Chapter 17
Capitalising on Institutional Diversity and Complementary Resources in Cross-Border Metropolitan Regions: The Case of Electronics Firms in Hong Kong and the Pearl River Delta

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Abstract The opening of China during the last 30 years has resulted in tremendous cross-border economic activities of Hong Kong manufacturers in the Pearl River Delta (PRD). Economic activities in the Greater Pearl River Delta (GPRD) are embedded into global value chains and shaped by the specific 'front office-back factory' division of labour between Hong Kong and the Chinese mainland. This business model has facilitated the rapid industrialisation of the PRD and the transformation of the HK economy towards sophisticated manufacturing-related business services (FHKI 2003, 2007). More recently, the competitiveness of the business model has been put under strain by forceful challenges that change the business environment in the PRD: rising production costs, upgrading pressures, new regulations for export processing businesses, labour shortages, a more employee-friendly labour law, and environmental issues. Against this background, it is the purpose of this paper to present and discuss findings from two surveys of electronics firms in HK and the PRD conducted in 2007 and 2008. The research question is based on the agility hypothesis, that supposes that business in highly competitive environments depends on competencies and resources of firms to capitalise on formal and informal business practices alike to gain flexibility. The results of our analysis may help to better understand how the HK-PRD business model did develop and eventually may sustain its competitiveness in the face of new challenges. We began with the overview of our HK as well as PRD sample in order to figure out whether there are indeed strong needs embedded in the current business and political conditions for informal and flexible organisation of firms. After that, we focussed on "customer-producer relations" and "industrial innovation" on the other hand to clarify how firms operating in the GPRD transformed the needs for agility

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J. Klaesson et al. (eds.), *Metropolitan Regions*, Advances in Spatial Science,
DOI 10.1007/978-3-642-32141-2_17,

into different kinds of means and actions in these two areas to sustain their competitiveness in the global market. With respect to agile firm organisation in general, the findings of our research confirm the hypothesis about the interaction of informal arrangements and flexible firm organisation. Informal institutions for doing business in the GPRD are not going to become less important with further development and improvement of the Chinese legal system. Adequate application of informal factors within given formal constellations enhances the capabilities of firms to more flexibly react to the fast changes in the political and business environment to sustain their competitiveness in the global market.

Keywords Institutions • Governance • Customer–producer relations • Proximity • Hong Kong • Electronics industry

1 Introduction

The opening of China during the last 30 years has resulted in tremendous cross-border economic activities of Hong Kong manufacturers in the Pearl River Delta (PRD). Economic activities in the Greater Pearl River Delta (GPRD) are embedded into global value chains and shaped by the specific 'front office-back factory' division of labour between Hong Kong and the Chinese mainland. This business model has facilitated the rapid industrialisation of the PRD and the transformation of the HK economy towards sophisticated manufacturing-related business services (FHKI 2003, 2007).

More recently, the competitiveness of the business model has been put under strain by forceful challenges that change the business environment in the PRD: rising production costs, upgrading pressures, new regulations for export processing businesses, labour shortages, a more employee-friendly labour law, and environmental issues. On the global scale the economic downswing in major customer markets, e.g. the US, and new competitors at other locations are major issues. A recent call of Guangdong's vice-governor Wan Qingliang suggests that the provincial government in Guangdong is going to adjust its policy towards HK manufacturers in the province. The new strategy seems to be in favour of encouraging upgrading of HK-owned low-value factories rather than trying to move these factories out of the province (SCMP 2008).

Against this background, it is the purpose of this paper to present and discuss findings from two surveys of electronics firms in HK and the PRD conducted in 2007 and 2008. The research question is based on the agility hypothesis, that supposes that business in highly competitive environments depends on competencies and resources of firms to capitalise on formal and informal business practices alike to gain flexibility. The results of our analysis may help to better understand how the HK-PRD business model did develop and eventually may sustain its competitiveness in the face of new challenges.

2 Conceptual Background: Agility and Regional Institutions

2.1 The Agility Hypothesis

In developing countries, economic activities of multinational and local companies are mostly located at the lower end of the value chain (Ernst and Kim 2002; Ernst 2002). Therefore, they do not require advanced technological capabilities but cost-efficiency. To be cost-efficient in highly competitive markets (e.g. consumer electronics, IT, food processing, textiles), companies need specific competencies to pool inputs (resources) into the production process that go beyond the concepts of flexible specialization and lean production. Hence, the notion of agility transcends the dichotomy of low-cost vs. high-tech capabilities in the mainstream of the literature by moving the focus towards the economic and social organisation of firms.

The underlying organisational principles of agile firm organisation have not yet been analysed sufficiently. Our paper is based on the assumption that cost- and time-sensitive production in the Greater Pearl River Delta (GPRD)[1] is embedded within fragmented global value chains and therefore largely benefits from informal dynamics (Cheng and Gereffi 1994; Sindzingre 2006). In tough competitive situations, agile firm organisation is an organisational innovation to achieve a sustained competitive advantage by seizing opportunities and coping with threats and uncertainty in volatile markets. Informal dynamics of agile firm organisation are most suitably analysed when its institutional foundations are taken into account. Institutions and governance aspects will be analysed within an informal/formal and spatial (global/national/urban) continuum rather than within a dichotomy that has proven to fall short in capturing the multiple facets of informality.

Business conditions for agile firm organisation are expected to be most suitable in mega-urban regions due to their thick and differentiated input markets. Strategies of agile companies both depend on the existence of regional markets and shape their economic and social development. Therefore, they are expected to have an immense impact on mega-urban economies. The effects of agile firm organisation can be felt in different areas such as labour and human capital, business finance, and technology transfer (Amin 2002; Carr and Chen 2002; Hussmanns 2004; Allen et al. 2006; Kim 2003). Above that, bridging organisations (e.g. knowledge-intensive business services, KIBS) and social institutions (e.g. guanxi networks, informal networks of transforming collectives, social capital) are playing a major role to stabilise the agile pooling of inputs (North 1990; Chen and Chen 2004; Williams and Zhang 2001; Woolcock and Narayan 2000; Chopra 2001; Durlauf and Fafchamps 2005). The building blocks to analyse agile firm organisation are summarized in Fig. 17.1. Each facet will be further elaborated in the following discussion.

[1] The Greater Pearl River Delta (GPRD) comprises nine mainland municipalities of Guangdong province (Dongguan, Foshan, Guangzhou, Huizhou, Jiangmen, Shenzhen, Zhaoqing, Zhongshan, and Zhuhai) and the Hong Kong and Macao Special Administrative Regions.

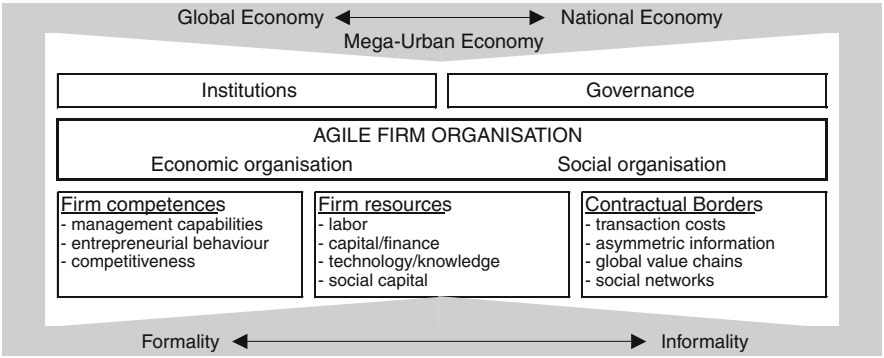

Fig. 17.1 Conceptual framework for global and informal dynamics of agile firm organisation in mega-urban regions (Source: by the authors)

2.2 Agile Firm Organisation and Sustained Competitive Advantage

An analysis of firm organisation has to start with a definition of where a firm starts and where it ends. Two different schools of thought have developed an explanation why firms exist by either a transaction cost or an asymmetric information approach. The existence of organisations of all kinds (e.g. firms, governments, universities, etc.) is justified by the fact that most economic decisions are shaped by uncertainty and a lack of information (Arrow 1974). Therefore, the challenging topic is not to explain why firms exist, but to develop a model that predicts the optimal mix of internal and external operations for a particular firm.

2.2.1 Contractual Borders of the Firm

Transaction cost economics (TCE) opened the "black box" of the firm by analysing internal mechanisms of firm organisation. TCE are related with Williamson (1998) who build on earlier writings by Coase (1937) on the "Nature of the Firm". The aim of TCE is to explain which parts of the production process are either vertically integrated within the hierarchy of the firm or acquired via the market. Transaction costs (TC) result from market imperfections due to the underlying assumptions of bounded rationality and opportunism of economic actors. Generally speaking, high transaction costs result to a high extent by imperfect formal (laws, regulations, etc.) and informal (trust etc.) institutions. So it might be very costly and difficult to take defecting contract partners to court. In Williamson's framework, TCs are determined by three variables: frequency, uncertainty, and asset specificity of transactions. The higher the TCs, the more likely a process will be integrated vertically.

Hence, TCE made essential contributions to the understanding of firm organisation, e.g. when applied to the question whether a firm should integrate parts of the value chain or outsource it to subcontractors (Grossman and Helpman 2002, 2005; Johansson and Quigley 2004; Johansson 2005). This model has also been applied to explain the division of foreign ownership and local control over inputs in outsourcing to China Feenstra et al. (2003). Nevertheless, it falls short in understanding informal institutions (e.g. trust, reputation) that are shaping the behaviour of economic actors.

The TCE perspective will be broadened by the asymmetric information (AI) approach that is closely connected with J.E. Stiglitz (e.g. Stiglitz 1984; Greenwald and Stiglitz 1986). Akerlof (1970) has been the first to analyse the effects of imperfect information in the used car market. Information about a product differs between market participants. Thus, transactions are prone to adverse selection and moral hazard. Different modes of signalling by the supplier and screening by the buyer can reduce this risk and are often combined with informality. Information asymmetries are expected to be highest in developing countries (Stiglitz 1986).

Both perspectives rest upon a dualistic understanding of organisations (markets vs. hierarchy), whereas more recent research stresses the existence of hybrid organisation (e.g. networks, informal contracts) as a distinctive way to coordinate economic activity (Powell 1990).

From the economic point of view, markets should be the most efficient governance mode to organise the production process and herewith relations to customers and producers. Markets are coordinated by prices. Therefore, they remain highly impersonal in comparison to hybrid forms or hierarchies (Menard 2005). The existence of a large number of potential trading partners provides an extensive choice on the one hand, but on the other hand also increases the cost of finding the right trading partner (Bickenbach et al. 1999). Customers and producers can be randomly paired and exchanged. Therefore, specific investments are rare on markets. Market transactions provide players with considerable autonomy and flexibility to exploit profit opportunities by adjusting their behaviour to unfolding events. But in the case of major events which require the adaptation of the entire value chain, market-based chains have difficulties adapting because of their anonymous organisation. Contracts constitute an important arrangement for organising market transactions, since firms do not have much else for the parties to rely upon. Different governance modes use distinct forms of contracts. The classical contracts characterised by legal rules, formal documents and self-liquidating transactions are typical for market transactions (Menard 2005). Therefore, effective third-party enforcement mechanisms (public ordering) are required, which are usually associated with a market-oriented institutional setting (Menard 2005). Markets rely heavily on a formal setting according to the definition of informality. The relationships are usually organised in impersonal ways, and contracts are therefore mostly written in detail and enforcement is organised by courts.

At the other end of the spectrum lies the hierarchical exchange. It characterises transactions that take place under the unified ownership and control of one firm (vertical integration). When investments are very specific, vertical integration is often the best way to protect investments against opportunistic behaviour.

The biggest disadvantage of hierarchies is their low-powered economic stimulation, which reduces their ability to adapt quickly to unpredictable market changes. Moreover, the limited external exchange of information and knowledge can lead to lock-in effects. In contrast, hierarchies provide relatively efficient mechanisms for responding to major market changes where coordinated adaptation of several units of a value chain is necessary (adaptation of entire units). As firms do not need proper contracts for internal firm organisation, managers can easily react to orders and have the right to reallocate tasks (Menard 2005; Klein 2005). It can be expected that HK firms opt more often for a hierarchical organisation when working in China, because it seems to be suitable even if environments are no longer so uncertain. Williamson (1998) refers to a third mode of organisation – the T-mode, where T indicates a temporary or transitional situation. This form can be observed in developing markets where technology and rivalry are undergoing rapid changes. According to Williamson (1998: 50) "Joint ventures [. . .] should sometimes be thought of as T-modes of organization that permit the parties to remain players in a fast-moving environment." Parties can pool resources to meet market demand for price and quality. Unsuccessful joint ventures (JVs) will transform to other governance modes later on, while successful JVs will remain in operation. In this work, T-modes are counted among hybrid forms of organisation. It can be expected that during economic transition in China, firms tend to rely more heavily on those intermediate forms to keep their exibility.

In between markets and hierarchies, the extreme modes of governance, there is a broad range of hybrid governance structures. Examples of hybrid modes include the exchange of shares with trading partners, a joint ownership arrangement, the issuing of a licence to another firm, long-term contracting (framework agreements), franchising, strategic alliances etc. (Shelanski and Klein 1995; Klein 2005; Menard 2004). Hybrids develop when markets shape up as being unable to adequately allocate the relevant resources and capabilities in situations where vertical integration would reduce flexibility, create irreversibility and weaken market stimulation. In choosing a specific form of hybrid, contracting parties attempt to retain the respective advantages and avoid the respective disadvantages of markets and hierarchies for transactions. According to Menard (2004), three regularities characterise hybrids: pooling of resources, contracting modes and competing. The capitalisation on pooled resources and capabilities requires inter-firm coordination and cooperation. This involves the risk of opportunistic behaviour. Therefore, the identity of partners is important. Hybrids involve joint planning and an exchange of codified and tacit knowledge, competencies and technologies. It can be expected that firms which produce complex products for the high-end market rely more often on hybrid firms than on hierarchies or markets (Wang and Nicholas 2007). They want to avoid opportunistic behaviour – a risk of markets. Additionally, they want to facilitate external knowledge transfer, which is difficult in hierarchies. Pooling resources does not make sense without some continuity in their relationship. This leads to different contracting modes – the second regularity. Classical contracts tend only to provide a relatively simple and uniform framework. They are less suitable for serving hybrids in long-term relationships. This assumes that hybrids rely much more on personal issues, because otherwise the risk of opportunistic

behaviour is too high. Without a certain degree of informal constraints-trust, reputation, reciprocity – hybrids do not work efficiently (Bickenbach et al. 1999; Shelanski and Klein 1995; Menard 2005). Therefore, hybrid modes are taken as more informal modes of governance in this work. A third determinant is the role of competition and cooperation among partners. Although they cooperate on some issues, parties also compete against each other. The risk results from difficulties in changing trading partners and unforeseeable revisions regarding the cooperation. Moreover, despite the advantage of limited opportunistic behaviour in long-term cooperation, firms have to bear in mind that they sometimes miss out on good deals from other firms (McMillan 1995: 213). The traits of hybrids seem to be characterised by intimacy, privacy and interdependency of partners. As already discussed by Granovetter, too strong ties result in decreased flexibility and may lead to a lock-in. Additionally, it is not that easy to change the hybrid configuration. It is time consuming and costly to build up such a network of reliable partners. Therefore, firms are not willing to change these network relations too often because than they have to make new investment Karlsson et al. (2005).

Different forms provide firms with different opportunities for doing business. Networked forms of organisation are becoming more important in the economy due to large hierarchies' inability to respond flexibly to competitive changes in global markets and their resistance to innovations (lock-in). Within networks, communication and coordination takes place by relational, reciprocal, and reputational interdependence mainly based on informal dynamics. Hybrid forms of organisation are expected to have the highest potential to reduce uncertainties in economic interactions (Koppenjan and Klijn 2004).

2.2.2 Informal Foundations of Agile Firm Organisation

As outlined above, the paper aims at testing the hypothesis that a sustained competitive advantage (SCA) can be achieved through the use of agility and informal institutions. The informal foundations of agile firm organisations will be discussed from a resource-based viewpoint of firm organisation.

The resource-based view (RBV) of firm is concerned with resources (e.g. assets, capabilities, organisational processes, etc.) that enable a firm to produce their final products more efficiently and effectively. Barney (1991: 101) divides firm resources into three categories: physical capital, human capital, and organisational capital resources. According to Porter (1996), a firm strategy can use these resources to achieve a SCA against its competitors, i.e. a unique competitive position which cannot be imitated by competitors – a comprehensive review of SCA definitions can be found in Hoffman (2000). Hence, the uniqueness of firm strategies based on informal procedures (e.g. planning, controlling, and coordinating systems, relations within a firm and with its environment) are expected to be higher than those solely based on formal procedures.

Agile firm organisation is an organisational innovation that has an effect on the competitive position of the firm. It transcends popular concepts of competitiveness that have been shaped by cost competitiveness and product differentiation

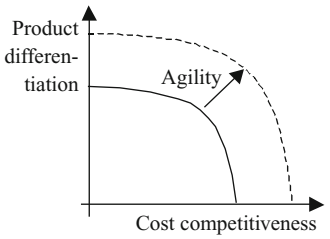

Fig. 17.2 Impact of agile firm organisation on the competitive position (Source: by the authors)

(see Fig. 17.2, Porter 1996). The notion of agility came into use with the publication of a report on enterprise strategies in the twenty-first century Iacocca Institute (1991). It has then been popularised by one of the authors of this report (Kidd 1994). On the basis of his work, agile firm organisation is defined as an "organisation's capacity to gain competitive advantage by intelligently, rapidly, and proactively seizing opportunities and reacting to threats" (Bessant et al. 2002: 487). It is closely connected with concepts like flexible or lean production (Gunasekaran and Yusuf 2002). However, these concepts are mainly concerned with restricting firm activities to its core competencies and speeding up production processes (Kidd 1994: 10). Agile firm organisation moves the focus towards the integration of organisational and management structures that enhances the capacities of the firm. Therefore, it is rather a pattern of behaviour than a specific response or outcome (Bessant et al. 2002: 488).

Agile firm organisation is closely connected with recent changes in production systems. Piore and Sabel (1984) have described newly emerging network structures in industrial production that offer competitive advantages for flexibly specialised small and medium-sized enterprises (SMEs). Within this production paradigm, ownership of resources is less important than knowledge about where to access them and how to manage them in relation to the production network (Hakansson and Snehota 1997). Know-who and know-where are becoming as important or even more important than know-how (Harryson 2002). If resources for the production and distribution process (e.g. labour, finance, market access) are governed by a network-structure external to the firm, an adoption of informal practices is usually required (Cheng and Gereffi 1994). Hence, the informal foundations of agility are based on a firm's organisational capability to pool physical and human capital resources by a flexible combination of formal and informal procedures that are exemplified in the next section (for a compact economic discussion of these trends in business organisation see the papers in Siebert 1995).

2.2.3 Resources and Competences for Agile Firm Organisation in Newly Industrialised Regions

In developing countries, a firm-centered perspective has to be based on the development of technological capabilities (Lall 1992) and the concept of the latecomer firm (Mathews 2002). Latecomer firms are mostly lacking essential resources to achieve

sustained competitiveness. Therefore, they have to span links to other actors and generate opportunities to leverage resources. For example, an OEM subcontractor can leverage knowledge from customer linkages in developed countries. To internalise the knowledge, i.e. to learn (Viotti 2002), latecomer firms need a sufficient amount of absorptive capacity (Cohen and Levinthal 1990). Thus, latecomer firms can extend their technological capabilities and reach a sustained competitive advantage by leveraging external resources (Mathews 2002).

However, this development path is not an easy one. Amongst others, it depends on the management competences, the entrepreneurial behaviour, and the institutional framework to leverage resources (e.g. opportunity to establish links, access to and transferability of resources, formal and informal institutional barriers). The competence-based view of the firm – based on the ideas of Veblen (1898) – extends the analysis of resources needed for a firm's competitiveness. It specifies the kinds of competences a firm need to make use of these resources, i.e. how it may capitalise on them (Foss 1998). Therefore, it is closely related with concepts of bounded rationality and innovative learning.

Management competences are closely related with entrepreneurial behaviour, i.e. the alertness to changing economic conditions and the capacity to discover profit opportunities by either imitation or innovation (Kirzner 1988). Yu (2000) has elaborated that the dynamic entrepreneurship in Hong Kong and the GPRD differs markedly from other regions. Its uniqueness is based on the ability to seize opportunities by creative imitation. Latecomer firms from Hong Kong attack markets more flexibly than established companies (guerrilla entrepreneurship) and use the advantages that are offered by regional arbitrageurship and co-ordination between Hong Kong and mainland locations (Yu 2000). The cultural, economic, and political environment in the GPRD has been beneficial for entrepreneurial strategies that are conducive to informal dynamics of agile firm organisation.

Besides strategies and competences, agile firms are dependent on the institutional framework for leveraging labour, capital and technological resources. They are trying to pool inputs according to volatile market demands. Examples of institutions needed for agility are:

- Flexible or low regulations for labour conditions,
- Migration laws ensuring an abundant availability of workers with low payment,
- Incentive systems to improve retention and loyalty of high skilled employees,
- Access to different methods of financing,
- Flexible approval procedures,
- Weak enforcement of intellectual property rights,
- Lackadaisical execution of environmental requirements,
- Direct access to decision makers in favour of own requirements,
- Social capital (e.g. guanxi) to stabilise the volatility brought about by agility.

2.3 Greater Pearl River Delta: The World Factory in Perspective

Agile firm organization is closely related with the development of mega-urban regions. Their thick input markets and global–local interfaces are particularly suitable for this kind of firm organisation. Above that, highly flexible modes of production with intense interregional and intraregional interactions had an outstanding impact on the creation of mega-urban regions, particularly in East Asia. They are main drivers of settlement dynamics, contribute to the loss of planning control and governability, and constitute the complexity and dynamics of material and resource flows in these regions.

From precolonial times onwards, the GPRD has been among China's interfaces to global markets and first experiments introducing market-like elements to the Chinese economy have been made in the GPRD. The delta has been one of the fastest growing regions in the world since the economic co-operation between Hong Kong and Guangdong started with the establishment of Special Economic Zones (SEZs) in Shenzhen and Zhuhai in the 1970s. A recent survey estimates that about 60,000 companies with ten million employees in the mainland municipalities of the GPRD are linked with Hong Kong based companies. Industrial output and exports of the GPRD are higher than those of the Yangtze Delta Region surrounding Shanghai (Enright et al. 2005). Today, the GPRD promotes itself as the factory of the world (BrandHK 2005).

The relocation of industries has led to a complex system of megacities and suburban areas that has been described as a mega-urban region or a megalopolis (Castells 1996: 406; Lin 2001: 386). According to census data, the population of the GPRD climbed to about 50 million in 2002 even though the registered population is smaller since it does not include migrant workers. The largest cities are Guangzhou (9.9 million inhabitants), Shenzhen (7.0), Hong Kong (6.8), Dongguan (6.5), and Foshan (5.3) (Enright et al. 2005: 18, 48). In 2002, the GPRD (without Hong Kong and Macao) accounts for 3 % of the Chinese population, 9 % of its GDP, but 34 % of its trade and 22 % of its foreign investments (Enright et al. 2005: 11).

According to Enright et al. (2005), industrial output in the GPRD is mainly from light manufacturing (e.g. toys, textiles, and garments) and the electrical and electronics industry (e.g. consumer electronics, watches). The few heavy industries (e.g. chemicals or plastics) mainly serve as suppliers for these industries. Table 17.1 indicates regional differences between Hong Kong and four mainland municipalities of the GPRD with the highest GDP. Since the figures differ widely between sectors and sub-regions we will select a significant sample to analyse agility in different regions and sectors.

The accelerated development of the GPRD can only be fully understood if its informal dynamics are taken into account. Relocation of subcontracted manufacturing from Hong Kong and Taiwan has been accompanied by an inflow of production factors from other parts of China (e.g. migrant workers) and from all over the world (e.g. foreign direct investment) (Chen 1994). It has been mainly driven by market-forces and completely changed the face of the GPRD within a few

Table 17.1 GDP and gross industrial output of selected industries in the GPRD, 2002

	Hong Kong	GPRD (mainland)	Guangzhou	Shenzhen	Foshan	Dongguan
Total GDP in billion USD	154.99	113.75	36.25	27.26	14.20	8.13
GDP in industry in billion USD	19.22	56.62	12.91	13.00	7.19	4.19
GDP in service in billion USD	135.46	51.52	20.18	12.11	5.77	3.29
Share of selected industries in total industrial output of these industries	100%	100%	100%	100%	100%	100%
Electronic/telecom equipment	11%	46%	17%	82%	15%	63%
Electric equipment/ machinery	8%	17%	13%	7%	48%	12%
Textiles and garments	52%	10%	14%	3%	16%	10%
Chemicals	8%	8%	20%	2%	5%	5%
Transport equipment	9%	7%	24%	2%	5%	1%
Plastic products	[a]	6%	7%	4%	10%	8%
Metal products	13%	6%	5%	0%	1%	1%

Source: own calculations based on Enright et al. 2005; Enright and Scott 2005
[a]Included in chemicals

decades. The 'one country, two systems' policy opens the opportunity to take advantage of the market-led system in Hong Kong and of regulations in the Chinese mainland by informal sidestepping.

Specific kinds of entrepreneurship and social capital add up to the importance of informality in the GPRD. Above that, Hong Kong has been ranked as the world's freest economy for the 12th consecutive year in the Index of Economic Freedom of the Heritage Foundation (2006). Its unique openness to exports and foreign investors is making agile firm organisation and informality more likely than in other parts of Asia. The development of the GPRD has been based on the paradoxical combination of mass production in SMEs, e.g. in electronic devices and toys (Augustin-Jean 2005). Hence, the GPRD is particularly suitable as a study region for our research question.

Intraregional linkages and a spatial division of labour between Hong Kong and the mainland municipalities of the GPRD have been one of the critical factors to the growth of the region as a whole (FHKI 2003). Input factors are complementary to a large extent, i.e. technology, finance, and management know-how are available in Hong Kong, labour and land are deployed in the mainland. This unique combination of low-cost and knowledge-based production has lead to the competitiveness of GPRD's companies (Meng et al. 2000; Enright et al. 2005). Recently, many mainland companies or manufacturing bases succeeded in upgrading their position in the value chain. Although most of the headquarter functions or knowledge-intensive business services (KIBS) are located in Hong Kong, intermediate capabilities (e.g. industrial engineering, design) have been developed in the mainland. Besides that, one should not forget about the big number of endogenous firms

in Guangdong; some of them even established their own multinational production networks (e.g. Huawei, TCL). Walcott (2002) observes an endogenous Chinese development model in the Shenzhen Hi-Tech Industrial Park which she labels "bridge high technology". Chinese high-tech start-ups are producing in the GPRD, but still depend on interregional links with Chinese universities for knowledge and financial inputs.

Agile firm organisation and informality are expected to have specific spatial effects in mega-urban regions. On the one hand, these regions are most suitable for production of this kind due to their thick input markets. On the other hand, agile firms can sustain their competitive advantage by co-location and spatial monopolies. Hence, their existence initiates regional agility and volatility of input markets and locational decisions. As shown above, informal social networks can stabilise this process.

3 Data and Methods

The data for this paper has been collected by two surveys of electronics firms in HK and the PRD. The electronics industry has been selected because it is the most important manufacturing industry in the PRD and closely connected to HK via cross-border business models. Its sub-sectors electronic information and electrical machinery and special purpose equipment are two of the three emerging industries in PRD with very high average annual growth rates between 2001 and 2005 of 32.4 % and 26.4 % respectively (FHKI 2007: 36). Above that, the electronics industry covers a broad range of activities from household appliances and consumer electronics to semiconductors and integrated circuits. It consists of companies that are producing parts and components, and companies that assemble final goods. Therefore, it is possible to analyse developments at different phases of the value chains and in sub-sectors at different technological levels. Many of its sub-sectors offer potentials for upgrading and innovation activities. Electronics is also favoured by the provincial government of Guangdong as a future growth sector. If compared to the textile or toy industry, it is also not that much influenced by external regulations, e.g. the multi-fibre agreement, or distinct market dynamics like, e.g. seasonal cycles.

The HK survey has been conducted between August and December 2007. A database with 4,640 electronics SMEs in Hong Kong with production facilities in the PRD has been provided by the HKTDC. A random sample of 3,000 companies has been contacted and 104 firms have been interviewed face-to-face with a standardised questionnaire by interviewers of the Social Science Research Centre, Hong Kong University. The PRD survey was carried out by the Center for Urban and Regional Studies at Sun-Yat-Sen University, Guangzhou, between November 2007 and February 2008 with a focus on Dongguan and Guangzhou.

It is well known that Shenzhen and Dongguan are the most important production locations for HK firms in the PRD due to historic reasons. It is expected that business models connecting HK and Shenzhen/Dongguan are similar. Therefore,

a comparison of applied business models connecting HK firms directly (Dongguan/Shenzhen) and maybe more indirectly (Guangzhou) with firms in the PRD promised to be more interesting. Finally, Dongguan and Guangzhou were selected to conduct the PRD survey. Dongguan was preferred to Shenzhen due to accessibility to firms.

Firms in Dongguan were selected from the Guangdong Electronics Company Catalogue 2007. Firms in Guangzhou have been sampled from a list of the Statistical Bureau of Guangzhou in special industrial districts with a high density of electronics firms, i.e. Luogang, Tianhe, Baiyun, Panyu and Huadu. In total, 222 telephone interviews have been carried out based on a standardised questionnaire. 116 firms are located in Guangzhou, 89 in Dongguan, and 18 in adjacent districts. The sample structure will be described in more detail below. In addition to the surveys, our research team carried out ten in-depth interviews with large electronics companies in Hong Kong and more than 30 interviews with experts in HK and the PRD, e.g. bankers, lawyers, traders, politicians, and academics.

4 Customer Producer Relations in the GPRD

This section aims at providing an overview about the functionality of the HK firm's network in the GPRD. In times of permanently shortened production cycles in the electronics industry and high market volatility due to steady changing customer demand, efficient value chains are fragmented and spread worldwide. The GPRD hosts successfully one of the major production centres of the electronics industry. As firms cannot survive as single units in the globalised world, they are integrated into network structures. A major competitive advantage of the firms in GPRD is its excellent and well-functioned firm network. This section seeks to analyse and highlight the special structure of relations in the GPRD production network. First, the economic integration of the GPRD in the world economy will be focused on combined with a spatial analysis of the production network in the GPRD. Second, the governance of relations to customers and producers will be analysed and third, the way HK and PRD firms smooth their relations by informal modes will be highlighted in terms of customer and producer recruitment, orders dealing and dispute resolution.

4.1 GPRD's Integration in the World Economy

4.1.1 Main Markets

The integration in the world economy can be recognised by the analysis of markets. Firms were asked in the survey to indicate their final product markets. Thereby, they should focus on the end consumer market not the location where the firm sells

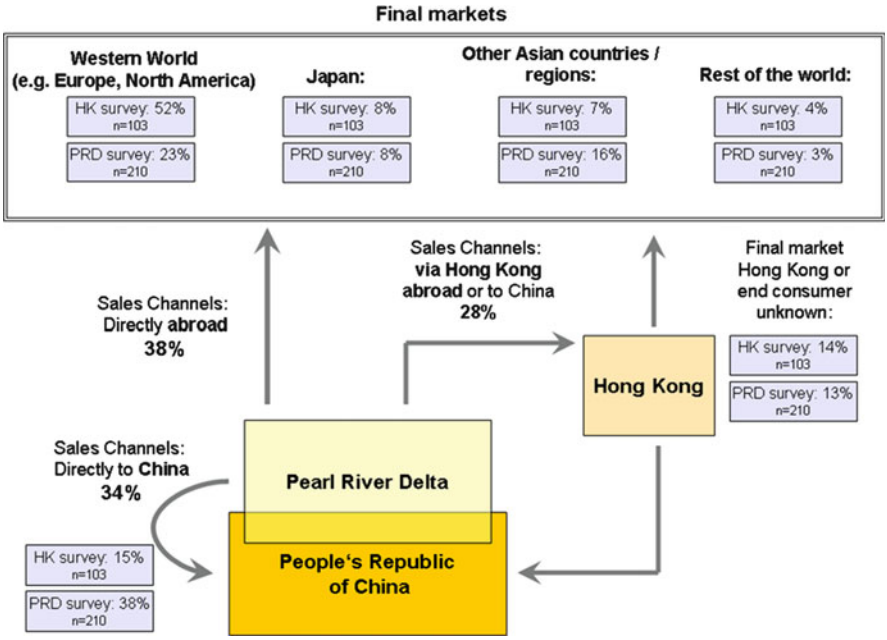

Fig. 17.3 Final markets and sales channels of HK and PRD firms (Source: own survey)

the products next to (e.g. when they sell products via trading companies). Fig. 17.3 compares the sales volume 2006 of firms in the HK and PRD survey. Whereas firms in the HK survey find their most important single markets in North America and Europe (each 26 %), products made in firms in the PRD survey mainly serve market in China (38 %). Surveyed PRD firms are much more oriented on the Chinese market, but they also play on the global platform. 23 % of their products are sold to North America and Europe. 13 % of the surveyed PRD firms and 14 % of the surveyed firms in HK indicated to have their main market in HK. But it is well known, that some firms engaged in component manufacturing do not know their final markets' share. It is expected that they indicated to sell to HK based firms without knowing the further sales' distribution of their HK customer. This explains why the share of firms reporting that HK is an important market is relatively high. The international orientation of HK firms is manifold. First, large international lead firms discovered HK manufacturers as reliable and price-competitive suppliers for production outsourcing. Second, Chinas opening and its processing trade policy, which encouraged HK firms to produce, but not to sell to the PRD in the past, forced HK firms to sell on the international instead on the Chinese market. By now, HK firms are discovering the Chinese market as well. 15 % of firms in the HK survey reported to find their final consumers in China. Whereas HK firms sell more goods on the Chinese market, firms in PRD become more internationally oriented. This sets the GPRD in a more powerful position as a global production centre.

4.1.2 Sales Channels

The analysis of sales channels concentrates on how firms organise to transfer their products to their final markets. In the 1980s HK firms provided sophisticated global sales and distribution channels. Surely, this contributed to the lead firms' decision to outsource to HK firms. Thus, nowadays parts of the PRD production is transferred to consumers via those channels as well. According to the survey in the PRD, 28 % of all PRD sales are organised via HK. They distribute as following: 13 % of all PRD sales are managed by a HK-based affiliates, 8 % via a HK based trading companies and 7 % via other HK based firms. Products sold via HK are either intended for the Chinese or international market. 38 % of the PRD sales go directly to international markets and another 34 % are sold directly to China. A differentiation according to the ownership structure reports, that HK-owned firms in the PRD are responsible for the biggest share of products sold via HK, whereas Chinese and Taiwanese owned firms in the PRD account for the high share of products sold directly to the Chinese market. For HK entrepreneurs in the PRD it is profitable to use their established sales and distribution network. Chinese owned firms in the PRD only partly refer to those channels. They tend to independently build up their own sales and distribution network.

4.1.3 Producer Network in the PRD

In the following section we will elaborate upon what our survey says about how production networks in the GPRD are organised. For an illustration of business networks in the GPRD, firms were asked about their customer and producer relations. HK firms' most important customers are mainly located in final markets, which mean North America (23 %), Europe (22 %) and HK (21 %) itself. Therefore it can be assumed that HK firms concentrated on manufacturing and exports of final electronics products. In contrary 40 % of all PRD firms have their most important customer in HK. The location of final markets of surveyed firms in the PRD differs substantially from the location of the location of their most important customer. This illustrates that firms in HK have an essential role as a customer for products manufactured in the PRD. HK and PRD firms work on different steps in the global value chain system. Only some PRD firms take on a position in the global value chain comparable to firms located in HK. Reversely, HK firms mainly indicated their most important producer to be located in the PRD. In the HK survey, firms indicated that Shenzhen and Dongguan host each 39 % of the main producers. In comparison, only 3 % of the surveyed HK firms' producers are located in Guangzhou.

As mentioned in the introduction, the business models connecting HK firms with Shenzhen and Dongguan are expected to be similar. Therefore, the PRD survey was conducted in Guangzhou and Dongguan to give a comparison. 41 % of the firms in the PRD survey are located in Dongguan and another 53 % are located in Guangzhou. In both cities, districts with a high density of electronics firms were

Table 17.2 Proximity of firms in the PRD survey and their most important producers

If firm is in Dongguan, then producers are in spatial proximity		If firm is in Guangzhou, then producers are in spatial proximity	
Location	Percentage	Location	Percentage
Same city	16	Same city	36
Guangzhou	2	Dongguan	5
Shenzhen	19	Shenzhen	7
Guangdong (elsewhere)	33	Guangdong (elsewhere)	24
China (elsewhere)	13	China (elsewhere)	10
Hong Kong	2	Hong Kong	8
Other Asian regions	11	Other Asian regions	6
North America/Europe	4	North America/Europe	4
Total	100	Total	100

Source: own survey

selected. In Guangzhou, the Tianhe, Panyu and Huadu District were most relevant, in Dongguan Changan, Dongcheng and Houjie District were selected.

It has been shown, that firms in the HK survey work closely with their producers in the PRD. They are expected to forward orders to the first tier producer in the PRD. Additionally, firms in the PRD survey were asked to indicate the spatial distribution of their producer network. This second tier producer network is also located in the PRD in proximity to the first tier producers (see Table 17.2). Firms in Dongguan reported to have their most important producers in Dongguan (16 %), Shenzhen (19 %) or elsewhere in Guangdong (33 %). Producers in Guangzhou indicated to have 36 % of their producers in Guangzhou and 24 % elsewhere in Guangdong. Firms in Dongguan and Shenzhen are less relevant for them. In Dongguan as well as in Guangzhou about 17 % of the main producers are located abroad. It can be assumed that high qualified products like semiconductors are supplied from abroad. Producer network in PRD seem to be locally concentrated in the cities without far reaching linkages. But firms in Guangzhou concentrate their producers in closer proximity then firms in Dongguan do. This is statistically significant. Both cities host firms which are mainly linked to HK, because their main customer is located in HK (firms in Guangzhou: 55 %, firms in Dongguan: 68 %). Additionally, firms in Guangzhou indicated to source and import a substantial part of their products in HK (firms in Guangzhou: 46 %, firms in Dongguan: 39 %).

The survey revealed that HK firms concentrate on final products' sales to end markets. PRD firms focus on both the Chinese and the international market. Despite HK is only of minor importance as final market, it takes its role as the important sales channel for PRD made goods. A detailed view on the production networks in PRD shows, that HK firms' producers are mainly located in Dongguan and Shenzhen. HK firms first moved their production into the PRD and concentrated on these two cities. Guangzhou as the core city in Guangdong province has a relatively low importance for HK firms as a location for production. But a comparative analysis of firms in Dongguan and Guangzhou shows that firms in Guangzhou also have strong connections to HK. The surveyed firms in Dongguan and

Guangzhou dominantly fall back on producers located in close proximity to them. Despite the extensive international distribution network of products made in PRD, one characteristic of production networks is their local concentration. This could be an essential characteristic for the agility of firms in the PRD.

4.2 Governance of Customers and Producers in the GPRD

4.2.1 Hong Kong's Impact on the PRD

As strong interaction could be found between HK based and PRD based firms, it seems of importance to look how those linkages are organised. Well known is that HK firms tend to set up their own production site in the PRD, but from the survey it can be seen, that cooperation with firms in the PRD are also of high importance (see Table 17.3). Out of 104 surveyed firms in HK, 35 firms indicated to have no own production plants in the PRD and another 60 firms reported to have no plants under cooperation agreement. 57 firms in HK indicated to have one wholly owned production site in the PRD and 12 firms even have two or more production sites. Moreover, 22 firms reported to control production plants under cooperation agreement and another 22 firms govern two or more of those plants. Firms could additionally indicate exactly how many production plants they manage entirely or partly. Out of 88 production plants which are wholly owned 78 (89 %) are located in the PRD. Out of another 163 production plants under cooperation 145 (89 %) are established in the PRD. This lets conclude, that 223 (89 %) firms in the PRD are directly managed and governed by 104 HK firms (proportion 1: 2.4). HK firms' impact in terms of management and governance in PRD seems to be very high. Since these data only refer to SMEs in the HK survey, the figure would be expected to rise if large HK conglomerates were included.

4.2.2 Governance Modes of Customer and Producer Relations

HK firms mainly organise their production in the PRD within their own company (hierarchy). Alternative modes to organise customer or producer relations are equity cooperation, non-equity cooperation and markets. When firms organise their production in joint ventures, they decide to cooperate with another firm and share the ownership of the production unit. When firms decide to cooperate without shared ownership (non-equity cooperation), they conclude an agreement which provides a rough framework about the collaboration without fixing the details. It requires the mutual understanding of partners. Cooperation of any type always implies a lot of understanding and reliability between managers. Thus, cooperation needs more informal modes to make it work successfully. When firms act on markets, they only have buying and selling agreements without any further cooperation or commitment.

Table 17.3 Organisation of HK managed production plants in the PRD

	100% own production plants				Plants under cooperation				
	0	1	2+	Sum	0	1	2+	Sum	Sum of all
No. of firms in the HK survey	35	57	12	104	60	22	22	104	–
No. of production plants, thereof	0	57 *(100%)*	31 *(100%)*	38 *(100%)*	0	22 *(100%)*	141 *(100%)*	163 *(100%)*	251 *(100%)*
In the PRD	0	54 *(95%)*	24 *(77%)*	78 *(89%)*	0	20 *(91%)*	125 *(89%)*	145 *(89%)*	223 *(89%)*
Elsewhere	0	3 *(5%)*	7 *(23%)*	10 *(11%)*	0	2 *(9%)*	16 *(11%)*	18 *(11%)*	28 *(11%)*

Source: own survey

As HK firms first moved their production to the PRD, they set up own production sites and adapted to the weak institutional environment in China. A lack of legal security and reliability and missing business and trade laws led to a cross border production pattern, where HK firms dominantly managed production in the PRD. Formal laws in China did not provide enough safeguard to protect trade. Despite HK managers started to smooth relations by the establishment of personal relations to Chinese partners in daily business, they did not decide to rely on Chinese firms for their production. Moreover, there was a shortage of suppliers in the PRD and a lack of capabilities to provide quality products. But especially in the beginning firms were hindered to set up own production sites, because the Chinese government forced HK firms to organise production processes within joint ventures with Chinese firm. Only HK firms which moved to the PRD in the end of the 1980s were allowed to establish own production sites.

In contrast, firms in the HK survey prefer market based relations (see Table 17.4) with their global customers. Customers usually place orders to firms in HK (66 %). Worldwide established institutions to regulate international trade provide sufficient safeguards for HK firms. 28 % of the firms in HK cooperate with their customers, only 6 % have any equity relations. However, HK firms organise their customer relations via markets, but cross border production of HK firms is organised via complete control (55 %). *In contrast*, electronics firms in the PRD survey mainly receive orders from customers in HK (65 %). Only 18 % of the surveyed firms are affiliates of HK based firms. Despite over half of all surveyed firms in HK have own affiliates in the PRD, they only account for a small part of all firms in the PRD. The PRD survey shows that it is typical for HK owned firms to have own production sites in the PRD. Firms in the PRD owned from Chinese, Taiwanese or other foreigners typically work on cooperation or market based relation with customers in HK. When firms in the PRD survey indicated how they organise their relation to their most important producer, 65 % indicated to buy supplies from independent producers. Another 20 % cooperate with their producers and only 15 % of the firms in the PRD survey receive their most important supplies from firms which they wholly or partially own. Comparing customer and producer relations of firms in the HK survey, large differences can be seen which are statistically significant. Firms in the HK sample have hierarchical relations with their producers and market like relations with their customers. Although firms in the PRD survey prefer market like relations with customers and producer, their distribution according to the organisational modes is significantly different.

Table 17.5 informs about which factors determine what governance modes firms in the HK and PRD survey prefer to organise their customer and producer relations. For firms in the HK and PRD survey it was found that the higher the profits made with one partner (*Dependence on customers and producers*), the more likely the relationship is to be organised in a hierarchical way. This seems to be natural, if firms have set up their own affiliates, then most of the production is run by that affiliate. Firms rarely begin subcontracting large shares of production to other firms. Using the market place means choosing the best partner and spreading risk, which usually results in a more diverse pool of customers and suppliers. As political

Table 17.4 Organisation of customer and producer relations of HK and PRD based firms

	To most important	n	Hierarchy (wholly owned affiliate) (%)	Equity cooperation (e.g. joint venture) (%)	Non-equity cooperation (%)	Market (just placing orders) (%)	Sum (%)
HK survey	Customer	104	2	4	28	66	100
	Producer in the PRD	104	55	16	16	13	100
PRD survey	Customers in HK	88	18	10	7	65	100
	Producer	215	9	6	20	65	100

Source: own survey

Table 17.5 Factors determining which governance mode firms select to organise customer and producer relations

Determinants	Trend to hierarchical relations	Significance
HK firms		
Location of customers and producers (1)	When customers or producers are in China	++
Dependance on customers and producers (2)	The higher the volume of sales or products bought	++
Years of working experience (3)	The more working experience exists	++
PRD firms		
Dependence on customers and producers (2)	The higher the volume of sales or products bought	+
Working experience (3)	The more working experience exists	++
Ownership structure (4)	The more foreign capital is involved	+
Innovativeness (5)	The more innovative firms are	+

Source: own survey
+ significant (on $p < 0.05$), tested Cramer's V
++ highly significant (on $p < 0.01$), tested Cramer's V
Classification
(1) = China, abroad
(2) = 20 % or less, 21–50 %, 51–80 %, more than 80 % (data 2006)
(3) = 6 years or less, 7–10 years, 11–16 years, 17 years or more
(4) = PRD: 100 % CN owned, CN/foreign Joint Venture, 100 % foreign owned, floating shares
(5) = less than 50 points, 50–90 points, 90 points or more

changes can be sudden in the PRD, HK firms prefer to control and govern the maximum share of their production. Moreover, the years of working experience (*Working experience*) with customers and producers is significantly associated with certain governance modes. With an increasing number of years the likelihood that transactions are embedded in hierarchies rises. As markets ease the switch of partners, those relations are naturally shorter, but in the PRD the location-specific institutions act cumulatively on that pattern. Relations of HK firms to the PRD producers set up before China entered the WTO and CEPA was concluded (*working experience more than 6 years*) were difficult to manage on a market basis. Firms which established contracts after 2001 (*working experience 6 years or less*) could enjoy a much more stable situation in China, which encourages more HK firms to work within cooperation or market-like relations. This also explains why foreign owned firms (*Ownership structure*) in the PRD survey more often indicated to work with own affiliates instead of independent producers. Moreover, in the PRD survey, innovative firms more often indicated to work in hierarchies with their customers and producers (*Innovativeness*). This can be explained first by the ownership of firms. Foreign firms tend to be more knowledge-intensive as Chinese firms and as seen above foreign firms prefer to work in hierarchies with their customers and producers. Second, the more innovative a firm is, the more formal safeguards are needed to protect against imitation. Hierarchies provide the highest safeguards (e.g. full control) to ensure against knowledge flow to outsiders. In the HK sample governance modes highly depend on the *location of customers and producers*,

Table 17.6 Governance modes and years of working experience of surveyed firms in HK

	Years of working experience with most important producer				
Governance mode	6 years or less (%)	7–10 years (%)	11–16 years (%)	17 years or more (%)	In total (%)
Hierarchy	40	47	69	100	55
Equity cooperation	17	16	23	0	16
Non-equity cooperation	26	21	4	0	16
Market	19	16	4	0	13
Total	100	100	100	100	100

Source: own survey

which indicates that the institutional environment in certain locations is highly influencing. Other factors like firm size (employees, sales) or age are insignificant for the choice of governance modes.

4.2.3 New Trends to Organise Relations in the PRD

As formal rules and safeguard provided by laws improved in the PRD, business uncertainty decreased. Our survey shows that HK firms obviously started to rethink about the organisational modes applied to producers in the PRD. 100 % of all firms in the HK survey which have worked with their producers for 17 years or more applied a hierarchical relation. But only 40 % of firms in the HK survey which have worked with their producers for 6 years or less indicated to have a hierarchical relation. It must be assumed, that some firms changed their governance modes over time (e.g. firms separated from their Chinese joint venture partner after they were allowed to establish a wholly foreign owned firm), but this is still an exception. Firms usually tend to stick to the originally chosen governance mode regarding a certain producer. Firms in the HK survey which indicated that they start to work with their main producer in the PRD 6 or less years ago, more often apply equity or non-equity cooperation (see Table 17.6). Firms in HK tend to concentrate on brand building, innovation, product development and marketing, instead the extension of their factories. Own factories are used to produce high-sophisticated innovative products. Qualified Chinese firms can take over the mass production process. They build up relations to new independent producers, which take over the role of the most important producer.

The cross border production pattern changes and successful firms in HK tend to look for appropriate partners to supply them. It could be shown that firms in the HK survey have changed their behaviour in the last 10 years significantly and preferred cooperation to Chinese firms instead of strongly organised hierarchies. Although they do not have full control and influence on producers, they have to manage fast changing orders and shorter delivery times. They must keep their flexibility. This is only manageable with a reliable relation to producers. The next section will focus on how firms select new producers, gain new customers and whether they keep their

supply flexibility. Furthermore, it will be analysed how firms solve disputes with those producers. It will be examined how firms organise their cooperation relations and what impact informal arrangements have.

In summary, to reach flexibility, firms have different *options to organise their relations to customers and producers*. The most important producer of firms in the HK survey is mostly an own production site (hierarchy) in the PRD. However, the more recently a producer in the PRD has been chosen, the more often it is not organised as an own production site, but as a (non-equity) cooperation or a joint venture partner (equity cooperation). To be successful, cooperation requires additional safeguards based on informal and personal linkages. In contrary, the relation to the most important customer is organised via market-based buying and selling agreements, cooperation is rare. The differences in customer and producer relations can be explained partly by the weak-developed institutional environment in China which forced HK firms to control wholly-owned plants in the PRD. It did not provide enough stability for market-based transactions. Additionally, the quality of Chinese producers was low in the beginning. Recently, improvements of the Chinese institutional system and better qualified producers allow for a shift from wholly-owned production sites to cooperative partners. As a result, more informal governance modes are required to increase mutual understanding and reliability.

4.3 Competitive Advantages by Smoothing Relations

4.3.1 Customer Recruitment

When firms in HK look for new customers, they have different opportunities to contact and gain them. A very official and formal process would be to participate on bidding competitions. Furthermore firm can search actively for new customers. E.g. they can exhibit on fairs, they can work with sales agents or use member lists of business associations to contact new customers. More informal and personal is the use of business contacts, e.g. potential customers can be recommended by business partners. When firms rely on private contacts to gain new customers, it is even more informal. Surveyed firms in HK ranked the different channels to contact customer on a scale from (1) very important to (5) not important. Table 17.7 presents that *active searching* (2.65) is most important for firms in the HK survey to contact new customers. The use of *business contacts* was ranked second, *private contacts* and *bidding competition* is of lower importance. Informal channels which are based on business and private contacts are only of medium importance. A correlation analysis shows the connectivity between the data. If the figure (correlation coefficient) in the matrix in Table 17.7 is close to 1, firms which reported a high importance of one channel also reported a high importance of another contact channel. If the figure is close to 0 no correlation between the channels can be assumed. In Table 17.7 it is apparent, that firms which ranked active searching high, also significantly often emphasised the importance of private contacts (correlation 0.335). Firms which

Table 17.7 Importance of contact channels for HK firms and their correlation

Contact mode	Importance HK[a]	Correlation (1)	(2)	(3)	(4)
(1) Active searching (fairs, agents, internet)	2.65	1	0.094	0.335^{+}	0.124
(2) Business contacts (former workers, recommendations)	3.06		1	0.502^{+}	0.355^{+}
(3) Private contact to potential customers (e.g. family ties)	4.28			1	0.308^{+}
(4) Bidding competition	3.99				1

Source: own survey
$^{+}$ = The correlation is significant on the level of 0.01
$^{++}$ = The correlation is significant on the level of 0.05
[a]Mean value, 1 = very important to 5 = not important

Table 17.8 Selection criteria for producers in the PRD since 1997 (HK survey)

	Equity-cooperation[a]	Non-equity cooperation[a]
Expertise	2.09	2.06
Good reputation	2.00	2.06
Good experiences in former business	1.81	2.13
Existence of personal relationships	2.00	2.81
Get along with local workers/suppliers well	2.91	3.13
Get along well with public officials	3.18	4.19
Required by CN law	3.91	4.63

Source: own survey
[a]Mean value, 1 = very important to 5 = not important

ranked formal bidding competition high also significantly often stressed the importance of business and private contacts (0.355 and 0.308). This leads to the conclusion that firms in the HK survey tend to combine formal and informal channels to recruit new customers. It cannot be confirmed that firms in HK use a more formal western style to manage their customer relations. They use the spectrum of formal and informal opportunities, which certainly contribute to their success to attract new business to HK.

4.3.2 Producer Selection

As firms in the HK survey indicated that cooperation partners in the PRD become more important, the selection criteria for producers in cooperation are analysed. Thus, equity and non-equity cooperation to producers are analysed which were established after 1997. This focus is set to show how firms nowadays select their producers (see Table 17.8). When firms look for joint venture partners good experiences in former business (1.81) is most important to select them. The second most important criteria is a good reputation and personal relations (both 2.00). Former motivations (like getting along well with public official, suppliers or

Table 17.9 Days of negotiation with customers and producers according to their governance mode

	n=76 (%)	Days of negotiation with customers (mean value)	n=74 (%)	Days of negotiation with producers (mean value)
Hierarchy	2	nA	46	2
Equity cooperation	1	nA	19	6
Non-equity cooperation	36	7	22	4
Market	61	13	13	7
Total	100		100	

Source: own survey
nA = not available, sample to small

workers) to take on Chinese partners in form of joint venture have lost their importance nowadays. When firms in the HK survey decide to invest in a shared owned firm, they consider a smooth relation to their partner. They have to ensure mutual understanding when quick response is required and strategic agreements are concluded. When mutual understanding is missing, firm's risk to invest without returns is too high. If firms in HK search for partners on the basis of non-equity cooperation, they rank the expertise and reputation of partners highest (both 2.06). Non-equity cooperation is not as long term oriented as equity cooperation. Therefore firms in HK put less emphasis on mutual understanding but more on expertise of partners.

4.3.3 Flexibility in Relations

For firms in HK quick response to orders is most important for successful dealing with them. Thus, quality in customer and producer relations can be measured by the time they need to agree on order details, before the production process starts. As demand is changing quickly, western lead firms require a quick reaction of firms in HK to their orders. When customers decided to place an order to a HK electronics firm, they want to keep the time to negotiate contractual details low as it delays the start of the production process. From Table 17.9 can be seen, that firms in the HK survey which work in close cooperation with their customers (framework agreement is concluded in advance) need only half of the time (7 days) to work out contractual details. When customers' relations are market driven, firms need about 13 days to agree on details which need to be fixed before a final order can start the production process. After HK firms have received orders from international customers they have to negotiate with their producers as they need supplies from them. When firms in HK have own production sites in the PRD, only 2 days are necessary to pass on final product specifications or delivery schedules, before the production process can start. When firms in HK organise their production in a joint venture it already takes 6 days until final details are agreed with the management of the joint venture. Firms which have reliable cooperation partners in the PRD only

Table 17.10 Modes of dispute resolution of firms in the HK and the PRD survey

Mode of dispute resolution	HK survey (%)	PRD survey (%)
Negotiation only	45	62
Negotiation and mediation	11	27
Negotiation, mediation, arbitration and letigation	44	11
Total	100	100

Source: own survey

need 4 days to pass on and finalise order details with their producers. When firms in the HK survey rely on market relations with their producers it takes them another 7 days to work out price, delivery time and product quantity and quality before the production process can start.

Cooperation with customers which is based on framework agreements concluded in advance provide a basement for quicker exchange than market relations although the majority of HK firms do not take advantage from cooperation. Cooperation requires more mutual understanding and personal effort to maintain, but it seems to enhance firms' flexibility. No doubt that own production sites minimise the time to pass on orders, but reliable producers in non-equity cooperation also shorten the time of negotiation. The advantage of own (sometimes expensive) production sites to keep flexibility is vanishing.

4.3.4 Dispute Resolution

Despite firms select their producers carefully and work out appropriate contracts to safeguard trade, it might happen that disputes occur. Dispute resolution can be very formally organised when firms go for litigation. But firms can also decide for alternative dispute settlement. They might negotiate, mediate or arbitrate with their producers. Negotiation is the most informal mode to solve disputes. When negotiation does not lead to a satisfying result, firms can go for mediation. A third person tries to support parties to solve their conflicts, but the third person is not allowed to judge. Mediation is more formal than negotiation, but still provides more informal elements than arbitration. Arbitration can follow mediation or negotiation when no solution is reached. Arbitration requires one or three arbitrators who have the right to give a judgement. Arbitration is a direct alternative for litigation, but it is confidential and not open for the public. It has a similar status to litigation, but it still ensures more privacy. Its character tends to be less formal than litigation. 45 % of the surveyed firms in HK indicated that until now they have used only negotiation to settle disputes with producers (see Table 17.10). 11 % used negotiations followed by mediation and 44 % reported that they also consider arbitration and litigation for dispute resolution. Nearly half of the firms in the HK survey only rely on informal dispute resolution processes. The other half uses the entire spectrum of opportunities to solve dispute. In contrary surveyed firms in the PRD significantly more often negotiate only with their producers (62 %). Another 27 % step on to

when disputes occur. Only a few firms go for arbitration and litigation with their producers. Firms in the PRD very strictly keep to negotiation only. This can be explained by the lacking quality and reliability of the Chinese court system. Firms are forced to solve conflicts informally among them. The survey in HK shows that a functional legal system encourages more firms to find the appropriate dispute resolution process. Although HK firms can use courts, most firms in HK still prefer negotiation as informal mode to solve disputes, because in many cases this is most appropriate one. Negotiation can take place quickly and often with relatively little expense in contrast to taking the dispute to court. It focuses on the parties' real commercial, emotional and psychological needs and not just on their legal rights. Negotiation gives the parties an opportunity to participate and control directly and informally in resolving their own dispute. Negotiation relies on the good will to reach an agreement confidentially. This increases the probability to stay with the reached agreement later on, even if it is not legally binding. Negotiation is confidential, nobody loses his face and reputation in the public. Privacy and confidentiality is a culturally embedded value of the Chinese society. When the situation requires it, firms in HK take their producers to court. This does not happen immediately, but follows a negotiation process. The results show again that firms in HK tend to use formal and informal modes of dispute resolution at the same time. This makes them flexible while having the chance to choose the appropriate mode to solve disputes, which contribute as an explanation for the competitiveness of firms in HK.

The results obtained clearly underline that agile firms make use of formal and informal business practices in order to gain flexibility:

- When firms in HK *are searching new customers or producers* they apply a combination of formal and informal modes. This mix provides an opportunity to choose flexibly the most appropriate option, e.g. quick identification by informal modes versus quality-driven but more time consuming identification by formal modes. Customers are most often gained by active searching (e.g. via sales agents, exhibitions and fairs) which is directed by business and personal contacts. Selection criteria for cooperation partners in the PRD are their expertise combined with a good reputation and experiences in the past.
- To compete on a global scale, firms need to *minimise negotiation time*. Our survey results indicate that response time of customer-producer relations of firms in the HK survey which are based on cooperation can compete with those organised in a hierarchical way. Thus, cooperation which requires more informal modes of understanding can guarantee a quick and flexible response to global markets at the same time.
- *Conflicts with producers* are solved by negotiations by half of the firms in the HK sample. Negotiations are also based on informality in order to keep privacy and confidentiality. But firms do not hesitate to go for arbitration or litigation when negotiations fail. An informal conflict solution is mostly the quicker alternative. Again, the use of informal modes increases the choice of options to solve disputes which enhances flexibility.

5 Conclusions

Since the open-door policies initiated in the special economic zones in the PRD in 1978, more and more HK firms have gradually relocated or expanded parts of their business operation from HK into the PRD, which has strongly contributed to the economic development and prosperity in this region. As results, more and more cross-border economic activities occurred and the economic integration within the GPRD has been intensified. With rapid changes in the global business environment and in the political arrangements towards innovation and upgrading, firms supposedly need to efficiently utilise available resources, inclusive their informal assets such as personal networks to increase their capability to flexibly and effectively cope with the new challenges.

HK-related firms are well-known in their capability to quickly adapt themselves to the new market conditions. To figure out whether and to what extent HK-related firms utilise informal assets and institutions available to increase their behavioural flexibility, we conducted HK survey on the electronics SMEs as well as PRD survey on electronics firms in 2007 and 2008. Several in-depth interviews with large electronics firms in HK and with experts from different areas in the GPRD were also carried out to complement our surveys. Our findings were summarised in this paper. We began with the overview of our HK as well as PRD sample in order to figure out whether there are indeed strong needs embedded in the current business and political conditions for informal and flexible organisation of firms. After that, we focussed on "customer-producer relations" and "industrial innovation" on the other hand to clarify how firms operating in the GPRD transformed the needs for agility into different kinds of means and actions in these two areas to sustain their competitiveness in the global market.

Regarding needs for agility, we find that about 66 % of firms from our HK sample and almost 60 % of those from our PRD sample faced strongly increasing competition in the last 5 years. Taking firms facing moderately increasing competition also into consideration, the corresponding figure for firms from both surveys amounted to more than 90 %. Despite intensifying competition, markets of major products of the responding firms were still characterised with growing trends in general, however, also with high-level volatility. This corresponds to our assumption about the current business conditions faced by firms in the GPRD. To rapidly response to the changing business environments and to quickly react to the new challenges, high predictability of firms with respect to changes in, for example, price, volume and political arrangements would be advantageous. In this regard, we find that government regulations in China have been the least predictable, while the required quality of products and delivery times are well predictable. Price and volume of orders are prone to quite unforeseeable changes. This result of relatively low predictability corresponds on the one hand with the fast changing conditions faced by firms operating in the GPRD. On the other hand, such low predictability implies that firms are forced to put more attention and give more efforts to make them be capable to cope with all possible emerging situations as quickly as possible.

With respect to transforming needs for agility into diversified actions and means to cope with new challenges, we find that firms have adapted their governance modes regarding to their relationships to their customers and produces, so that the modes can function compatibly with the up-to-date business environments. Long-term cooperation relationships with their producers and customers enabled them to more flexibly react to the changing requirements of the markets. Regarding to searching for new customers and selecting adequate production partners, informal channels were of slightly lower importance than formal ones. However, our analysis also shows that both types of channels were applied at the same time in reality, indicating the complementary character between informal and formal institutions. In addition, we also find the importance of informal ways for firms operating in the GPRD in dealing with business disputes. While firms in HK tended to use formal and informal modes of dispute resolution at the same time, firms in the PRD preferred informal negotiations than formal litigation.

With respect to agile firm organisation in general, the findings of our research confirm the hypothesis about the interaction of informal arrangements and flexible firm organisation. Informal institutions for doing business in the GPRD are not going to become less important with further development and improvement of the Chinese legal system. Adequate application of informal factors within given formal constellations enhances the capabilities of firms to more flexibly react to the fast changes in the political and business environment to sustain their competitiveness in the global market. However, future research is needed. This paper has focused on producer and customer relations. The research has to be expanded to investigate organisation and governance modes in other critical business areas such as innovation and finance. But in the long run, a crucial research question for the competitiveness of the GPRD is whether the detected business model, which has its roots in low-cost, high-volume production and a spatial division of labour between HK and the PRD, will be appropriate when firms are upgrading by improving either their innovation capabilities or their position in the value chain. The rapid restructuring has started to shape the PRD's economy: More and more firms are enhancing their technological and management capabilities setting the base for an upgrading of the overall economy, which is also complemented by education and training efforts.

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