals etc. Such index scheme actually prescribes some behaviour patterns for sellers: for example, to have the correct keywords for titles, always to tag the products, always to be available on Aliwangwang, to use high-quality picture, to regularly update product page, to advertise the product to gain popularity etc. The combination of these techniques and their manipulation in complex business situations makes the managerial work of online business a highly complex body of knowledge. So the logic of this interpretive scheme is: P2 -> P3 -> P1.

Thirdly, the corporate control scheme. The company of Taobao controls the flows of Internet traffic (eyeballs) in a similar way as a central bank controls its circulation of currency. The company makes policies regarding the distribution of eyeballs (currency) into sellers -- essentially, who gets how many (eyeballs) based on what rules. Sellers then have to work hard to transform these eyeballs into good customer feedbacks (P1), which brings even more eyeballs (currency) back into Taobao (P2, P3). While a large part of such policy has been inscribed in software algorithms and "automated" in the daily practice of netpreneurs, the company is mobilised to "manually" control the flows of eyeballs. Such

control is always aligned to the business strategy of the company. For example, to match buyers and sellers, the company's core strategy is to organise marketing campaigns and promote consumption culture. Marketing campaigns include a wide range of online/offline activities designed to promote the eyeballs on Taobao platform (in Taobao jargon, these campaigns are called huó dòng, meaning movements/activities). Within Taobao company, the ideas of marketing campaigns are treated as business proposals. Different internal groups are competing -- as well as collaborating -- to get approval from the corporate authority in order to get funding for campaigns. These campaigns involves the promotion of certain products or services, sometimes for charity purposes, aiming to boost eyeballs for targeted groups of sellers, which the company regard as a "profitable" investment. The corporate authority then monitors the performance of these campaigns based on the how efficient these campaigns can bring or distribute eyeballs, adjust their policy of eyeball distributions accordingly. These practice represent the company's arbitrary power in controlling the eyeballs of its platform. The ways the company decides which sectors, or which groups of sellers to boost in terms of eyeballs, becomes sometimes a bureaucratic procedure. So the logic of this interpretive scheme is: P3 -> P1 -> P2.

To summarise, embedded in the networks of Taobao, netrepreneurs have to work for three main domains of information: eyeballs, account record, and key descriptors. A successful online business requires the

positive circulation of all three domains of information: P1--> P2 --> P3 --> P1. Based on various interpretive schemes they learn from Taobao experience, netrepreneurs may develop different strategic moves to promote their performance. For example, some netrepreneurs relied on the three key domains of managerial activities (web experience, internal operation, and agility) to work for a good account record, in turn, a higher CG, and then higher possibility of eyeballs (P -> P2 -> P3); some other netrepreneurs may develop successful social media strategies so that they become famous online (large online connections), which gives a boost on key descriptors (search tokens) and eyeballs, which may eventually be transformed into good account record and key descriptors (CG) (P2 -> P3 -> P1). Still others may take the advantage of taking part in Taobao's marketing campaigns and then directly get boost of eyeballs (P3 -> P1 -> P2).

Matching Institution	Chain of Logic
UGC	User content -> social connections (fame) -> search tokens (KD) -> EYEBALLS -> AR...
UGD	(User Data) AR -> KD -> EYEBALLS
Indexing/Search Scheme	CreditGrade (KD) -> EYEBALLS -> AR...
Corporate Scheme	Corporate Control (EYEBALLS) -> AR -> KD...

Table 6-2 Interpretive Schemes of Matching Insitution

For netrepreneurs like Sun Han, Lin and Mr. Liu, internet network is the overarching regulative regime, whose technical knowledge (regulative), behaviour norms (normative), cognitive symbols (cultural) provide key interpretive schemes to justify and modify their own managerial practice in the local area. Technical knowledge is the body of practical knowledge, largely gained through learning-by-doing in the environment of Taobao's online software. These knowledge, such as the techniques of SEO, web-content editing, social media marketing etc., feed into the rationalisation process of netrepreneurs' managerial decisions on how to improve performance effectively and efficiently. Behaviour norms are the interpretive schemes that netrepreneurs adopt in practice to make judgement on what is good and what is bad behaviour. Such behaviour norms are understood and internalised by netrepreneurs through their daily interaction with the online software, particularly the algorithms of generating and utilising the metadata inscribed in a wide range of online networking software. Cognitive symbols are mostly seen in the orchestration efforts of an "organising vision" by the company Taobao. The company attempts to politically legitimise its business by associating its platform with the discourse of empowering the grassroots class in China. Their spiritual leader, Jack Ma, is the icon of online business, whose theory of e-business is symbolically influencing the ways netrepreneurs understand their business, and rationalise their behaviour.

6.3 Hybrid Sociality

Based on the analysis of netpreneur's cognitive embeddedness in the digital environment of information tokens and references, it becomes possible to see how the local actor's economic rationalities – collective bargains, loose coupling and flexible specialization etc. – have essentially been governed by the Internet's organizing mechanisms, particularly the mechanisms of connectivity. It is true that these netpreneurs rely on the locally embedded ties – trust, fine-grained information sharing, and joint-problem solving – to build up locational advantages, consistent with the findings that traditional embeddedness literature has already demonstrated (Uzzi 1997).

However, what is new and important in this case of netpreneurs is that the fundamental understandings of (good) business practice have become negotiable as a result of the intervention of the internet technology, which gradually finds its way to re-define the rationalities of economic behavior in the “languages” of online connectivity (CG, search tokens, popularity, etc.). The key strategy (or modality) that the internet technology adopts to govern social practice, in this case of netpreneurs, is to *frame* netpreneurs' life world with computable, comparable and combinable digital references (data, tokens and various digital objects), to invites human actors to make sense of the linkages between these digital references, and to rationalize their daily practice with the understandings of the digital references. The fact that the local netpreneurs have increasingly relied on digital references (search

tokens, ratings, social network connections etc) to make sense of their local managerial activities illustrates the critical point that these local clusters of e-commerce can be seen as part of a larger economy which works to commoditize the internet flows (connectivity).

By the framing process of rendering economic activities into data and processing data into tokens, the internet has fundamentally changed the ways economic activities have been organized in local context. During such framing process, the practical meaning of competitiveness gradually shifts away from the actual ways the netrepreneurs manufacture the things (service) at low cost and streamline other support process, to the computable, comparable and combinable digital references that are supposed to render how well they performed in their business – a typical example to illustrate Kallinikos' (2010; 2013) point that a new layer of reality emerges as a result of the cognitive embeddedness in technological information habitat. The local economies of manufacturing commodities and selling online, be it in furniture manufacturing or fashion business, form as a part of the larger internet network economies in which the flows of eyeballs can be generated, commoditized and circulated. Hence, hybrid sociality works in the way that the local embedded social relations (trust, fine-grained information sharing, joint-problem solving) have been organized to render “higher scores” of digital references, and thereby to commoditize the flows of online connections, and to further increase the connectivity of local

actors. Embedded in such hybrid sociality, entrepreneurs have two domains of practice to promote business performance – either to strengthen local collaboration through locally embedded relations (trust, fine-grained information sharing and joint-problem solving) or to strengthen the online openness, connectedness and participation to boost connectivity. The regulative regimes of internet’s token-based informing and sense-making processes make sure that local embeddedness and online embeddedness are mutually contributing to each other’s effectiveness (see Figure 3-4).

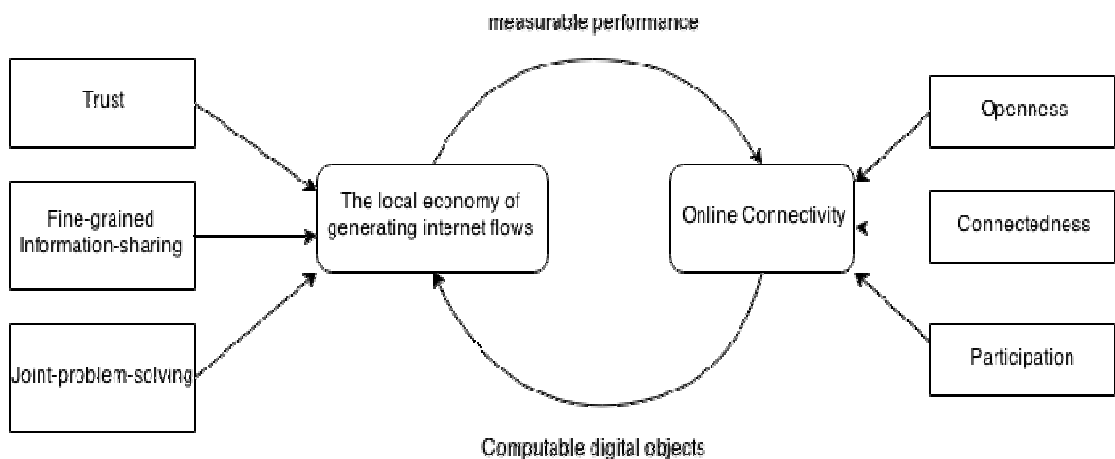


Figure 3-4 Embeddedness as Hybrid Sociality

Previous attempts of theorising the embedded ties of Internet networks tend to juxtapose virtual space with material space. For example, Fowler et al (2004) argued that virtually embedded ties are characterised by three principle components – transparency, widespread sharing of private and public information, and community-based problem solving, in

contrast to Uzzi's conceptual components of embedded relations in material space (see Figure 3-1). Each component represents alternative arrangements of social ties to address the problems of opportunism, uncertainty and complexity. This section offers a critique of virtual embeddedness theory, by arguing that social relations of digital networks and local social networks are intertwined, intersected and co-produced.

Virtual embeddedness theory contends that virtually embedded ties resolve the problem of opportunism by arrangements of transparency in which firm's (individual's) historical behaviour are openly accessible to exchange partners, reducing information asymmetry and increasing the reputation cost of malfeasance. As Fowler et al (2004) argued:

“...unlike socially embedded ties, which increase the costs of opportunism through the damage it might do to specific, long-term relationships, virtually embedded ties increase the costs of opportunism through the degradation of a firm's reputation and the subsequent effects on its ability to develop new relationships with consumers, suppliers or partners...”

In the case of Taobao and netrepreneurs, opportunistic behaviour is indeed curbed by the process of information collection and processing aimed at transparency. For example, individual's historical trading records are automatically published by Taobao system on the profile page of netrepreneurs, including the detailed rating and comments of

customers. Netpreneurs in Dongfeng and Yiwu indeed have a great concern over the general online reputation, which is represented by various software objects such as CG, ratings, and other key descriptors. Such computational construction of public reputation is a part of the interpretive schemes designed by Taobao networks, whose inner institutional logic encourages honest trading behaviour and well-managed customer relations.

However, such transparency arrangements are, by no means, in a position to replace the role of inter-personal trust relations. Just as Granovetter insightfully indicated that a general morality cannot replace the role of inter-personal ties in ensuring trust of economic exchange (1985: p489), the institutional arrangements of transparency in digital networks are complemented by the presence of strong local social relations to actually prevent malfeasance in daily life. In fact, it is rather dangerous to conceptually attribute the institutional arrangements of transparency as a feature of virtually embedded relations, because an overemphasis of such institutional arrangements tends to suggest an over-socialised account from which Granovetter's embeddedness theory disagreed. As Granovetter would argued, "*substituting these institutional arrangements for (inter-personal) trust result actually in a Hobbesian situation, in which any rational individual would be motivated to develop clever ways to evade them...and everyday economic life...poisoned by ever more ingenious attempts to deceit.*"

Hence, what effectively explains the high degree of trust between local netrepreneurs of Yiwu and Dongfeng clusters is the cognitive embeddedness in digital information habitat as well as the locally embedded relations. On one hand, netrepreneurs work hard on Taobao networks to improve the account record of trading history (and key descriptors) so that these historical behaviour can be translated into key descriptors of a general reputation (i.e. CG index). The institutional arrangements of transparency improve the chances of netrepreneurs to find new customers and to maintain relations with current partners and customers. Without the indicators such as CG and the publicly accessible historical information, it would be very difficult for netrepreneurs to manage economic relations with a large number of customers and partners on daily basis. On the other hand, netrepreneurs heavily rely on the support of established social ties -- local communities of rural families, college graduates, and trade communities - - to actually deliver inter-personal trust which is key to the conduct of daily business of online selling, offline manufacturing, sourcing materials, and arranging deliveries.

In this “recombinant architecture”, social relations of local communities have been increasingly shaped by the the visions, norms and regulative mechanisms of digital networks. Netrepreneurs, who internalised the institutions (interpretive schemes, and regulative mechanisms) of doing e-

business in Taobao's networks, infuse such online institutions into the offline social relations of local communities, enabling new forms of economic collaborations. For example, through their online participation of various Taobao networking activities, local netpreneurs subscribe to the organised vision of "open, sharing and collaboration". It is because of this shared vision – and the normative, regulative and cultural-cognitive institutions defined by this vision – that building up trust relations in these local communities becomes much easier than those communities of similar rural backgrounds without Taobao's organised vision.

On the other hand, the institutional arrangements of trust organised by Taobao networks cannot guarantee the presence of trust in local community. Trust relations are worked out by specific actors in their specific process of mobilising other actors. For example, Sun Han, in the context of rural community, translates the institutional logic of Taobao networks across the social networks of his neighbours, friends and relatives, with his own styles of mobilising, collaborating and communicating with local people. Lin of Yiwu cluster, translates similar institutional logic through her own social networks of college alumni, association colleagues, and neighbours, by weaving together social relations through her own experience as local resident, netpreneurs, association volunteers.

The three managerial domains (web experience, operational performance, and agility), and other online activities in pursuit of business competitiveness constitute an essential part of netpreneurs' embeddedness in both Taobao's online world and offline local world. The fact that netpreneurs' social and managerial efforts have been shaped and "standardised" by their social "being" in the digital environment -- believing a particular set of managerial rationalities leads to certain information tokens -- illustrates the domination of regulative power (interpretive schemes of meanings) in Taobao. These institutional forces, orchestrated by Taobao company in an organising vision of "open, sharing, and collaboration", essentially transform the social relations mediated by online technologies into monetary values (eyeballs, key descriptors), based on the schemes of massive data collection (UGC, UGD) and indexing schemes of the Internet.

The rationalization process (monetization) of online social relations works in the way that a) the regulative mechanisms of Taobao networks rewards – as a process of mobilization -- those actors of high indexing results of social relations with higher volumes of eyeballs -- (measured by UV and PV) the *de facto* currency in Internet business, and b) punish those who fail to exploit the potential of online social relational data by making them less favoured by search engines. Dominated by this institutional regime, netpreneurs's agency is shaped to find every possible way to keep their customers in touch via the social relations in

order to render such good relations in database -- because the computational results of strong and reciprocal social relations attract more traffic according to the system's indexing logic.

From the experience of netpreneurs, the internet-organized managerial practice has a crucial emphasis on the managerial domains of web experience, internal operation, and agility, since these interpretive schemes to achieve competitiveness, and the practice of enacting them, are directly contributing to the efforts of creating and sustaining computable online social relations, whose computational objectification leads to the favourable flows of internet eyeballs. In other words, to operate business in Taobao means to be embedded in a "twin-currency" system of capitalist institutions: the circulation of money, and the circulation of "clicking-flows". The former circulation is governed by the market institutions (as dis-embedded from local society as Karl Polanyi would argued), while the latter circulation is subject to the hybrid regime comprised of multiple socio-technical structures such as local participation (membership of online schemes), computing algorithms, social networks and the power of Internet corporations.

Summary and Discussion

To summarise, the business clusters of Yiwu and Dongfeng thrived because their local networks and institutional environment provide the key conditions to support the particular kinds of managerial capability

required for success on Taobao network. In other words, the clusters of Yiwu and Dongfeng represent a new model of industrial clustering whose internal logic (meanings of social relations) is shaped by the Internet.

To say we are living in an Internet age means much more than the fact that everyone can make use of Internet and get electronically connected in one way or another, but rather that our behavior rationalities have been increasingly framed by the organizing logic of information networks on Internet. This explains what I have discovered in the clustering phenomena of Yiwu and Dongfeng regions -- local people develop business clusters out of Internet activities because they have found new reference of meanings from Internet networks which, interwoven with local networks of social relations, has effectively justified their entrepreneurial practice in the context of local life. For them, such things as learning from the neighbors and sharing knowledge, running e-business and maintaining manufacturing workshops are the only rational things to do, given the embeddedness in the social relations of both online and offline world.

7. Conclusion

7.1 Key Findings and Contribution

This thesis examined the logic of micro-entrepreneurs who use internet platforms to do business and co-locate in Chinese suburban and rural regions. In this case, the use of internet for the purpose of transaction, networking and collaboration has been identified to be closely associated with the dependence on locally embedded social relations. Micro-entrepreneurs, while heavily relying on the internet tools to connect with potential shoppers (as well as sellers), are forming up strong local networks to support the growth of their online business. Simply speaking, the more these entrepreneurs are dependent on Taobao platform to conduct their business, the more they become embedded in local business clusters.

Seemingly paradoxical, Taobao platform, with its unrivalled technological capability of enabling users to overcome the constraints of geographic space and thereby to dis-embed actions from local context, are actually giving rise to new business clusters in which entrepreneurs have been deeply embedded in local ties of trust, fine-grained information sharing, and joint-problem solving. On the other hand, it has been found that the forms of collaboration that these entrepreneurs build up, and the ways they justify their daily managerial activities, have been strongly

influenced by the overarching logic of the internet networks (including the ideologies of Taobao corporation), which essentially centres upon the principle of online connectivity. In a nutshell, the case of Chinese micro-entrepreneurial clusters illustrates the particular ways actors can take stock of the locally embedded ties and combine such local advantages with the logic of internet connectivity to achieve business competitiveness.

The study has been positioned in the context of research literature that highlights the synergy entrepreneur gains from being embedded in local social networks, and recent debates of the “digital economy” that highlights the salient features (mostly, functional possibilities) of the Internet as alternative ways of organizing and socialising. Current knowledge tends to see human practice within online technological networks and offline geographic networks as two clearly separate domains of practice – place vis-à-vis cyberspace. Each domain of practice has its distinctive institutional structures, cultural frameworks and history that are not to be mixed or intervened by other domain. Little is known about how the embedded relations of technological networks and local social networks are actually combined together by local actors. The study of Chinese micro-entrepreneurs thus reveals and substantiates the formation of a hybrid sociality, a theoretical framework that accounts for the “recombinant architecture” in which human actors are both locally embedded and digitally embedded in online relations.

Hybrid sociality provides a unique theoretical lens to see how, and to what extent, information technology (internet) as a governance structure intervenes into the domain of social practice, and effectively regulates the social relations of actors. Hybrid sociality sees the regulative roles of technology on social practice not in terms of the particular functional change that technology enables, but in terms of the particular ways of “framing” in which technology “reads” and “renders” social practice into digital tokens, and then manufactures new tokens with new meanings for human actors to interpret and respond. Such process of cognitive framing via production of digital references has fundamentally changed the ways local entrepreneurs understand the nature of their business practice, and hence, transformed the logic they use to justify their managerial rationalities (see Table 6.1 and 6.2).

The Chinese micro-entrepreneurs are working together in local clusters not directly for the purpose of improving their respective business performance *per se*, but instead for the purpose of improving the performance *indicators* calculated – as Zuboff (1989) would argued, informed – based on digital references (i.e. search tokens, popularity, customer ratings, page-visits, industrial-ranking etc). It is these *performance indicators* (tokens) and the technological process of making-sense of them that effectively determined the extent to which these entrepreneurs’ business are connected on the Internet. Hence, it is based on their practical understandings of how technology “frames” their

actions that their behaviour logic of networking, collaborating and transacting can be justified. The process of (re)framing itself becomes so important in formulating sociality that it is difficult to see whether the “format” (or formatting) or the content of what has been formatted are pragmatically more relevant⁷³. Hybrid sociality means the Chinese entrepreneurs combine the meanings they get from a variety of digital references and (re-)align their managerial rationalities and local arrangements of social relations with their interpretations of how internet frames their situations. Hybrid sociality effectively explains why the online business entrepreneurs are clustering in geographic context and how they organize their local relations under the logic of online connectivity.

7.2 Policy Implications

This research draws important implications for the policy-thinking of ICT for regional development. It identified a particular way of gaining clustering momentum in which ICT networks are part of the joint efforts to develop local collaborative networks. Information technology and digital economy has long been seen as an effective route for regions to develop new opportunities of economic development. And yet too much emphasis of the digital economy has been made to address issues like how the

⁷³ The idea that it is important to examine the difference between “form” and “content” in terms of their impacts on practical meanings represents a long sociological tradition from George Simmel to Marshall McLuhan (1962, 1964). I believe that symbolic interactionism indeed has many interesting ideas to offer in the efforts to study the internet-enabled sociality, as the study of Chinese micro-entrepreneurs has demonstrated how important it is to take the cognitive framings of internet networks into account.

industry of information technology can be developed in a particular region (i.e. manufacturing computing device, developing commercial software, or internet start-ups), and how the local institutional environment can support such growth of new economies (universities, government, intellectual property regimes, capital market etc.), a policy mind-set that has been labelled as the “silicon landscape” or “growth poles”.

There has been a lack of knowledge to address key questions like how the ICT networks have structurally changed the ways local socio-economic activities are organized, and how such structural change positively contributes to regional development. Castells (1997; 2000) envisioned that the incoming network society creates possibilities for regions to develop economies according to the network logic, but failed to explain how such process of geographic change is actually taking place. This research provides a concrete empirical account to uncover the ways the internet are contributing to regional development in Chinese context, which are not by exogenously creating a new sector of manufacturing devices or software, but by infusing the network logic into established local relations and structurally changing the organizing arrangements of local collaboration.

To understand how the Internet network governance are combined with local social structures has important implications for regional policy-

thinking. Reflecting upon the Chinese experience of micro-entrepreneurs, policy-makers need to consider that if the internet flows can be effectively monetized by entrepreneurs, what constitutes the locational advantages of a business cluster in which each firm's business is highly dependent on networks of internet? How to mobilize the regional "systems of innovation" in a way to support the local business' pursuit of online connectivity? What are the key institutional and cultural conditions that support the emergence of a local economy whose performance is fundamentally based on the flows of internet connections? I believe these are critical questions that need to be addressed if policy-makers are trying to figure out what the internet networks mean for the potentials of regional development.

7.3 Limitations

The limitation of this research is three-fold:

1) Since the data are collected on-site using ethnographic methods, the embeddedness of actors in Internet networks have been examined only by interpreting their daily experience of using Internet technologies. Such perspective of online embeddedness may be substantially different from the methodology of online social interaction studies, which have a dominant focus on the analysis of data on social behaviour purely mediated by technologies (i.e. online ethnography or netnography). While the analysis of on-site ethnographic data corresponds well to the

theory of hybrid sociality, which essentially denies Internet as a separate social space from territory, it is acknowledged that more research need to be done in terms of collecting pure online data of social behavior to illustrate the point the online activities are understood by contextualizing actors in local territory;

2) It is not the purpose of this research to claim that all e-commerce social networks are to cluster in some territorial contexts. The significance of the research findings -- online e-commerce social networks are clustered in local settings -- needs to be understood more as interpretive efforts to make sense of ICT-enabled development momentum in the context of China, and less as a generalized claim for other similar phenomena in other contexts. It may be useful, for development policy thinking, to study the conditions of similar clustering in other contexts, with a methodology supported by statistical generalizability;

3) This research has predominantly considered the economic aspects of Internet networks (managerial activities, collaborative innovations etc.) from the perspective of individual users and their everyday life. Such a perspective, while insightful in terms of shedding light on the local context, may be blind to the working of other institutional mechanisms that are fundamental to the Internet society. For example, the pervasiveness of Internet technologies comes with the increasing

concerns about the manipulation of personal data by Internet corporations and the movement of privacy protection in society. So the regulation of personal data by the government, as well as individual's perception of privacy and security online, have important ramifications for the ways Internet networks intersect with local social networks. These important concerns have been excluded from the theoretical development in this research.

References

- Agar, M. H. (1996). The professional stranger: An informal introduction to ethnography, Academic Press San Diego.
- Aglietta, M. and D. Fernbach (1979). A theory of capitalist regulation. London, New Left Books.
- Almeida, P. and B. Kogut (1997). "The exploration of technological diversity and geographic localization in innovation: Start-up firms in the semiconductor industry." Small Business Economics **9**(1): 21-31.
- Altheide, D. L. and R. P. Snow (1979). Media logic, Sage Publications Beverly Hills, CA.
- Amin, A. (1989). "Flexible specialisation and small firms in Italy: myths and realities." Antipode **21**(1): 13-34.
- Amin, A. and N. Thrift (1995). Globalization, institutions, and regional development in Europe, Oxford University Press.
- Arbia, G., G. Espa and D. Quah (2008). "A class of spatial econometric methods in the empirical analysis of clusters of firms in the space." Empirical Economics **34**(1): 81-103.
- Asheim, B. (1996). "Industrial Districts as 'learning regions': a condition for prosperity?" European Planning Studies **4**(4).
- Asheim, B. (2000). "Industrial districts: the contributions of Marshall and beyond." The Oxford Handbook of Economic Geography: 413,431.
- Asheim, B. and L. Coenen (2006). "Contextualising regional innovation systems in a globalising learning economy: on knowledge bases and institutional frameworks." Journal of Technology Transfer **31**(1).

- Asheim, B., P. Cooke and R. Martin (2006). The Rise of the Cluster Concept in Regional Analysis and Policy: A Critical Assessment. Clusters and Regional Development: Critical Reflections and Explorations. B. Asheim, P. Cooke and R. Martin. London, Routledge.
- Audretsch, D. (1998). "Agglomeration and the location of economic activity." Oxford Review of Economic Policy **14**(2): 18-29.
- Audretsch, D. and M. Feldman (1996). "R&D Spillovers and the Geography of Innovation and Production." The American Economic Review **86**(3): 630-640.
- Audretsch, D. B. and A. R. Thurik (2000). "Capitalism and democracy in the 21st Century: from the managed to the entrepreneurial economy*." Journal of Evolutionary Economics **10**(1): 17-34.
- Avgerou, C. and S. Madon (2004). Framing IS studies: understanding the social context of IS innovation. The Social Study of Information and Communication Technology: Innovation, Actors, and Contexts. C. Avgerou, C. Ciborra and F. Land. Oxford, Oxford University Press.
- Avgerou, C. and K. McGrath (2007). "Power, rationality, and the art of living through socio-technical change'." MIS Quarterly.
- Baker, W. and R. Faulkner (1993). "The social organization of conspiracy: Illegal networks in the heavy electrical equipment industry." American Sociological Review **58**(6): 837-860.
- Baker, W. E. (1981). Markets as networks: a multimethod study of trading networks in a securities market, Northwestern University.
- Bateson, G. (1972). Steps to an ecology of mind: Collected essays in anthropology, psychiatry, evolution, and epistemology, University of Chicago Press.
- Baum, J. A. C. and C. Oliver (1992). "Institutional Embeddedness and the Dynamics of Organizational Populations." American Sociological Review **57**(4): 540-559.
- Baym, N. K. (2013). "Data not seen: The uses and shortcomings of social media metrics." First Monday **18**(10).

- Becattini, G. (1990). The Marshallian district as a socio-economic notion. Industrial Districts and Inter-Firm Co-operation in Italy. F. Pyke, G. Becattini and W. Sengenburger. Geneva, International Institute of Labour Studies: 37-51.
- Bechmann, A. (2013). "Internet profiling: The economy of data intraoperability on Facebook and Google." MedieKultur. Journal of media and communication research **29**(55): 19 p.
- Becker, H. S. (2008). Tricks of the trade: How to think about your research while you're doing it, University of Chicago Press.
- Benkler, Y. (2006). The wealth of networks : how social production transforms markets and freedom. New Haven, Yale University Press.
- Benkler, Y. (2006). The wealth of networks: How social production transforms markets and freedom, Yale University Press.
- Benkler, Y. and H. Nissenbaum (2006). "Commons-based peer production and virtue." Journal of Political Philosophy **14**(4): 394-419.
- Berthon, P., L. F. Pitt and R. T. Watson (1996). "The World Wide Web as an advertising medium." Journal of advertising research **36**(01): 43-54.
- Biernacki, P. and D. Waldorf (1981). "Snowball sampling: Problems and techniques of chain referral sampling." Sociological methods & research **10**(2): 141-163.
- Blois, K. J. (1990). "Transaction costs and networks." Strategic Management Journal **11**(6): 493-496.
- Blumer, H. (1966). Sociological implications of the thought of George Herbert Mead, JSTOR.
- Blumer, H. (1994). Society as symbolic interaction. Symbolic Interaction: An Introduction to Social Psychology. N. J. Herman and L. T. Reynolds: 263.
- Bourdieu, P. and J.-C. Passeron (1990). Reproduction in education, society and culture, Sage.

- boyd, D. and N. B. Ellison (2007). "Social network sites: Definition, history, and scholarship." Journal of Computer - Mediated Communication **13**(1): 210-230.
- Boyer, R. (1987). La théorie de la régulation: une analyse critique, La Découverte, 1987.
- Bruns, A. (2008). Blogs, Wikipedia, Second Life, and beyond: From production to produsage, Peter Lang.
- Burawoy, M. (1991). Ethnography unbound: Power and resistance in the modern metropolis, University of California Pr.
- Burawoy, M. (1998). "The extended case method." Sociological theory **16**(1): 4-33.
- Burawoy, M. (2000). Global ethnography: Forces, connections, and imaginations in a postmodern world, University of California Pr.
- Burt, R. S. (1980). "Models of network structure." Annual review of sociology **6**: 79-141.
- Burt, R. S. (1982). Toward a structural theory of action : network models of social structure, perception, and action. New York, Academic Press.
- Burt, R. S. (1995). Structural holes: The social structure of competition, Harvard Univ Pr.
- Cairncross, F. (1997). The death of distance: how the communications revolution will change our lives, Harvard Business Press.
- Cairncross, F. (2001). The death of distance: How the communications revolution is changing our lives, Harvard Business Press.
- Callon, M. (1998). The Laws of the Markets. Oxford, Blackwell.
- Callon, M. (1999). "Actor-network theory." Actor network theory and after: 181-195.
- Camagni, R. (1991). "Local milieu, uncertainty and innovation networks: towards a new dynamic theory of economic space." Innovation networks: Spatial perspectives: 121?144.

Caniëls, M. C. and H. A. Romijn (2005). "What drives innovativeness in industrial clusters? Transcending the debate." Cambridge Journal of Economics **29**(4): 497-515.

Castells, M. (1996). The rise of the network society. Cambridge, MA, Blackwell Publishers.

Castells, M. (2003). The Internet galaxy: Reflections on the Internet, business, and society, Taylor & Francis.

Castells, M. (2012). Networks of outrage and hope, polity.

Choe, K. M. (2003). Method and apparatus for monitoring internet traffic on an internet web page, Google Patents.

Cicourel, A. V. (1974). "Cognitive sociology: Language and meaning in social interaction."

Coase, R. H. (1937). "The nature of the firm." Economica **4**(16): 386-405.

Cohen, W. and D. A. Levinthal (1990). "Absorptive Capacity: A New Perspective on Learning and Innovation." Administrative Science Quarterly **35**: 128-152.

Coleman, J. (1998). "Social capital in the creation of human capital." American Journal of Sociology **94**(S1): S95.

Coleman, J. S. (1988). "Social capital in the creation of human capital." American Journal of Sociology **94**(S1): 95.

Contractor, F. J. and P. Lorange (1988). "Why should firms cooperate? The strategy and economics basis for cooperative ventures." Cooperative strategies in international business: 3-30.

Cooke, P. (2001). "Regional innovation systems, clusters, and the knowledge economy." Industrial and corporate change **10**(4): 945.

Cooke, P. and R. Huggins (2003). High-technology clustering in Cambridge (UK). The institutions of local development. A. Amin, S. Goglio and F. Sforzi: 51-74.

- Cooke, P. and K. Morgan (2000). The associational economy: firms, regions, and innovation, Oxford University Press, USA.
- Cowling, K. and R. Sugden (1999). "The wealth of localities, regions and nations: developing multinational economies." New Political Economy **4**(3): 361-378.
- Curry, J. (1993). "The Flexibility Fetish A Review Essay on Flexible Specialisation." Capital & Class **17**(2): 99.
- Dacin, M. T., M. J. Ventresca and B. D. Beal (1999). "The embeddedness of organizations: Dialogue & directions." Journal of Management **25**(3): 317-356.
- Davenport, T. H. (1993). Process innovation: reengineering work through information technology, Harvard Business Press.
- Dedrick, J., K. L. Kraemer and G. Linden (2010). "Who profits from innovation in global value chains?: a study of the iPod and notebook PCs." Industrial and Corporate Change **19**(1): 81-116.
- Deleuze, G. and F. Guattari (1987). A thousand plateaus: Capitalism and schizophrenia, Univ of Minnesota Pr.
- Derrida, J. (1993). "Structure, sign, and play in the discourse of the human sciences." A postmodern reader: 223-242.
- DiMaggio, P. (2001). The twenty-first-century firm : changing economic organization in international perspective. Princeton, N.J., Princeton University Press.
- DiMaggio, P. and W. W. Powell (1982). The iron cage revisited : conformity and diversity in organizational fields. New Haven, Conn., Institution for Social and Policy Studies, Yale University.
- DiMaggio, P. G. E. and S. Zukin (1990). Structures of capital : the social organization of the economy. Cambridge [England] ;, Cambridge University Press.
- Dore, R. (1983). "Goodwill and the spirit of market capitalism." The British Journal of Sociology **34**(4): 459-482.

Doreian, P. and K. L. Woodard (1992). "Fixed list versus snowball selection of social networks." Social Science Research **21**(2): 216-233.

Downey, G. and M. S. Fisher (2006). Introduction: The Anthropology of Capital and the Frontiers. Frontiers of capital: ethnographic reflections on the new economy. D. Holmes, G. E. Marcus, M. S. Fisher and G. Downey, Duke University Press.

Fisher, M. S. and G. Downey (2006). Frontiers of capital: ethnographic reflections on the new economy, Duke University Press.

Fligstein, N. (1996). "Markets as politics: a political-cultural approach to market institutions." American Sociological Review **61**(4): 656-673.

Fligstein, N. (2002). The architecture of markets: An economic sociology of twenty-first-century capitalist societies. Princeton, Princeton Univ Press.

Foucault, M. and C. Gordon (1980). Power-knowledge : selected interviews and other writings, 1972-1977. Brighton, Harvester Press.

Fowler, S. W., T. B. Lawrence and E. A. Morse (2004). "Virtually embedded ties." Journal of management **30**(5): 647-666.

Friedman, T. L. (2007). The world is flat : the globalized world in the twenty-first century. London, Penguin.

Fuchs, C. (2009). "Some Reflections on Manuel Castells' Book "Communication Power"." tripleC: Communication, Capitalism & Critique. Open Access Journal for a Global Sustainable Information Society **7**(1): 94-108.

Fujita, M., P. R. Krugman, A. Venables and I. Ebrary (1999). The spatial economy: cities, regions and international trade, Wiley Online Library.

Fujita, M. and J. F. Thisse (2002). Economics of agglomeration: cities, industrial location, and regional growth, Cambridge Univ Pr.

Garfinkel, H. (2002). Ethnomethodology's program: Working out Durkheim's aphorism, Rowman & Littlefield.

- Gaspar, J. and E. Glaeser (1996). Information technology and the future of cities, National Bureau of Economic Research.
- Geertz, C. (1973). The interpretation of cultures: Selected essays, Basic books.
- Geertz, C. (1994). "Thick description: Toward an interpretive theory of culture." Readings in the philosophy of social science: 213-231.
- Gerlitz, C. and A. Helmond (2013). "The Like economy: Social buttons and the data-intensive web." New Media & Society: 1461444812472322.
- Gertler, M. (2003). "Tacit knowledge and the economic geography of context, or The undefinable tacitness of being "there"." Journal of Economic Geography **30**: 75-99.
- Giaoutzi, M. and P. Nijkamp (1988). Informatics and regional development, Avebury Aldershot.
- Giddens, A. (1984). The constitution of society: introduction of the theory of structuration, Univ of California Press.
- Gillespie, T. (2010). "The politics of 'platforms'." New Media & Society **12**(3): 347-364.
- Gilsing, V. and B. Nooteboom (2005). "Density and strength of ties in innovation networks: an analysis of multimedia and biotechnology." European Management Review **2**(3): 179-197.
- Glommen, C. and B. Barrelet (2002). Internet website traffic flow analysis, Google Patents.
- Goffman, E. (1964). "The neglected situation." American anthropologist **66**(6_PART2): 133-136.
- Goffman, E. (1974). Frame analysis: An essay on the organization of experience, Harvard University Press.
- Gordon, I. and P. McCann (2000). "Industrial clusters: complexes, agglomeration and/or social networks?" Urban Studies **37**(3): 513.

- Gössling, T., L. Oerlemans and R. Jansen (2007). Inside networks. Cheltenham, Edward Elgar.
- Gottmann, J. (1977). Megalopolis and antipolis: The telephone and the structure of the city. The social impact of the telephone. I. d. S. Pool. Cambridge, Mass: 303-317.
- Grabher, G. (1993). The embedded firm: on the socioeconomics of industrial networks, Routledge.
- Grabher, G. and D. Stark (1997). Restructuring Networks in Post Socialism: Legacies, Linkages, and Localities, Oxford University Press.
- Graham, S. (1998). "The end of geography or the explosion of place? Conceptualizing space, place and information technology." Progress in Human geography **22**(2): 165-185.
- Graham, S. and S. Marvin (1996). Telecommunications and the city: Electronic spaces, urban places, Routledge.
- Granovetter, M. (1973). "The strength of weak ties." American journal of sociology **78**(6): 1360-1380.
- Granovetter, M. (1985). "ECONOMIC-ACTION AND SOCIAL-STRUCTURE - THE PROBLEM OF EMBEDDEDNESS." American Journal of Sociology **91**(3): 481-510.
- Granovetter, M. (1985). "Economic Action and Social Structure: The Problem of Embeddedness." American Journal of Sociology **91**: 481-510.
- Granovetter, M. (1992). "Economic institutions as social constructions: A framework for analysis." Acta Sociologica **35**(1): 3.
- Granovetter, M. and R. Swedberg (1992). The sociology of economic life, Westview Press.
- Grimmelmann, J. (2005). "Regulation by software." Yale Law Journal: 1719-1758.
- Grimmelmann, J. (2008). "Saving facebook." Iowa L. Rev. **94**: 1137.

- Gulati, R. (1998). "Alliances and networks." Strategic Management Journal **19**(4): 293-317.
- Gulati, R. and M. Gargiulo (1999). "Where do interorganizational networks come from? 1." American journal of sociology **104**(5): 1439-1493.
- Halinen, A. and J. Toernroos (1998). "The role of embeddedness in the evolution of business networks." Scandinavian Journal of management **14**(3): 187-205.
- Hamel, G. (1991). "Competition for competence and interpartner learning within international strategic alliances." Strategic Management Journal **12**(S1): 83-103.
- Hammersley, M. and Atkinson (1995). Ethnography, principles in practice. London, Routledge.
- Haythornthwaite, C. (2005). "Social networks and Internet connectivity effects." Information, Community & Society **8**(2): 125-147.
- Helper, S. (1990). "Comparative supplier relations in the US and Japanese auto industries: an exit/voice approach." Business and Economic History **19**(2): 153-162.
- Hess, M. (2004). "'Spatial' relationships? Towards a reconceptualization of embeddedness." Progress in Human Geography **28**(2): 165-186.
- Hirsch, P. M., S. Michaels and R. Friedman (1990). Clean Models vs. Dirty Hands: Why Economics is Different Sociology. Structures of Capital: The Social Organization of The Economy. S. Zukin and P. DiMaggio. Cambridge, MA, Cambridge University Press.
- Hirschman, A. O. (1970). Exit, voice, and loyalty: Responses to decline in firms, organizations, and states, Harvard university press.
- Hodgson, G. M. (2009). "Agency, institutions, and Darwinism in evolutionary economic geography." Economic geography **85**(2): 167-173.
- Hotz-Hart, B., G. Clark, M. Feldman and M. Gertler (2000). "Innovation networks, regions and globalization." The Oxford Handbook of Economic Geography: 432-450.

Humphrey, J., H. Schmitz and U. o. S. I. o. D. Studies (2000). Governance and upgrading: linking industrial cluster and global value chain research. IDS Working Paper. Sussex, Institute of Development Studies, University of Sussex.

Jaffe, Trajtenberg and Henderson (1993). "Geographic Localization of Knowledge Spillovers as Evidence in Patent Citations." Quarterly Journal of Economics **108**(3): 577-598.

Jarillo, J. C. (1988). "On strategic networks." Strategic Management Journal **9**(1): 31-41.

Jarvenpaa, S. L., K. Knoll and D. E. Leidner (1998). "Is anybody out there?: antecedents of trust in global virtual teams." Journal of Management Information Systems **14**(4): 64.

Jarvis, J. (2009). What would Google do?, Collins business New York.

Jarvis, J. (2011). Public parts: How sharing in the digital age improves the way we work and live, Simon and Schuster.

Jenkins, H. (2006). Convergence culture: Where old and new media collide, NYU press.

Jenkins, H. (2006). Fans, bloggers, and gamers: Exploring participatory culture, NYU Press.

Johannisson, B., M. Ramirez-Pasillas and G. Karlsson (2002). "The institutional embeddedness of local inter-firm networks: a leverage for business creation." Entrepreneurship & Regional Development **14**(4): 297-315.

John, N. A. (2012). "Sharing and Web 2.0: The emergence of a keyword." New Media & Society: 1461444812450684.

Kallinikos, J. (1989). "Networks as Webs of Signification."

Kallinikos, J. (2006). The consequences of information : institutional implications of technological change. Northampton, MA, Edward Elgar.

- Kallinikos, J. (2007). The consequences of information: Institutional implications of technological change, Edward Elgar Publishing.
- Kallinikos, J. (2009). "On the computational rendition of reality: Artefacts and human agency." Organization **16**(2): 183-202.
- Kallinikos, J. (2011). Governing through technology: Information artefacts and social practice, Palgrave Macmillan.
- Kallinikos, J., A. Aaltonen and A. Marton (2010). "A theory of digital objects." First Monday **15**(6).
- Kallinikos, J., H. Hasselbladh and A. Marton (2013). "Governing social practice." Theory and society **42**(4): 395-421.
- Kallinikos, J. and J.-C. Mariátegui (2011). "Video as digital object: Production and distribution of video content in the internet media ecosystem." The Information Society **27**(5): 281-294.
- Kallinikos, J. and N. Tempini (2012). "Post-material meditations: On data tokens, knowledge and behaviour." Available at: [http://: www.tigair.info/docs/kalltemp_egos11.pdf](http://www.tigair.info/docs/kalltemp_egos11.pdf). Last accessed **6**.
- Karlsson, C., C. Mellander and T. Paulsson (2005). "A spatial ICT clusters in Sweden—an empirical method to identify necessary conditions for existence." Johansson B, Karlsson C y Stough R Entrepreneurship and dynamics in a knowledge economy, Routledge, Londres.
- Knorr-Cetina, K. (1981). The micro-sociological challenge of macro-sociology: towards a reconstruction of social theory and methodology. Advances in Social Theory and Methodology. K. Knorr-Cetina and C. V. Cicourel. Boston, Mass, Routledge & Kegan Paul Ltd.
- Kogut, B. (1988). "Joint ventures: Theoretical and empirical perspectives." Strategic Management Journal **9**(4): 319-332.
- Krackhardt, D. (1999). "The ties that torture: Simmelian tie analysis in organizations." Research in the Sociology of Organizations **16**(1999): 183-210.

- Krippner, G. R. (2002). "The elusive market: Embeddedness and the paradigm of economic sociology." Theory and Society **30**(6): 775-810.
- Krugman and Paul (1991). Geography and Trade. Cambridge, MIT Press.
- Krugman, P. (1991). "Increasing returns and economic geography." Journal of political economy **99**(3): 483.
- Krugman, P. (1998). "What's new about the new economic geography?" Oxford Review of Economic Policy **14**(2): 7.
- Larson, A. (1992). "Network dyads in entrepreneurial settings: A study of the governance of exchange relationships." Administrative science quarterly: 76-104.
- Latham, R. and S. Sassen (2009). Digital formations: IT and new architectures in the global realm, Princeton University Press.
- Latour, B. (2005). Reassembling the social: An introduction to actor-network-theory, Oxford University Press, USA.
- Law, J. (1991). A sociology of monsters: essays on power, technology and domination, Routledge London.
- Law, J. and J. Urry (2004). "Enacting the social." Economy and society **33**(3): 390-410.
- Leadbeater, C. (2009). We-think, Profile Books.
- Leamer, E. and M. Storper (2001). "The economic geography of the Internet age." Journal of International Business Studies **32**(4): 641-666.
- Leamer, E. E. and M. Storper (2001). The economic geography of the internet age, National Bureau of Economic Research.
- Lee, A. S. and R. L. Baskerville (2003). "Generalizing generalizability in information systems research." Information systems research **14**(3): 221-243.
- Leonardi, P. M. and J. Kallinikos (2012). Materiality and organizing: Social interaction in a technological world, Oxford University Press.

- Lessig, L. (1998). "The new Chicago school." The Journal of Legal Studies **27**(S2): 661-691.
- Lessig, L. (1998). "Open code and open societies: values of internet governance." Chi.-Kent L. Rev. **74**: 1405.
- Lessig, L. (1999). Code and other laws of cyberspace, Basic books.
- Lessig, L. (2003). "Creative Commons, The." Fla. L. Rev. **55**: 763.
- Lessig, L. (2003). "Law regulating code regulating law." Loy. U. Chi. LJ **35**: 1.
- Lessig, L. (2004). "Free (ing) culture for remix." Utah L. Rev.: 961.
- Lessig, L. (2008). Remix: Making art and commerce thrive in the hybrid economy, Penguin.
- Leyshon, A. and N. Thrift (1997). Money/space: Geographies of monetary transformation, Routledge.
- Li, C. and J. Bernoff (2011). Groundswell: Winning in a world transformed by social technologies, Harvard Business Press.
- Lipietz, A. (1986). "New tendencies in the international division of labor: regimes of accumulation and modes of regulation." Production, work, territory: the geographical anatomy of industrial capitalism: 16-40.
- Lofland, J. (1974). "Styles of reporting qualitative field research." The American Sociologist **9**(3): 101-111.
- Lösch, A. (1940). "The economics of location, trans." WH Woglom with the assistance of WF Stolper. New Haven, CT. First published in.
- Luhmann, N. (1993). Communication and Social Order: Risk: A Sociological Theory, Transaction Publishers.
- Luhmann, N. (1995). Social systems, Stanford University Press.

- Lundvall, B. Ñ. and B. Johnson (1994). "The learning economy." Journal of industry studies **1**(2): 23-42.
- Lyotard, J. F. (1984). The postmodern condition: A report on knowledge, U of Minnesota Press.
- Maanen, J. V. (1988). Tales of the field: On writing ethnography, Chicago: University of Chicago Press.
- Madon, S. and C. Avgerou (2004). Framing Information Systems Studies: Understanding the social context of IS innovation. The Social Study of Information Technology. C. Avgerou, C. Ciborra and F. Land, Oxford University Press.
- Maillat, D. (1998). From Industrial District to the Innovative Milieu: Contribution to an Analysis of Territorialised Productive Organizations. Recherches Economiques de Louvain. **64**: 111-129.
- Maillat, D., M. Quévit and L. Senn (1993). RÉSEAUX D'INNOVATION ET MILIEUX INNOVATEURS: UN PARI POUR LE DÉVELOPPEMENT RÉGIONAL [Innovative Networks and Innovative Milieux: A Stake for Regional Development], Neuchatel: GREMI, EDES.
- Malecki, E. (1991). Technology and economic development: the dynamics of local, regional, and national change, Longman Scientific & Technical.
- Malecki, E. and D. Tootle (1996). "The role of networks in small firm competitiveness." International Journal of Technology Management **11**(1): 43-57.
- Malinowski, B. (2003). Argonauts of the Western Pacific: An account of native enterprise and adventure in the archipelagoes of Melanesian New Guinea, Routledge.
- Mansell, R. (2012). Imagining the internet: communication, innovation, and governance, Oxford University Press.
- Markus, M. L. (1983). "Power, politics, and MIS implementation." Commun. ACM **26**(6): 430-444.
- Marshall, A. (1895). Principles of economics, Macmillan.

Marton, A. (2009). "Self-Referential Technology and the Growth of Information: From Techniques to Technology to the Technology of Technology." Soziale Systeme **15**(1).

Marx, K. (1867). Capital: a critique of political economy, Penguin Classics.

Maskell, P. (1998). Competitiveness, localised learning and regional development: Specialisation and prosperity in small open economies, Psychology Press.

Maskell, P. and L. Kebir (2006). What Qualifies as a Cluster Theory. Clusters and Regional Development: Critical Reflections and Explorations. B. Asheim, P. Cooke and R. Martin. London, Routledge.

Mead, G. H. and H. Mind (1934). "Self and society." From the Standpoint of a Social Behaviorist, The University of Chicago press (13 ed., 1965) **401**.

Merleau-Ponty, M. (1996). Phenomenology of perception, Motilal Banarsidass Publishe.

Mitchell, W. (2002). "City of Bits: Space, Place, and the Infobahn." City Reader. Oxford: Blackwell Publishing: 52-59.

Mitchell, W. J. (1995). City of bits, Cambridge Univ Press.

Morgan, K. (1997). "The learning region: institutions, innovation and regional renewal." Regional studies **31**(5): 491-503.

Morozov, E. (2012). The net delusion: The dark side of Internet freedom, PublicAffairs Store.

Morozov, E. (2013). To save everything, click here: The folly of technological solutionism, PublicAffairs.

Moss, M. (1999). "Technology and cities." Cityscape: A Journal of Policy Development and Research **3**(3).

Negroponte, N. (1996). Being digital, Random House Digital, Inc.

- Nelson, R. and S. Winter (1982). An Evolutionary Theory of Economic Change. Cambridge, Mass, Harvard University Press.
- Nissenbaum, H. (2009). Privacy in context: Technology, policy, and the integrity of social life, Stanford University Press.
- Nooteboom, B. (1999). Inter-firm alliances: Analysis and design, Psychology Press.
- Nooteboom, B. (2004). "Governance and competence: how can they be combined?" Cambridge Journal of Economics **28**(4): 505.
- Nooteboom, B. (2006). Innovation, Learning and Cluster Dynamics. Clusters and Regional Development: Critical Reflections and Explorations. B. Asheim, P. Cooke and R. Martin. London Routeledge: 137.
- O'reilly, T. (2007). "What is Web 2.0: Design patterns and business models for the next generation of software." Communications and Strategies **65**(1): 17-37.
- Orlikowski, W. J. (1991). "Integrated information environment or matrix of control? The contradictory implications of information technology." Accounting, Management and Information Technologies **1**(1): 9-42.
- Orlikowski, W. J. (1992). "The duality of technology: Rethinking the concept of technology in organizations." Organization science **3**(3): 398-427.
- Ottaviano, G. I. P. and J. F. Thisse (2001). "On economic geography in economic theory: increasing returns and pecuniary externalities." Journal of Economic Geography **1**(2): 153.
- Page, L., S. Brin, R. Motwani and T. Winograd (1999). The PageRank Citation Ranking: Bringing Order to the Web, Stanford InfoLab.
- Papacharissi, Z. (2009). "The virtual geographies of social networks: a comparative analysis of Facebook, LinkedIn and ASmallWorld." New Media & Society **11**(1-2): 199-220.
- Perrow, C. B. (1993). 6. Small Firm Networks. Institutional change: theory and empirical findings. S.-E. Sjöstrand. New York: 111.

Petersen, S. M. (2008). "Loser generated content: From participation to exploitation." First Monday **13**(3).

Platteau, J. (1994). "Behind the market stage where real societies exist-Part II: The role of moral norms." Journal of Development Studies **30**(4): 753-817.

Podolny, J. and K. Page (1998). "Network Forms of Organization." Annual review of sociology **24**(1).

Podolny, J. M. (1993). "A status-based model of market competition." American Journal of Sociology: 829-872.

Podolny, J. M., T. E. Stuart and M. T. Hannan (1996). "Networks, knowledge, and niches: Competition in the worldwide semiconductor industry, 1984-1991." American Journal of Sociology: 659-689.

Polanyi, K. and R. M. MacIver (1957). The great transformation. Boston, GowerBeacon Press.

Porter, M. (1998). "Clusters and the new economics of competition." Harvard Business Review **76**(6): 77-90.

Porter, M. E. (1998). "Clusters and competition: New agendas for companies, governments, and institutions." On competition: 197-288.

Portes, A. and J. Sensenbrenner (1993). "Embeddedness and immigration: Notes on the social determinants of economic action." American journal of sociology: 1320-1350.

Potts, J., S. Cunningham, J. Hartley and P. Ormerod (2008). "Social network markets: a new definition of the creative industries." Journal of cultural economics **32**(3): 167-185.

Powell, W. (2003). "Neither market nor hierarchy." The sociology of organizations: classic, contemporary, and critical readings **315**: 104-117.

Powell, W. W. and P. Brantley (1992). "Competitive cooperation in biotechnology: Learning through networks." Networks and organizations: 366-394.

Powell, W. W. and P. DiMaggio (1991). The new institutionalism in organizational analysis. Chicago, University of Chicago Press.

Powell, W. W. and L. Smith-Doerr (1994). "Networks and economic life." The handbook of economic sociology **368**: 380.

Quah, D. (2001). "ICT Clusters in Development: Theory and Evidence." European Investment Bank Papers **6(1)**: 85-100.

Quintarelli, E. (2005). "Folksonomies: power to the people."

Reynolds, G. (2007). An army of Davids: How markets and technology empower ordinary people to beat big media, big government, and other Goliaths, Thomas Nelson Inc.

Richard, P. and T. Devinney (2005). "Modular strategies: B2B technology and architectural knowledge."

Root, F. R. (1988). "Some taxonomies of international cooperative arrangements." Cooperative strategies in international business **69**: 80.

Rousseau, D., S. Sitkin, R. Burt and C. Camerer (1998). "Not so different after all: A cross-discipline view of trust." Academy of management review **23(3)**: 393-404.

Sabel, C. (1999). "Flexible specialisation and the re-emergence of regional economies." Modernity: After modernity: 242.

Sartre, P.-J. (2013). Being and nothingness: An essay on phenomenological ontology, Routledge.

Sassen, S. (1994). "Cities in a world economy." Thousand Oaks.

Sassen, S. (2001). Global networks, linked cities, Routledge.

Saxenian, A. (1999). "Comment on Kenney and von Berg, "Technology, Entrepreneurship and Path Dependence: Industrial Clustering in Silicon Valley and Route 128." Industrial and Corporate Change **8(1)**: 105.

- Saxenian, A. L. (1994). Regional advantage: Culture and competition in Silicon Valley and Route 128, Harvard University Press.
- Schmitz, H. (1995). "Collective efficiency: growth path for small-scale industry." Journal of Development Studies **31**(4): 529-566.
- Schutz, A. (1962). "Collected papers, vol. I: The problem of social reality." The Hague: Martinus Nijhoff.
- Schweitzer, S. O., R. Marco and D. Tommaso (2003). "8. Why do biotechnology firms cluster? Some possible explanations." Urban and regional prosperity in a globalised new economy: 181.
- Scitovsky, T. (1954). "Two concepts of external economies." The Journal of Political Economy: 143-151.
- Scott, A. J. (1988). "Flexible production systems and regional development: the rise of new industrial spaces in North America and western Europe*." International Journal of Urban and Regional Research **12**(2): 171-186.
- Simme, J. (1997). Innovation Networks and Learning Regions?, Routledge.
- Sinai, T. and J. Waldfogel (2003). Geography and the Internet: Is the Internet a Substitute or a Complement for Cities?, National Bureau of Economic Research.
- Smith, D. E. (2005). Institutional ethnography: A sociology for people, Rowman Altamira.
- Solove, D. J. (2004). The digital person: Technology and privacy in the information age, NYU Press.
- Staber, U. (1996). "The social embeddedness of industrial district networks." Business networks: Prospects for regional development: 148-189.
- Starrett, D. A. (1976). "Market allocations of location choice in a model with free mobility." Journal of Economic Theory **17**.
- Storper, M. (1997). The regional world: territorial development in a global economy, The Guilford Press.

- Stuart, T. E. (1998). "Network positions and propensities to collaborate: An investigation of strategic alliance formation in a high-technology industry." Administrative Science Quarterly: 668-698.
- Stuart, T. E., H. Hoang and R. C. Hybels (1999). "Interorganizational endorsements and the performance of entrepreneurial ventures." Administrative Science Quarterly **44**(2): 315-349.
- Stuart, T. E. and J. M. Podolny (1996). "Local search and the evolution of technological capabilities." Strategic Management Journal **17**(S1): 21-38.
- Suchman, L. (1994). "Working relations of technology production and use." Computer Supported Cooperative Work (CSCW) **2**(1-2): 21-39.
- Tapscott, D. (1996). The digital economy: Promise and peril in the age of networked intelligence, McGraw-Hill New York.
- Tapscott, D. and A. D. Williams (2008). Wikinomics: How mass collaboration changes everything, Penguin.
- Thrift, N. (1996). "New urban eras and old technological fears: reconfiguring the goodwill of electronic things." Urban Studies **33**(8): 1463.
- Toffler, A. (1980). The third wave, Morrow.
- Uzzi, B. (1996). "The sources and consequences of embeddedness for the economic performance of organizations: The network effect." American Sociological Review **61**(4): 674-698.
- Uzzi, B. (1997). "Social structure and competition in interfirm networks: The paradox of embeddedness." Administrative science quarterly **42**(1).
- Uzzi, B. (1999). "Embeddedness in the making of financial capital: How social relations and networks benefit firms seeking financing." American Sociological Review **64**(4): 481-505.

- Uzzi, B. and J. J. Gillespie (2002). "Knowledge spillover in corporate financing networks: Embeddedness and the firm's debt performance." Strategic Management Journal **23**(7): 595-618.
- Van Dijck, J. (2009). "Users like you? Theorizing agency in user-generated content." Media, culture, and society **31**(1): 41.
- Van Dijck, J. (2013). The culture of connectivity: A critical history of social media, Oxford University Press.
- Van Dijck, J. and D. Nieborg (2009). "Wikinomics and its discontents: a critical analysis of Web 2.0 business manifestos." New Media & Society **11**(5): 855-874.
- Van Dijck, J. and T. Poell (2013). "Understanding social media logic." Media and Communication **1**(1): 2-14.
- Van Maanen, J. (1988). Tales of the field: On writing ethnography, University of Chicago Press Chicago.
- von Hayek, F. A. (1948). Individualism and economic order: essays, University of Chicago Press.
- Von Thünen, J. H. and P. G. Hall (1966). Isolated state: an English edition of Der isolierte Staat, Pergamon Press.
- Vukanovic, Z. (2009). "Global paradigm shift: Strategic management of new and digital media in new and digital economics." The International Journal on Media Management **11**(2): 81-90.
- Wallerstein, I. M. (1991). Geopolitics and geoculture: Essays on the changing world-system, Cambridge University Press.
- Walsham (1993). Interpreting Information System in Organizations. New York, John Wiley & Sons.
- Watkins, J. W. (1955). "Methodological individualism: a reply." Philosophy of science **22**(1): 58-62.

- Weber, A. (1909). Über den Standort der Industrie (Theory of the Location of Industries). Chicago, The University of Chicago Press.
- Weber, M., G. Roth and C. Wittich (1968). "Economy and society." New York.
- Willcocks, L., J. Hindle, D. Feeny and M. Lacity (2004). "IT and business process outsourcing: The knowledge potential." Information Systems Management **21**(3): 7-15.
- Williamson, O. (1975). "Markets and hierarchies, analysis and antitrust implications."
- Williamson, O. (1991). "Comparative economic organization: The analysis of discrete structural alternatives." Administrative science quarterly **36**(2).
- Yin, R. K. (2009). Case study research: Design and methods, Sage.
- Young, A. A. (1928). "Increasing returns and economic progress." The economic journal **38**(152): 527-542.
- Zukin, S. and P. DiMaggio (1990). Structures of capital : the social organization of the economy. Cambridge, Cambridge University Press.

Appendix A. Data Sources

Ethnographic interviews of netrepreneurs in Yiwu city

Firm name, type of business (platform; year established; no of employees)	Roles of interviewees	Observation/interview duration
Ru Yan Furniture, home furniture retailer (Taobao; 2007; 5)	Owner/manager and Vice-chair of Yiwu e-Business Association (YeBA); sales agents	Trip 1: half day; Trip 2: one day
Yiwu Tina Cosmetics Company, fashion cosmetics wholesaler targeting Taobao retailers (Alibaba Wholesale; 2005; 30)	Owner/manager of family business (husband and wife), warehouse workers, delivery workers, sales agents	Trip 1: one days; Trip 3: one day
You You Life Pavillon, Heath food retailer (Taobao; 2007; 6)	Owner/manager and vice-chair of YeBA; sales agents	Trip 1: two days; Trip 2: two days; Trip 3: two days
e-Ku Zone, women shoes retailer (Taobao; 2006; 10)	Owner/manager and chair of YeBA; sales agents	Trip 1: one day; Trip 2: one day; Trip 3: one day
Xiao Mi Feng Toy, toys retailer (Taobao; 2008; 3)	Owner/manager/ sales agents	Trip 1: half day; Trip 2: half day; Trip 3: one day
Golden Swallow, Han De Art Manufacturer, Towel designer/retailer (Taobao; 2008; 7)	Owner/manager; sales agents	Trip 1: half day; Trip 2: half day
Yiwu Ponnie Import&Export, home cleaning tools exporter (Alibaba International; 2005; 10)	Manager, sales agents and production managers	Trip 1: half day; Trip 3: half day
Yiwu Mini Toy Factory, baby doll manufacturer/retailer (Taobao; 2008; 1)	Owner/sales agent	Trip 1: half day; Trip 2: two hours; Trip 3: half day

Ethnographic interviews of suppliers and service providers in Yiwu

Firm name, type of business (year established; number of employees)	Role of interviewees	Observation/interview duration
WinCome Creative Furniture, Home furniture wholesaler (Independent website; 2006; 25)	Owners (husband and wife); managers of family business; warehouse workers; delivery workers, sales agents etc.	Trip 1: one day; Trip 3: one day
Qiao Huo Tian Xia e-Commerce Company, Fashion items wholesaler with local supermarket stores for Taobao retailers (2007; 15)	Owners (husband and wife), managers, sales agents	Trip 1: half day; Trip 2: half day Trip 3: half day
Yiwu YaXuan Shipping, Fashion items wholesaler at Yiwu market (2001; 5)	Manager	Trip 2: two hours
ZheJiang XiWang Box Package, package box retailer	Manager	Trip 2: two hours; Trip 3: two hours

Other interviews in Yiwu city

Interviewee	Interview duration
College teacher, Yiwu Industrial and Commercial College (YICC), Yiwu	Trip 2: 1 hour; Trip 3: 1 hour
Local government officer, QingYanLiu Neighbourhood Commission, Yiwu	Trip 3: 0.5 hour
Local business news reporter, ZheZhong Info (Zhe Zhong Xin Bao), Yiwu	Trip 1: 0.5 hour

Ethnographic interviews of furniture entrepreneurs, Dongfeng village

Firm name (platform; year established; no. of employees)	Roles of interviewees	Observation/interview duration
Sui Ning Mei Yi Jia, manufacturer and retailer (Taobao; 2007; 25)	Workshop owner/manager/head of Shaji e-Business Association; sales agents; carpenters.	Trip 1: one day; Trip 2: two days; Trip 3: three days
Sui Ning Ruibo, manufacturer and retailer (Taobao; 2009; 20)	Workshop owner/manager; some family members; carpenters	Trip 1: one day; Trip 2: half day; Trip 3: one day
San Shi, furniture manufacturer and retailer, (Taobao; 2008; 30)	Owners; managers; carpenters; warehouse workers	Trip 1: one day; Trip 3: 3 days
Mei Kai Long Fashion Furniture; retailer (Taobao; 2009; 4)	Owner/manager, sale agents	Trip 1: one day; Trip 3: half day
Ju Le Xing Home Furniture MegaStore, manufacturer and retailer (Taobao; 2009; 30)	Owner/manager; sales agents	Trip 1: half day; Trip 2: half day; Trip 3: one day
Mei Jia Jia Home Furniture, manufacturer and retailer (Taobao; 2010; 10)	Owner/manager; sales agents	Trip 2: half day; Trip 3: half day

Ethnographic interviews of suppliers and service providers, Dongfeng village

Firm name, type of business (year established; no. of employees)	Role of interviewees	Observation/interview duration
Xu Zhou Ying Tian Xia e-Business Incubator, consulting services (2010; 20)	Owner/manager, apprentice (students), customers who are seeking help.	Trip 2: half day; Trip 3: one day
Dongfeng Timber Supplier (2010; 10)	Owner/manager, factory workers, customers	Trip 1: half day; Trip 2: two hours; Trip 3: two hours
XinGuo Imported Timber Material (2010; 9)	Owner/manager, factory workers, customers	Trip 2: half day; Trip 3: two hours
Huang's Machinery and Metal Materials (2011; 2)	Owner/manager, sales agents	Trip 3: two hours
ZhongTong Express, logistics agent (2011; 6)	Owner/manager, family members	Trip 3: two hours
Tian Di Hua Yu Logistics, logistics agent (2010; 10)	Owner/manager, family members	Trip 3: two hours
Jia Ji Express, logistics agent (2010; 5)	Owner/manager, family members	Trip 3: two hours

Other interviews for the Dongfeng case

Interviewee	Interview duration
Town leader, CCP secretary of Shaji Town, Jiangsu Province	Trip 1: one hour; Trip 2: one hour
Dongfeng village chief (party secretary), a netrepreneur himself, planning to build an industrial park in local village	Trip 1: one hour; Trip 2: two hours; Trip 3: one hour
Vice-chair of Shaji township congress; local people's representative	Trip 2: one hour; Trip 3: three hours

Appendix B. Services on Taobao Platform

Taobao platform services	Description
Taobao Shop Management (Wang Pu)	SaaS tool that enables netpreneurs to manage their shops, such as creating new product page, writing product descriptions, uploading pictures, setting prices.
Order Management	SaaS tool that handles customer orders, such as checking stock availability, sending order confirmation, producing delivery order and tracking order progress.
eTao search engine	Search engine for comparing prices
Alipay	Third-party online payment service
Aliwang-wang	Instant-messenger tool
Express Train Service	Search word auction for advertisers, like Google's AdWord.
Taobao Advertising	Web-ad market where website owners and netpreneurs meet, negotiate and customize ad contents and prices, like Google's AdSense.
Credit Rating	The Taobao system automatically calculates each shop's level of credit based on the shop's accumulated behaviours such as the frequency of orders, customer satisfaction ratings, and compliance to online good conduct rules.
TrustPass (Cheng Xin Tong)	Alibaba certification of business enterprises. It requires some detailed government and professional qualifications, and is based on online business transaction records within Alibaba platforms.
Taobao Forum	Online community taking the form of discussion board, sharing life experience and entertainment information. Many local e-Business associations have their virtual webpage in this forum.
DataCubes	Subscription-based data analytics service producing market-transaction-based data mining.
Blogs and Magazines	Wiki-style of blog-writing. Taobao's industry-focused team routinely organize leading netpreneurs to publish their business stories, and to collectively edit shopper's guides and articles on new techniques among netpreneurs.
Circles and Groups (Quanzi, Bangpai)	Social-network-service similar to Facebook, which enables netpreneurs (and shoppers) to have personal pages displaying lists of friends.
Accounting and Management Software Service (Qian Zhang Gui, meaning MoneyManager)	SaaS tools free for netpreneurs on Tabao platform. Taobao provides also a software market platform for third-party developers.

Appendix C. Taobao's Credit Grade Scheme

4分-10分	♥
11分-40分	♥♥
41分-90分	♥♥♥
91分-150分	♥♥♥♥
151分-250分	♥♥♥♥♥
251分-500分	💎
501分-1000分	💎💎
1001分-2000分	💎💎💎
2001分-5000分	💎💎💎💎
5001分-10000分	💎💎💎💎💎
10001分-20000分	👑
20001分-50000分	👑👑
50001分-100000分	👑👑👑
100001分-200000分	👑👑👑👑
200001分-500000分	👑👑👑👑👑
500001分-1000000分	👑
1000001分-2000000分	👑👑
2000001分-5000000分	👑👑👑
5000001分-10000000分	👑👑👑👑
10000001分以上	👑👑👑👑👑

In Taobao Credit Grade scheme, sellers are ranked in four classes: “heart”, “diamond”, “crown” and “golden crown”. As sellers accumulate credit points in deals, their status get upgraded gradually from ‘heart’ to ‘golden crown’. Each class has five levels, from level1 to level5. In terms of image display, each level is denoted by the number of “hearts”, “diamonds” or “crowns”. For example, level 4 of the ‘diamond’ class is shown by four diamonds, displayed after the name of the seller. In Taobao’s credit rule, seller gets one point from a deal if the buyer gives a positive feedback, zero point from a neutral feedback and minus one point from a negative feedback. The total accumulated points determine the class and rank. The same rule applies to the buyer.

Appendix D. Excerpts of Original Interview Transcripts (in Chinese)

Interview with the Strategy Manager, Alibaba Group, Hangzhou on 23/05/2010

B: 调研者 (Interviewer)

A: Strategy Manager

A: 这是它自己公司的 **BtoC**, 我们现在做的是基础服务, 对电子商务一个整个行业的基础设施的一个搭建, 里面包括我们的信用体系, 我们的支付体系, 以及我们和第三方打造的平台体系, 大致分两种, 一种是淘宝生态圈之外的, 一种是淘宝生态圈之内的。

B: 那怎么来界定淘宝生态?

A: 淘宝的生态圈很简单, 就是从我们第三方电子商务平台慢慢成为电子商务基础服务的提供商, 譬如 shoppingmall 里面买东西, 那么后来我们就觉得我不够大, 我们要把基础部分的服务, 底盘、地基这部分的东西延伸出去, 从一个 SHOPm 慢慢地做成了一条商业街。这个商业街的基础设施, 譬如说经济开发区一样, 三通一平, 我们把路给你修通, 水给你拉通, 电给你拉通, 宽带给你拉通等等。那我们看你们是不是在淘宝里面买东西或者卖东西, 那只要你们在我们商圈里面, 用我们的基础设施的。你可以在旁边修栋小楼, 就是我们就是做一件开网店的事, 淘宝输出一个开网店的体系, 现在那个 WEB 独立网店, 那慢慢从外界上看, 好像这栋楼跟淘宝是没有关系的, 完全独立不通的, 外面的装修和风格, 都是独立的一个小楼, 修在这个商圈里面的, 但是它们是建筑在我们的基础设施之上的。

B: 相当于淘宝的开源代码,

A: 水电煤的工程, 开放我们的信用体系, 支付体系, 以及我们的运用流程和管理运营规则等等, 包括我们商品的管理规则,

C: 最重要的是不改变淘宝购物的体验, 感觉跟在淘宝购物类似, 不是很复杂的, 区别在于个性化更多了。

B: 界定淘宝商城之外?

A: 这个是商圈之内, 没在淘宝网, 在点 COM 里面, 它是一层一层往外扩的。它的外面才事生态链, 第三方 做的是像亚马逊一样的事情, 但有些差别, 亚马逊为客户提供的服务不外乎几层, 最基础的部分像存储运算这块东西, 再往上应用的一些工具, 一些系统, 到了顶尖才是个性化模块的东西。亚马逊也是, 其实淘宝在这个问题上和亚马逊有点类似, 但淘宝其实加 EBAY 加亚马逊的一个接合体。

B: 就是说现在这个基础平台还是处于搭建,

A: 现在我们平台在找第三方做这个基础设施. 就譬如说某个大品牌他们要在这个地方搞这样一栋楼, 但是他们没有工程队, 帮他们修路的, 帮他们装修的, 然后帮他们做运营的, 然后帮他们做营销的, 等等。我们就搭建, 就是那地基做好, 然后有专门修房, 专门做装修的, 这些都是他们的事情, 当然也包括我们在内。

C: 设计一些社区, 譬如说 19 楼这样的, 我们把淘宝的运输过去, 然后开网店也是一种输出方式, 有些人他们就是要建立。

A: 譬如说这是淘宝店 HOME, 淘宝店 HOME 发展里面有一些不同的需求, 里面有淘宝商城, 慢慢的我们还会做一些产品, 后来我们就觉得把它弄好, 这一部分就是基础设施, 淘宝提供的, 建了一栋小楼。他们是在我们地盘里面, 和淘宝里的设施是一样的, 不一样的是应用体系, 评价体系, 支付体系。这订单不只看到是淘宝的订单, 在优酷点 CN 也可以看到, 或是其他的 BTB 的网站, 我们共建了一个频道一拍大就是淘宝的合作伙伴, 那么他们负责三种, 譬如技术类的, 就是做基础设施的, 帮这栋楼铺水管, 安装电线, 第二类是运营类的, 那我们可能没有人来经营这个店铺, 服务外包, 第三类是仓储物流, 淘宝正在全国建设, 第四类营销服务, 怎么做推广, 怎么做营销, 我们找了一大帮的第三方的工程队把基础设施建好。这样就是淘宝的生态链, 我们就是输出, 我们自定标准化规则, 输出我们的信用体系, 交易流程或规则, 然后商品管理的规则, 包括我们一些会员的规则。淘宝主要就是搭建基础设施, 除了管理就是输出规则。输出四类规则 and 标准。优衣库, HM 他们和淘宝有直接的合作关系, 那么他和他们的合作伙伴能不能在这个生态圈共赢, 比如说传统供应商, 它可以把他们整合进来, 它是开放的 API 接口, 我是代工工厂, 我是不会直接面对消费者, 需要这些大的品牌帮我出货, 那我可以这时候借助淘宝这个平台。包括我们的分销系统, 未来的大工厂他们只做品牌运营, 分销是淘

宝，当然这里面淘宝商城里面的企业链，希望在淘宝圈里面搭建一个生态体系，譬如我会在 CTC 里面我会授权，加分销商，那就是说分销商，供应商都是在淘宝里。这是 1.0 版本。2.0 版本供应商不一定在淘宝里，它可能在最外面，它通过使用我的基础设施，然后管理淘宝里的 500 的分销商，它的分销商是在淘宝里，供应商可以在淘宝外的。当当，亚马逊只要愿意，开放 API 接口，就可以管理分销商，那未来的话他们只要分销体系和使用规则，商品管理一个标准化，供销商和供应商都可以在这外面。

B: 相当是淘宝输出一个标准化流程，外面里面都可以使用，

A: 对对，一些个人网站或一些商城，他们自己找货就比较困难，他们可以开放 API，一个佣金比列，实现模块。自付宝划分比列。打通 API，遵循规则，把他们的流量转化成销量。那这些是我们实施大淘宝战略的一个基础服务。一个是做基础设施建设，一个是标准的输出。其实是两件事情。

B: 可不可以这么说大淘宝战略把 BTB 拆分，模块化，比如单做一家店要做很多，在大淘宝的资源里就不需要做那么多……。

Group Interview with the Yiwu Business Association, 27/05/2010

C: Interviewer

D: Association Chair

E: Vice Chair

C: 我们一是过来听你们讲故事，二是请你们提点建议，目的特别简单。先请介绍一下商盟的发展过程。

D: 义乌从 08 年开始筹建的，有 20 个左右的会员参加会议，那次活动非常成功，会员得到了很大飞跃，现在好几个都办厂。5 月 27 日，7、8 个人自发建立商盟模式。当时没有得到淘宝的认可，我们隔几个月去要求一下，其中有几个会员很积极，有时候商量商盟的事情会到 1-2 点。

C: 目的是什么？

E: 就是整合义乌的优质资源，给大家分享。还有快递，联合起来把价格谈下来。原来商盟盟主交警培训中心，也是我推荐的，做了很多工作。当时，义乌的邮政有很多价格：散客价、促销价、贵宾价、撞死价、皇冠价，只要是义乌商盟会员，一天发一件，均可享受皇冠价。

C: 这个能便宜多少？

D: 很多。我们享受到的，一般实行“8+4”或“10+4”或“5+1”。

C: 8+4 什么意思？

E: 分别是首重和续重，一公斤以内 8 块，超过一公斤加 4 块。

C: 这对小卖家很划算。

E: 对，单独去谈是谈不下来的。我们也做了会员卡。

C: 最初是几个热心人在做。

E: 要花很多精力，大卖家带动小卖家，有的派货公司不同意，我们就商量，让小卖家把货放到大卖家，一起取，大卖家也不乐意，比较困难。现在谈好了，一件货也来取。

Appendix E. Images of Dongfeng Furniture Cluster





Pictures of local timber supplier's workshop



Pictures of local delivery agent's office



A picture of local family's manufacturing workshop



A picture of the village neighbourhood – each family house operates a business, with front doors wide open. The street of neighbourhood is wide and flat, enough space for logistic trucks to park and load products. Some families have both motorcycles and cars, so that they can sometimes deliver the products by themselves, to save cost.



Pictures of netpreneur's back-office -- situated in family houses, open-plan designs convenient for constant communication – computers linked by broadband, Taobao's software systems, telephones, printers.

Appendix F. Images of Yiwu's QingYanLiu Neighbourhood



The super-scale commodity market in town centre



Students practicing as e-commerce entrepreneurs in the local college



QingYanLiu Neighbourhood – clean and quite during day time, local residents working at home, mostly recent college graduates; ground floor and basement are storage space, streets wide enough for trucks to park.

Appendix G. A Geographic View of Chinese E-Commerce – based on Alibaba’s Real-time Data



This picture is showing the number of active online entrepreneurs in each province



This picture is showing the deal-in-making process on Alibaba’s platform --- yellow bubble represents the source location (the size) of an order, while the yellow line indicates the location of the other exchange party.

Appendix H. The survey form used to collect basic information of local netrepreneurs (in Chinese)

沙集镇家具产业服务类企业统计表																											
企业编号	企业或户主			成立时间	负责人			聘用人数				年收入	服务类型	是否有网店	网店经营种类	政府扶持					淘宝扶持				行业协会团体		备注
																是否得到	土地审批	贷款	培训(次)	荣誉(有无,名称)	领导帮扶(人次)	其他	小二客服(在线支持)	线下培训指导人次	信用评价	在线营销	
名称	类型(家庭或是合伙制)	位置	年龄	文化	是否本地	2009	2010	2011	销售人员	管理人员																	

