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# **Inter-cultural economic practices and institutional support in Shanghai's automobile supplier industry**

by

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## 1. Introduction

Studies of the Chinese economy in recent years have documented the significant impact of global production networks and strategic couplings, and studied the linkages between regional clustering and innovation (Fan 2006, Sun and Wen 2007, Wang and Lee 2007, Miao, Wei and Ma 2007, Kim and Zhang 2008, Yeung 2009, Zeng and Bathelt 2011, Wei and Liefner 2012). In comparison, less attention has been paid in economic geography to potential problems that can arise in the internationalization process due to the fact that the firms involved originate from different national innovation and production systems and are embedded in different institutional environments and cultural contexts (Klaerding 2011). Because of such differences, new transnational production and innovation settings are not always efficient. We argue in this chapter that barriers and boundaries in economic interaction can play an important role in everyday practices in such contexts. Foreign branches and subsidiaries have to bridge political, social, institutional and cultural differences between home and host country. Products that are experiencing a boom in demand in Germany, for example, can prove to be non-sellers in Beijing, if advertising campaigns use symbols that have a negative association for Chinese consumers, or if Chinese consumer preferences are misjudged. It is, therefore, an important task to examine and understand the ways in which certain structures in production and consumption emerge, why they differ from one context to another, and how they diffuse spatially.

As opposed to studies that emphasize continuous flows and influences of information, goods and regulations, and continuous upgrading processes in global value chains (Thun 2004, Liu and Dicken 2006, Wang, Ren and Yan 2010), this chapter focuses on the ruptures and tensions that arise when firms embedded in one national/cultural system expand to a different system. At the individual level, such tensions originate from differing business attitudes of managers and workers, liabilities to opposing corporate cultures and associated practices of order and control, or deviating commitments to national/cultural identities. Firms that develop activities abroad are directly confronted with these problems. They have to deal with different technological and institutional standards when they involve local suppliers or when managers from foreign countries direct and lead local personnel.

It is the aim of this chapter to investigate how different standards and practices affect the integrative potential of German and Chinese operations in the automobile supplier industry, focusing on the Shanghai region. The concept of national innovation systems provides a starting point for the empirical study of how the embeddedness of behavioral standards and competences of individuals and firms affect integration options with firms from different national contexts. This provides a broader explanation of the dynamic interrelationships between production, institutions and innovations within a particular national setting (Lundvall, Johnson, Andersen and Dalum 2002). This chapter uses this approach as a basis to conduct an analysis at the micro-level, investigating the behavior of firms and individuals in firms.

While drawing on this conceptualization, this chapter is primarily empirical in character. It focuses on examining two interfaces of economic interaction: First, we investigate how German suppliers in Shanghai integrate Chinese sub-suppliers in their purchasing strategies (e.g. Zhao and Zhi 2009). Second, the structure of Chinese-German joint ventures is analyzed to identify how German managers who work as expatriates in Shanghai cope with the Chinese economic and cultural environment and how they collaborate with local staff in China. As such, this chapter synthesizes the findings of a comprehensive study about the investment activities of German automobile suppliers in China that started in 2001. Although the acquisition of primary data through interviews and systematic observation was completed in 2005, the results are still highly relevant and have been updated through media and association reports, as well as other research. While some of the firms investigated might have overcome the barriers and problems documented, follow-up research and conversations with policy makers have shown that similar problems can (and do) occur today when firms establish or expand operations in China. As shown in this chapter, such problems are related to different social and cultural practices and fundamentally different institutional conditions for production and innovation. As such, our research exemplifies types of economic problems that may occur in inter-cultural production contexts, as well as possibilities to avoid these.

This chapter is structured as follows: Sections 2 and 3 describe the conceptual and regional/sectoral background of this study. Section 4 then analyzes cooperation patterns between German and Chinese firms, and section 5 investigates interaction patterns and practices that exist

between German and Chinese staff within joint ventures. Finally, section 6 discusses implications for firm strategies and support policies and section 7 concludes.

## **2. National production structure, institutions and economic action**

One way of analyzing the interaction patterns, trade flows and interdependencies in international production arrangements is to treat these as parts of global value chains (Gereffi, Humphrey and Sturgeon 2005). Dicken, Kelly, Olds and Yeung (2001), for instance, suggest an actor-network-based understanding of global production networks that draws on the complex interrelationships of economic networks across different spatial scales, and emphasises the tensions between networks and territories, as well as the role of power relations, related to large transnational firms that control these networks (Depner and Bathelt 2005). This chapter, however, chooses a different form of analysis by focusing on the discrete barriers and ruptures that exist in interaction patterns between actors/firms from different national cultural/economic contexts. We use the national-innovation-systems approach as a starting point for our analysis, as it prioritizes such a discrete perspective on between-system differences. In particular, it enables us to develop a broader view of the *reflexive dynamics of production and institutional contexts*, and not just a conceptualization of innovation processes (Lundvall, Johnson, Andersen and Dalum 2002).

According to Lundvall (1992), technological and industrial specialization, as well as the institutional profile of a national state and its innovation system, influence how actors interact with one another and how knowledge is created. The actors in the production system are linked through institutions which enable them to interact and reproduce the system's structure. They continually change these institutions in an incremental manner through reflexive action (Setterfield 1993), generating systematic feedback between institutions and economic action over time (Edquist and Johnson 1997, Lorenz and Lundvall 2006).

As illustrated in Figure 1, institutions are manifest at the level of the individual in the form of habits of thought and behavioral habits (Hodgson 2003). These habits are based on mental models (Denzau and North 1994, DiMaggio 1997). They are formed from repeated thoughts and

actions, and are consolidated over the long term. As such, they form the basis for recurrent, intended and unintended actions as they make certain types of consistent action more likely than other less consistent types. Technical preconditions and artifacts, as well as the broader settings of the capital-labor nexus, also shape the behavior of employees in industrial firms (Gertler 2004).

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Insert Figure 1 about here

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In the case of foreign direct investments, national manufacturing cultures cause industrial practices to be exported by expatriate actors to foreign target regions (Klaerding 2011). As a consequence, encounters with local actors, who are embedded in different institutional frameworks and economic structures, require the adaptation of rules and different structures in economic behavior and practices between the firms (Boyer 1998). In the case of the German automobile industry in Shanghai, different production structures have to be integrated that are based on different state, society (culture) and industry settings, as Chinese partner firms operate based on different traditions and routines (Sun 2002). National innovation systems, in this sense, serve as barriers to a simple transfer of economic practices. Before analyzing the problems and challenges arising from the need to meet different standards and behavioral patterns at both the individual and the firm level, we briefly describe the context of the automobile industry in Shanghai in the next section.

### **3. The automobile industry in Shanghai**

An important collective actor in the automobile industry in China is Shanghai Volkswagen (SVW). This joint venture between the Shanghai Automotive Industrial Corporation (SAIC) and German Volkswagen (VW) was founded in 1984 following an initiative of the Chinese central government (Thun 2004, Liu and Dicken 2006). SVW first imported parts for the model

‘Santana’ from Germany, which were then assembled in Shanghai (Depner and Bathelt 2005). At the end of the 1980s, the Chinese central government demanded that SVW increased the proportion of locally purchased parts and established a so-called local content rule in production. As a result, SVW had to develop its own supplier network in Shanghai. This was achieved by two processes: First, in 1991 a large number of local suppliers were integrated into the SAIC group, thus expanding its corporate network. Second, VW also persuaded its German suppliers to establish plants in Shanghai. Because of the then underdeveloped industrial sector in the Shanghai region and SAIC’s primary interest in the transfer of capital and technology, the foundation of joint venture corporations with a SAIC subsidiary was the only way for German automobile suppliers to enter the market in the 1990s (Sit and Liu 2000).

At the time of our interviews, SVW was no longer the only or dominant buyer for the German automobile suppliers located in Shanghai, as had been the case in the 1990s. The firms had successfully expanded their customer base, associated with liberalization of the automobile market in China and the country’s accession to the WTO, which pushed the growth of the automobile industry. Today, all of the major automobile producers are represented in China, and Chinese firms such as SAIC have become important competitors (Vwd: Asien 2004, Spiegel Online 2007). As a consequence, SVW’s market share fell from more than 50 % in the mid-1990s to less than 10 % in 2005 (Bundesagentur für Außenwirtschaft 2006). This decline can, in part, be explained by the fact that VW delayed changes for too long, such as the expansion and diversification of its local production program or adjustments to local market requirements. Despite this relative decline, VW remained a strong and profitable player in the Chinese automobile market and in production.

Since 2009, China has become the largest automobile market worldwide (Zhao and Zhi 2009, Bartsch 2010). This has led foreign automobile firms to further focus on their Chinese operations, upgrade these activities and schedule new investments. Automobile suppliers in the Shanghai region now engage in upgrading activities by expanding research and design functions (Dicken 2005), while relocating standard production and assembly activities to inland locations (Zeng 2008). This has led to further changes in the automobile supplier cluster and the regional linkage structure in Shanghai (Depner and Bathelt 2011). German automobile suppliers and producers

have continued to expand – or planned to expand – their activities significantly despite the relative loss of significance of SVW (Depner and Dewald 2005).

#### **4. Cooperation between Chinese suppliers and German buyers**

Before turning to the specific situation of German-Chinese joint venture firms, we analyze how institutional and technological differences influence cooperation between Chinese suppliers and German buyers. The findings are based on 60 interviews with German and Chinese managers and experts in Shanghai, as well as interviews and systematic observations in five case studies of joint venture firms. For the latter part of the study, German general managers or production managers were accompanied over several days. The object of this ethnographic approach was to observe the structure of interactions with Chinese colleagues. Where difficulties in coordination and conflicts arose, we enquired into the reasons for these and classified the individual cases in structural terms: five groups of firms were identified according to purchasing characteristics, such as product type, relationship of the branch plant to the parent company, level of local content, localization strategy, and preferred supplier type.

The groups of automobile suppliers identified are shown in Table 1 according to decreasing local content (Depner 2006). Group 1 firms with above-average local connections consisted of producers of basic parts and components. They produced in China for several years, did not employ expatriates and were relatively free of influences from their German headquarters. Due to their Chinese managers' existing contacts to local industries, they cooperated almost exclusively with Chinese suppliers. There was also a very high local content in the foundries group (Group 2), based on their substantial raw materials needs. The potential for technological transfers, as well as spillovers, appeared greater than assumed by De Propris and Driffield (2006), who investigated similar foreign direct investments in clusters.

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Insert Table 1 about here



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In the other groups, the proportion of locally acquired materials dropped rapidly with increasing technological intensity in the production process. In technology-intensive sectors, imports from foreign suppliers were more important than Chinese supplier relations. A central reason for the declining presence of Chinese suppliers with growing technological intensity was related to the latter using standards that differed too radically from those of the German buyers, as was emphasized in our interviews. This was a reflection of institutional differences in the national production and innovation system making inter-firm interaction more difficult (e.g. Lundvall and Maskell 2000). The system/module suppliers (Group 4) and firms with above-average international connections (Group 5) complained that it was almost impossible to develop Chinese suppliers so that they would meet the requirements of German customers.

In supplier relationships between German and Chinese firms, flows of expertise were significant, especially in the areas of production technology, quality management and cost calculation. In these areas, the German branch plants had to guide Chinese suppliers individually to meet the expected standards, involving a high input of work and time. Attempts to create a joint institutional basis for cooperation and the development of accepted, functioning power relations in the sense of Latour (1986) were thus very costly. Sometimes, additional expatriates were flown in from Germany, especially for this purpose. In the area of production technology, the German suppliers were often faced with potential Chinese suppliers who had little or no experience in the automobile industry but nevertheless thought they could supply the required products easily and cheaply (Interview G01).

As an example of such conflicting structures, one interview partner from a German supplier suggested that Chinese sub-suppliers often would not understand why parts had to be made in accordance with specific production procedures, especially when the parts made differently were visually identical. The interviewee insisted that Chinese firms did not pay the same attention to the exact specifications of products as their German competitors (Interview G33).

Representatives of Chinese suppliers confirmed practices of *ad hoc* production. One Chinese manager reported that his company had received complex systems as samples from customers,

dismantled these and sent some of the parts to other suppliers with the request to have them copied based on visual inspection (Interview G32). Due to related negative experiences, some German suppliers cut back on the development of Chinese suppliers or had given up entirely, and, instead, switched to foreign suppliers in the region (Interview G46). As such, local content data cited in the literature is somewhat misleading in terms of the true involvement of local domestic firms.

We can assume that the share of Chinese suppliers in the purchasing networks of German firms would be lower if the German firms had not formed joint ventures and taken over the supply networks of their Chinese partners. However, this was only possible where the Chinese partners were already active in the automobile industry before the joint venture was formed. Ten of 18 firms with German involvement in our interviews had been able to use at least some existing local suppliers from the very beginning (Depner 2006). The networks of sub-suppliers were later modified after the foundation of the joint venture. This involved switching some of the sub-suppliers, consolidating purchasing networks and expanding them. As demonstrated in the next section, collaboration and communication practices established within Chinese-German joint venture operations also involved problems and did not help to create broad trust in inter-firm interaction.

## **5. Cooperation within Chinese-German joint ventures**

Figure 2 shows the structure and organizational integration of a typical German-Chinese joint venture firm in the automobile industry in Shanghai in the 2000s. Because joint ventures between SAIC subsidiaries and German suppliers accounted for the majority of the joint ventures studied, Figure 2 relates to this form. The joint ventures were typically supervised by a Board of Directors (BoD) in which the partners had voting rights in accordance with their capital shares. The strategic aims of a joint venture were decided by the BoD, which controlled the development of the firm and scrutinized the decisions made by the operative management. The latter was formed by staff from both partner firms if the capital shares were equal or almost equal. Frequently, the rule existed that the general manager (GM) and deputy general manager (DGM) would exchange positions after a certain period of time – usually after four to five years. German

suppliers typically hired a new person, especially for the position of GM or DGM, or sent experienced staff members from their headquarters or from a subsidiary plant. Sometimes, further technical or management personnel were also sent to China.

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Insert Figure 2 about here

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### 5.1 Types of German-Chinese joint ventures

Five different types of joint venture firms were identified in our study in Shanghai according to the relationship of German/Chinese capital shares (Table 2). The type of involvement in management indicated in Table 2 is referred to as operational if the production and engineering divisions were under German control; it is alternatively referred to as commercial if the German side headed at least two of the departments of finance, purchasing, or sales (Depner and Bathelt 2011).

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Insert Table 2 about here

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The group of joint ventures with SAIC involvement and balanced capital investments of both partners (Group b) was a very peculiar one because it was the largest group of firms with seven cases. It was also a group where it was particularly interesting to study the social relations between the joint venture partners because no one partner dominated *a priori*. Given the differences in habits and institutions related to the differing German and Chinese production and innovation context (see Lundvall and Maskell 2000), this generated a challenging environment for the creation of efficient communication patterns, ongoing translation of information, as well

as coherent power relations. A notable feature of these joint ventures was that the German side was responsible for production and technology while SAIC subsidiaries ran general administrative functions. In the joint venture firms where the German firms held the majority of shares, they focused on control over the commercial functions. However, this did not mean that control over production and technology was relinquished. Instead, where German firms held the majority of capital shares, they provided the general manager who ultimately exercised control over all business segments and corporate functions. Overall, we found that the German share in a joint venture tended to be higher with increasing technological complexity – yet, a similar type of regularity was much less clear with respect to the number of expatriates employed at the site (compare Tables 1 and 2).

In the operations with balanced capital investments (Group b), the German parent firms employed a considerable number of expatriates to manage the respective joint ventures, in one case as many as 14 individuals in three plants. The number of expatriates was substantially higher than in firms where one joint venture partner was dominant, suggesting that Group b operations were in need of closer control. Similar patterns were also noted in other studies (Lang 1998, Hoon-Halbauer 1999), which supports that cooperation in international joint ventures is particularly difficult, possibly because of the different origins and cultural imprint of the actors involved. In the joint venture firms studied here, difficulties of coordination were identified at different levels. Only in two of the seven Group b joint ventures was cooperation relatively unproblematic. In the other five cases, serious problems were quite common. In three firms, the German and Chinese parts of the management actively obstructed each other. In a fourth case, the German production manager reported that his predecessor had been sent home a few weeks ago because he could not work with his Chinese colleagues. The Chinese management was also replaced a few days later because cooperation with the German management was still disrupted (Interview G48). Due to distrust and obstruction, it was impossible to establish any sort of ongoing cooperation or functioning power relations.

## 5.2 Personal relationships as a basis for cooperation

In the literature, the importance of personalized business relationships or *guanxi* is often especially emphasized in the Chinese context. As described in Depner and Bathelt (2005), these are important because formal institutional mechanisms to assure economic interaction and to create trust are not highly developed (Redding 1993, Kutschker and Schmid 1997, Wang 2001). According to Hwang (1987: 952), *guanxi* are reciprocal and long-term relationships that are both instrumental and emotional in nature, based on an observed or constructed common ground. In order to develop and maintain *guanxi*, it is important to know another person and to show respect (*renqing*). In turn, the recipient of a favor is expected to return such favor later on, especially upon request. If the person does not comply with this behavior, the recipient's reputation might be damaged within shared wider personal network. The phenomenon of *guanxi* is closely connected to the concept of "face" (*mianzi*): the more "face" an actor has within his/her network, the more respect that individual will enjoy and the more he/she will be approached with respect to cooperation (Redding 1993, Park and Luo 2001).

In the context of Chinese-German joint ventures, good personal relationships with Chinese agents appear to be key for the success of German expatriates (Pearce and Robinson 2000). Although such relationships were not exact equivalents of Chinese *guanxi* relationships, it was clear that some components of *guanxi* had to be in place to establish a trustful communication across corporate divisions and between the employees as a basis for coherent power relationships. Based on our interviews, we selected case studies for in-depth analysis of the nature of the relationships of German expatriates within their joint venture partners and employees in an ethnographic study. A total of eight expatriates were observed in five joint venture firms. Table 3 gives an overview of the structure and quality of the social relations of the expatriates studied (Depner 2006). In two joint ventures (JV2 and JV4), the expatriates succeeded in developing and managing the firms' operations so that no rift between the German expatriates and the Chinese employees developed that impeded cooperation. However, in the other three joint ventures (JV1, JV3 and JV5) clear problems were documented (see, in the following, Depner and Bathelt 2006).

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Insert Table 3 about here

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In JV2 and JV4, Mr. K., Mr. N. and Mr. F. had adapted well to their inter-cultural management positions. All three had acquired professional experience before their employment in Shanghai began. At the time of our study, they had developed good relationships with important Chinese actors in the joint ventures: Mr. K. and Mr. N. with their personal assistants and Chinese DGMs, Mr. F. with the chief purchasing officer and the financial head. The quality of these social relations exceeded that which would have been required in the context of a joint venture in Germany. Mr. K., Mr. N. and Mr. F. developed personal friendships with some of the Chinese managers and discussed decisions intensively with them. The Chinese contacts became mentors to the expatriates with regard to the overall interaction in the Chinese context. All three expatriates openly discussed existing problems within selected Chinese employees, and avoided criticizing them in front of other employees. As a consequence, they were widely respected within the workforce. Interestingly, both JV2 and JV4 can be classified as localizing component producers (joint venture group G3 according to Table 1).

Mr. P. and Mr. H. in JV1, in contrast, had not managed to develop good relationships with Chinese key personnel. Both production managers in JV1 had a designated personal assistant but mostly used him as a translator. The result was that the personal assistants only demonstrated a limited degree of loyalty. They also did not respect their joint immediate Chinese superior and disputed his leadership qualities and specialist knowledge even openly in larger meetings. The social relations of both expatriates with Chinese managers were characterized by mistrust. Our observations suggested that Mr. P.'s and Mr. H.'s instructions to the workers appeared to fall on "deaf ears" on occasion, indicating limited influence.

Mr. M., Mr. G. and Mr. T. in JV3 and JV5 also had no Chinese confidants in their companies whose advice they would have accepted. Mr. M. tried to push through his ideas in opposition to those of the Chinese division managers in JV3 and resisted his orders. The expatriates in JV3 and JV5 visited the factories several times a day to supervise and control production and assembly.

While the workers in JV5 interrupted their breaks for Mr. G.'s visits, the workers in JV3 hardly reacted to Mr. M.'s presence. Mr. T. in JV5 had offended Chinese colleagues and customers through personal attacks, such that a Chinese assistant was compelled to accompany him permanently.

Overall, the examples of the eight expatriates surprisingly exemplified substantial shortcomings in communicating with their Chinese counterparts and in building personal relationships. The best way to achieve ongoing communication and learning was seemingly to be in close contact with one or more Chinese actors as demonstrated in JV2 and JV4. Through dialogue and comparison with the behavior of Chinese actors, opportunities arose to reflect upon their own habits, adapt to the new environment (Hodgson 2003), and bridge institutional differences between the German and Chinese systems of production. Dialogue and comparison initiated processes of direct learning and adapting to the different institutional context in similar ways as conceptualized by Denzau and North (1994). Ultimately our research suggests that good relations with local workers strongly depend on the quality of social relations an expatriate has with key Chinese personnel within the joint venture.

## **6. Policy implications and strategies for bridging institutional differences**

In this section, the findings of our research are used to identify in three steps important aspects of policies and strategies that can help German suppliers to succeed in the Chinese socio-institutional context. Our empirical findings show that technological as well as institutional differences at an international level can strongly inhibit the potential for couplings at both the personal and the firm level. The first subsection investigates whether production in China can be more efficiently organized in the form of joint ventures or WFOEs (Wholly Foreign Owned Enterprises). The second subsection discusses which measures can be used to achieve better cooperation at the level of individual actors and the third subsection is concerned with institutional support for firms, particularly through German organizations and associations.

## **6.1 Joint ventures or WFOEs?**

Joint ventures were the most common form chosen by foreign automobile suppliers that intended to produce for the Chinese market. The main reason for the preference of joint ventures over WFOEs was that Chinese car makers usually had their own supplier networks. Foreign suppliers were typically integrated into these networks in the form of joint ventures and utilized their capital and expertise. Firms which became integrated in these networks were able to use already established connections for purchasing and sales. Suppliers who did not wish to enter into a joint venture could, in the worst case, block their own entry into the market (Depner 2006).

As described above, in joint ventures with equal capital shares the number and intensity of conflicts between the German and Chinese partners tended to be very high. The agents, decision paths, styles of working, etc. often deviated from or contradicted each other, leading to blockades. Where this type of supplier joint venture was enforced by the Chinese side, the high risk of conflicts was minimized by the way of choosing the Chinese partner firm particularly carefully, by testing cooperation in small projects in advance, and by negotiating favorable contracts and agreements. In other cases, a joint venture with German capital majority and a Chinese partner firm appeared to be a natural choice to be on the safe side. Because of the significance of informal institutions and personal relationships, a partner's existing contacts were very useful to be employed in the interest of the joint venture.

## **6.2 Boundary spanners in joint ventures**

The findings of our study also show that not all German expatriates were equally capable of working efficiently with Chinese colleagues or managing Chinese employees (Depner and Bathelt 2005). The main reason for this was a lack of understanding or acceptance of Chinese norms and behaviors that led to different institutional settings and to different interpretations of the production context. It was, therefore, important for firms to select so-called "boundary spanners" for important interface positions within the joint venture (Coe and Bunnell 2003). Boundary spanners are generable able to learn and understand norms and rules of both national systems and cultural contexts. In our situation, they were able to develop transnational inter-



personal networks and communicated efficiently with actors from both sides. Understanding the respective other social context required learning processes on the part of the actors, in which their own perceptions and behavioral patterns were consistently questioned and new ones accepted (Denzau and North 1994, DiMaggio 1997, Figure 1). However, this could not be accomplished from one day to the next.

Our research suggests that, among the German expatriates, those seemed to be more adaptable to play this role who had worked in other cultural contexts for longer periods of time and who had to modify their habits because of different interpretations of social behavior. German firms cooperated better if they placed trained or experienced Chinese personal assistants at the expatriates' sides, who were able to act as inter-cultural trainers. Those joint ventures, where expatriates had close contact with their assistants and took their advice seriously (JV2 und JV4), were more successful than the others (Table 3). Chinese employees, in turn, learned to understand the routines in German factories better when they worked in these facilities over a certain period of time. Through involvement and observation, they became familiar with this context and began modifying their own habits.

### **6.3 Institutional support through German organizations and associations**

Our study indicated that Chinese sub-suppliers were often not fully compatible with their German counterparts, as production procedures and the organization of production differed markedly between the two groups of firms. For this reason, the proportion of Chinese suppliers used by German firms seemed to decline with increasing technology-intensity in production (Table 1). A strategy chosen by the majority of German firms to achieve a high local content was to adopt the supplier network of their Chinese joint venture partners and modify it subsequently (see, also, Thun 2004). However, this route was not open for German suppliers which established a joint venture with a Chinese partner firm that had no experience in the automobile industry, or for those that decided to set up subsidiary firms without local partner. These suppliers aimed to make up for this lack of network relationships by hiring high-profile purchasing and quality management staff, who had extensive prior experience in dealing with Chinese suppliers.

At the time of our interviews, the potential for concerted actions on the part of the German firms and related associations and organizations to improve the availability of information about Chinese suppliers and support the development of their skills and competencies was not exhaustive. Although quality management certificates of the German Automobile Industry Association (VDA) were introduced in China in the late 1990s, their acceptance and implementation by Chinese suppliers was described as inadequate by our interviewees. Some of the Chinese firms seemed to view these certificates as harassment and a deliberate barrier to market entry, introduced in favor of foreign competition. The adoption of these standards involved a considerable degree of restructuring and corresponding levels of investments. Not all Chinese firms agreed with these requirements. For example, one Chinese firm decided against a lucrative supplier contract with SVW because certification was a precondition for acquiring the contract (Interview G32). Given the strong presence of German automobile corporations, the pressure on German industry associations and related organizations increased to intensify their efforts to generate training possibilities for Chinese suppliers in areas, such as skill development or quality management.

Related institutional support in China substantially grew in the late 2000s. VDA, for instance, established a branch in Beijing in 2006 that particularly focused on quality management. The goal of this facility was to support German firms increase their share of local suppliers in China. Beijing was chosen as a location to be close to Chinese political and corporate decision makers. In 2007, a second branch was opened close to VW's facilities in Anting near Shanghai. Through these branches, auditors in quality management were trained and certification courses offered with the goal to improve the quality of in the Chinese supplier segment (QZ 2008, VDA 2011).

In Taicang, about one hour from Shanghai, where many small and medium-sized German firms had production branches, the Hannover IHK (Chamber of Commerce), Neustadt Vocational Training School and AHK (Delegation of German Industry & Commerce) Shanghai established new training programs for Chinese workers jointly with the Chieng Shiung Institute of Technology and its facilities. In these programs, 50 toolmakers and mechatronic engineers are trained at an annual basis since 2007 in accordance with the German dual vocational training system. The graduates from these programs receive a skilled craft certificate is equivalent to a

German degree. The success of this project led to its diffusion to other Chinese cities, such as Wuxi and Jinan (IHK Hannover 2010, AHK China 2012). Similarly, the Hanns-Seidel-Foundation trains about 500 workers annually in its Shanghai Vocational Training Centre (BBZ) in collaboration with Chinese organizations. The Foundation was also a co-founder of the Chinese-German Professional Training College where bachelor and master degrees in engineering could be acquired (Interview G54). It further increased its involvement in vocational training activities in Shanghai in recent years and meanwhile also trains examiners and teachers for vocational training programs (Hanns-Seidel-Stiftung 2012).

The Chinese-German Academic Association (CDHK) at Tongji University in Shanghai also began to educate students in the 2000s in mechanical engineering, motor mechanics, economics and electrical engineering according to German curricula. Over time, the CDHK has strengthened its ties to German foundations that donate money to its programs. Meanwhile 25 German firms finance a total of 30 university teaching positions and provide scholarships for students or finance equipment for these programs. Among the active supporters are especially automotive firms, such as VW, SVW and some of their suppliers (CDHK 2012a, 2012b, Unister GmbH 2011). In order to spread key standards of the German production and innovation system through vocational schools, the German Association for Technical Cooperation (GIZ) also supports the education of teachers for vocational training at Tongji University. An advisory committee with representatives of German industrial firms supported the development of the curriculum, equipment and research themes. This engagement led to the establishment of the Sino-Chinese Institute for Vocational Training (CDIBB) at Tongji University. Its goals are to train technical specialists and managers in the industry and to lobby for a reform of the Chinese education and training system. The institute employs 30 highly-skilled teachers with comprehensive experience and in-depth knowledge about the differences between the German and Chinese training systems (CDIBB 2010).

Aside from the above, more examples exist. Although each case only provides a limited number of training spots/opportunities, they increasingly generate an emergent “institutional thickness” in the sense of Amin and Thrift (1995). What is still at an early stage thus far is, however, the systematic integration of Chinese partner firms and suppliers into these programs. Although

problems and misunderstandings, such as those reported above, still exist and challenge Chinese-German collaborations, the growth of such organizations will make it easier in the future to communicate required standards and practices to Chinese firms, provide an understanding of the differences in the national innovation system, and enable institutional adaptation and convergence within the value chain.

## **7. Summary**

This chapter has analyzed the difficulties in international cooperations between industrial firms from different national systems of production and innovation and from different institutional contexts (Depner and Bathelt 2005, 2006, 2011). It reports how German automobile suppliers encountered a new industrial environment in China, having to deal with partners whose behavioral orientation was based on different habits, institutions and production routines. As a consequence, coordination problems with Chinese suppliers and joint venture partners developed which, in part, resulted in open conflicts and failures. In the case of vertical cooperation, Chinese suppliers needed to adapt the requirements of German automobile producers. Rules and routines developed in Germany sometimes became a handicap, however. Lengthy and often unsuccessful processes of adaptation on the Chinese side caused German firms to encourage suppliers from Germany to establish plants in Shanghai, or to develop supplier relationships with existing foreign firms. Through this, first-tier and second-tier suppliers from Germany set up operations in China. Surprisingly, few independent Chinese firms were included in this focal network and, if so, primarily at the lower end of the production chain as suppliers of standardised components. In order to increase their share in the supplier network, we show that improvements of the available information as well as further training opportunities for employees need to be established. This could be achieved through intensified cooperation of German and Chinese suppliers with existing branches of German industry associations and related organizations in Shanghai.

At the first-tier level, most German firms pursued joint venture arrangements with Chinese partners that enabled ongoing technology transfer – even though this was not the primary intention. These suppliers usually developed joint ventures with SAIC subsidiaries. Particularly

in joint ventures with equal shares of German and Chinese firms, difficulties developed between the partners at the management level. The development of a coherent management system often created problems because the partners tried to impose their own strategies and rules. In many of the cases studied, this led to mistrust between the Chinese and German actors in the joint ventures. As a consequence, the orders and suggestions of German managers were sometimes ignored. The selection of staff members was, therefore, of prime importance. At the expatriate level, the firms were best equipped if they chose staff with previous experience abroad – able to adapt flexibly to different cultural norms. Chinese managers best became familiar with German norms and work methods if they were given the opportunity to work in the context of a plant in Germany.

In conclusion, this study has provided evidence of how the development of production and the organization of value chains by firms from different national contexts can be threatened as a consequence of different specializations, institutions and practices. Interaction in the context of the automobile industry in China was, at least in part, impeded by the agents' different expectations and their embeddedness in different social, economic and cultural systems. Although most firms eventually established permanent presence, efficient cooperation required that actors, who understand and respect the different contexts and are able to mediate between them, were employed in key positions. Such boundary spanners had the potential to develop transnational networks where the necessary processes of coordination were not inhibited by socio-institutional distance. From a relational perspective, it is key to recognize the instrumental role of inter-personal relations and their making in processes of inter-firm interaction within value chains and across the boundaries of specific national production and innovation systems (Bathelt 2006). This study also suggests that territorial connections and trans-territorial flows crucially depend upon the roles of certain individuals that operate as boundary spanners.

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## References

- AHK China (2012) *Vocational Training Mainland China*. Online. Available HTTP: <http://china.ahk.de/services/recruitment-training-vocational-training/voctrain/> (1 November 2012).
- Amin, A. and Thrift, N. (1995) ‘Living in the global’, in A. Amin and N. Thrift (eds) *Globalization, Institutions, and Regional Development in Europe*, 2nd edn., Oxford, New York: Oxford University Press, 1-22.
- Bartsch, B. (2010) ‘Chinesen fahren vor (Chinese drive up)’, *Frankfurter Rundschau*, April 24-25.
- Bathelt, H. (2006) ‘Geographies of production: growth regimes in spatial perspective 3 – toward a relational view of economic action and policy’, *Progress in Human Geography*, 38: 223-236.
- Boyer, R. (1998) ‘Hybridization and models of production: geography, history and theory’, in R. Boyer, E. Charron, U. Jürgens and S. Tolliday (eds) *Between Imitation and Innovation: The Transfer and Hybridization of Productive Models in the International Automobile Industry*, Oxford: Oxford University Press, 23-56.
- Bundesagentur für Außenwirtschaft (2006) *VR Chinas Kfz-Markt weiter auf Wachstumskurs (China’s Automobile Market Continues to Grow)*. Online. Available HTTP: <http://www.bfai.de/fdb-SE,MKT20060306105744,Google.html> (28 March 2006).
- CDHK – Chinesisch-Deutsches Hochschulkolleg an der Tongji Universität (2012a) *Wir über uns (We About Us)*. Online. Available HTTP: <http://cdhk.tongji.edu.cn/de/wirueberuns.php> (7 October 2012).

- CDHK – Chinesisch-Deutsches Hochschulkolleg an der Tongji-Universität (2012b) *Zwei neue Stiftungslehrstühle in der Fahrzeugtechnik: KSPG & Kirchhoff Automotive Group (Two New Endowed Chairs in Automotive Engineering: KSPG & Kirchhoff Automotive Group)*. Online. Available HTTP: [http://cdhk.tongji.edu.cn/de/aktuelles\\_archivdetail.php?year=2012&aktuellId=259](http://cdhk.tongji.edu.cn/de/aktuelles_archivdetail.php?year=2012&aktuellId=259) (1 November 2012).
- CDIBB – Chinesisch-Deutsches Institut für Berufsbildung der Tongji-Universität (2010) *Chinesisch-Deutsches Institut für Berufsbildung der Tongji-Universität (Sino-German Institute for Vocational Training at Tongji University)*. Online. Available HTTP: <http://cdibb.tongji.edu.cn/deu/infos/ibb.html> (30 October 2012).
- Coe, N.M. and Bunnell, T.G. (2003) ‘“Spatializing” knowledge communities: towards a conceptualisation of transnational innovation networks’, *Global Networks*, 3: 437-456.
- De Propris, L. and Driffield, N. (2006) ‘The importance of clusters for spillovers from foreign direct investment and technology sourcing’, *Cambridge Journal of Economics*, 30: 277-291.
- Denzau, A.T. and North, D.C. (1994) ‘Shared mental models: ideologies and institutions’, *Kyklos*, 47: 3-31.
- Depner, H. (2006) *Transnationale Direktinvestitionen und kulturelle Unterschiede: Lieferanten und Joint Ventures deutscher Automobilzulieferer in China (Transnational Direct Investments and Cultural Differences: Supplier Relationships and Joint Ventures of German Automobile Suppliers in China)*, Bielefeld: Transcript.
- Depner, H. (2010) ‘Zum Standortverhalten deutscher Unternehmen in China (About the location behavior of German firms in China)’, *RegioPol – Zeitschrift für Regionalwirtschaft*, 1/2010: 25-33.
- Depner, H. and Bathelt, H. (2005) ‘Exporting the German model: the establishment of a new automobile industry cluster in Shanghai, P.R. China’, *Economic Geography*, 81: 53-81.
- Depner, H. and Bathelt, H. (2006) ‘Interaktionen in interkulturellen Unternehmensbeziehungen – Horizontale und vertikale Vernetzungsoptionen deutscher Automobilzulieferer in China (Cross-cultural inter-firm interaction – horizontal and vertical networking options of German automobile suppliers in China)’, *Geographische Zeitschrift*, 94: 77-97.

- Depner, H. and Bathelt, H. (2011) *Co-operation, Power and Control: Inter-cultural Practices in Shanghai's Automobile Supplier Industry*, Mimeo, Toronto: University of Toronto.
- Depner, H. and Dewald, U. (2005) 'Deutsche Automobilzulieferer in China (German automobile suppliers in China)', *Zeitschrift für Wirtschaftsgeographie*, 49: 23-41.
- Dicken, P. (2005) *Tangled Webs: Transnational Production Networks and Regional Integration*, Spaces online 2005-04, Toronto, Heidelberg. Online. Available HTTP: <<http://www.space-online.com>> (15 May 2011).
- Dicken, P., Kelly, P.F., Olds, K. and Yeung, H.W.-C. (2001) 'Chains and networks, territories and scales: towards a relational framework for analysing the global economy', *Global Networks*, 1: 89-112.
- DiMaggio, P. (1997) 'Culture and cognition', *Annual Review of Sociology*, 23: 263-287.
- Edquist, C. and Johnson, B. (1997) 'Institutions and organizations in systems of innovation', in Edquist, C. (ed.) *Systems of Innovation: Technologies, Institutions and Organizations*, London: Pinter, 41-63.
- Fan, P. (2006) 'Catching up through developing innovation capability: evidence from China's telecom-equipment industry', *Technovation*, 26: 359-368.
- Gereffi, G., Humphrey, J. and Sturgeon, T. (2005) 'The governance of global value chains', *Review of International Political Economy*, 12: 78-104.
- Gertler, M.S. (2004) *Manufacturing Culture: The Institutional Geography of Industrial Practice*, Oxford, New York: Oxford University Press.
- Hanns-Seidel-Stiftung (2012) 'Prüferschulung am BBZ Shanghai (Inspector training at BBZ Shanghai)', *Koord-Blatt*, 5/2012: 11. Online. Available HTTP: <[http://www.hss.de/fileadmin/china/downloads/Hanns-Seidel-Stiftung\\_China\\_-\\_Koord-Blatt\\_Mai\\_2012.pdf](http://www.hss.de/fileadmin/china/downloads/Hanns-Seidel-Stiftung_China_-_Koord-Blatt_Mai_2012.pdf)> (30 October 2012).
- Hodgson, G.M. (2003) 'The hidden persuaders: institutions and individuals in economic theory', *Cambridge Journal of Economics*, 27: 159-175.
- Hoon-Halbauer, S.K. (1999) 'Managing relationships within Sino-foreign joint ventures', *Journal of World Business*, 34: 344-371.
- Hwang, K.-K. (1987) 'Face and favor: the Chinese power game', *American Journal of Sociology*, 92: 944-974.



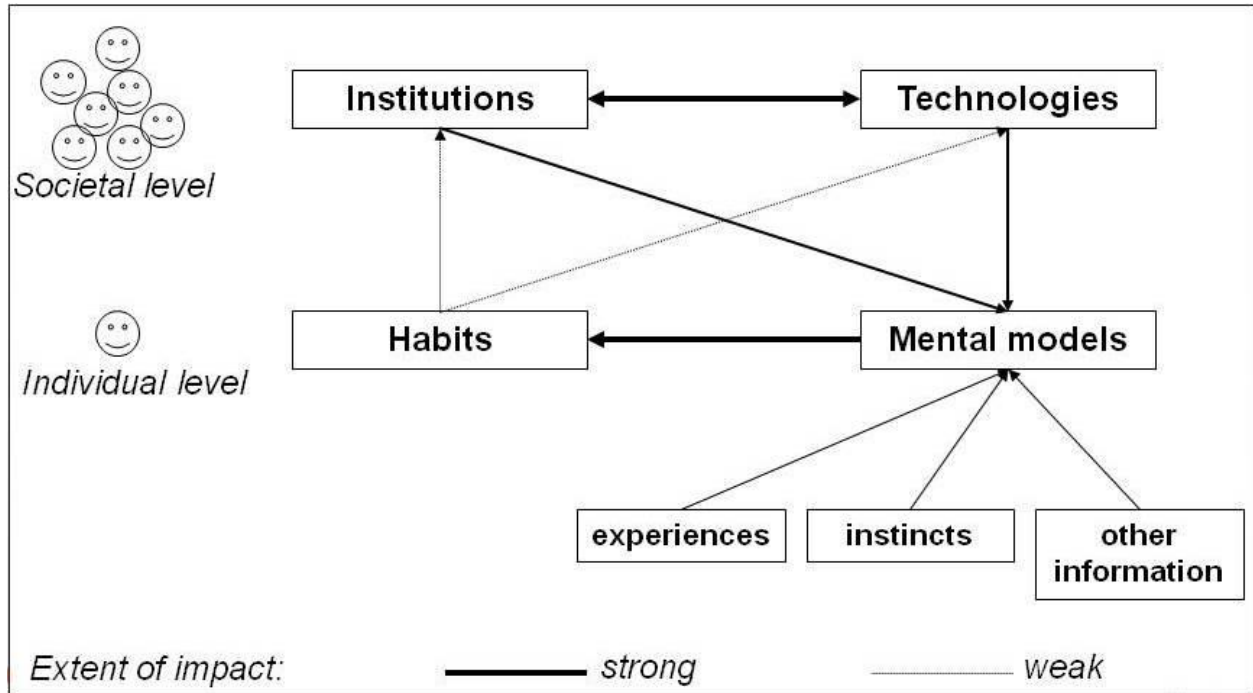
- IHK Hannover (2010) *AHK Shanghai und IHK Hannover erfolgreich mit deutscher Berufsausbildung in China: Erster Ausbildungsgang erhält Abschlusszeugnisse (AHK Shanghai and IHK Hannover Successful with German Vocational Training in China: First Cohort Graduates)*. Online. Available HTTP: <http://www.hannover.ihk.de/presse/archiv-pm/pressemeldungen-2010/ahkshanghai.html> (7 October 2012).
- Kim, J.Y. and Zhang, L.Y. (2008) 'Formation of foreign direct investment clustering: a new path to local economic development?', *Regional Studies*, 42: 265-280.
- Klaerding, C. (2011) *Transferring Inter-firm Management Practices to Shanghai – Specifying the Role of Culture in an Institutional Perspective*, paper presented at the Spaces of International Economy and Management [SIEM] Workshop on "What About Managerial Geography? Management Geography – A New Paradigm in Economic Geography?", Humboldt University, Berlin, February 14.
- Kutschker, M. and Schmid, S. (1997) 'We can make it: >Guanxi< oder: Die Bedeutung von Beziehungen in China (Guanxi or the importance of interpersonal relations in China)', in M. Kutschker (ed.) *Management in China. Die unternehmerischen Chancen nutzen (Management in China: Exploiting Entrepreneurial Options)*, Frankfurt/Main: Verlag Wirtschaftsbücher, 175-201.
- Lang, N.S. (1998) *Intercultural Management in China: Strategies of Sino-European and Sino-Japanese Joint Ventures*, Wiesbaden: Deutscher Universitäts-Verlag.
- Latour, B. (1986) 'The powers of association', in J. Law (ed.) *Power, Action, and Belief: A New Sociology of Knowledge*, London, Boston: Routledge, 264-280.
- Liu, W. and Dicken, P. (2006) 'Transnational corporations and "obligated embeddedness": foreign direct investment in China's automobile industry', *Environment and Planning A*, 38: 1229-1247.
- Lorenz, E. and Lundvall, B.-Å. (2006) *How Europe's Economies Learn: Coordinating Competing Models*, Oxford: Oxford University Press.
- Lundvall, B.-Å. (ed.) (1992) *National Systems of Innovation: Towards a Theory of Innovation and Interactive Learning*, London: Pinter.
- Lundvall, B.-Å. and Maskell, P. (2000) 'Nation states and economic development – from national systems of production to national systems of knowledge creation and learning',

- in G.L. Clark, M.P. Feldman and M.S. Gertler (eds) *The Oxford Handbook of Economic Geography*, Oxford: Oxford University Press, 353-372.
- Lundvall, B.-Å., Johnson, B., Andersen, E.S. and Dalum, B. (2002) 'National systems of production, innovation and competence building', *Research Policy*, 31: 213-231.
- Miao, C.-H., Wei, Y.-H.D. and Ma, H. (2007) 'Technological learning and innovation in China in the context of globalization', *Eurasian Geography and Economics*, 48: 1-20.
- Park, S.H. and Luo, Y. (2001) 'Guanxi and organizational dynamics: organizational networking in Chinese firms', *Strategic Management Journal*, 22: 455-477.
- Pearce, J.A. II and Robinson, R.B. jun. (2000) 'Cultivating guanxi as a foreign investor strategy', *Business Horizons*, 43: 31-38.
- QZ (2008) 'Starkes Netzwerk: Wie sich die deutsche Autoindustrie in China behaupten will (Strong network: How the German automobile industry aims to succeed in China)', *QZ*, 09/2008: 20-22. Online. Available HTTP: <[http://www.vda-qmc.de/fileadmin/redakteur/presse/Wie\\_sich\\_die\\_deutsche\\_Autoindustrie\\_in\\_China\\_behaupten\\_will.pdf](http://www.vda-qmc.de/fileadmin/redakteur/presse/Wie_sich_die_deutsche_Autoindustrie_in_China_behaupten_will.pdf)> (7 October 2012).
- Redding, S.G. (1993) *The Spirit of Chinese Capitalism*, Berlin, New York: de Gruyter.
- Setterfield, M. (1993) 'A model of institutional hysteresis', *Journal of Economic Issues*, 27: 755-774.
- Sit, V.F.S. and Liu, W. (2000) 'Restructuring and spatial change of China's auto industry under institutional reform and globalization', *Annals of the Association of American Geographers*, 90: 653-673.
- Spiegel Online* (2007) 'China plant mächtigen Autokonzern (China plans to establish mighty auto corporation)', *Spiegel Online*, July 30. Online. Available at HTTP: <<http://www.spiegel.de/wirtschaft/0,1518,497155,00.html>> (30 July 2007).
- Sun, Y. (2002) 'China's national innovation system in transition', *Eurasian Geography and Economics*, 43: 476-492.
- Sun, Y. and Wen, K. (2007) 'Uncertainties, imitating behaviors and foreign R&D locations: explaining the over-concentration of foreign R&D in Beijing and Shanghai within China', *Asia Pacific Business Review*, 13: 405-424.

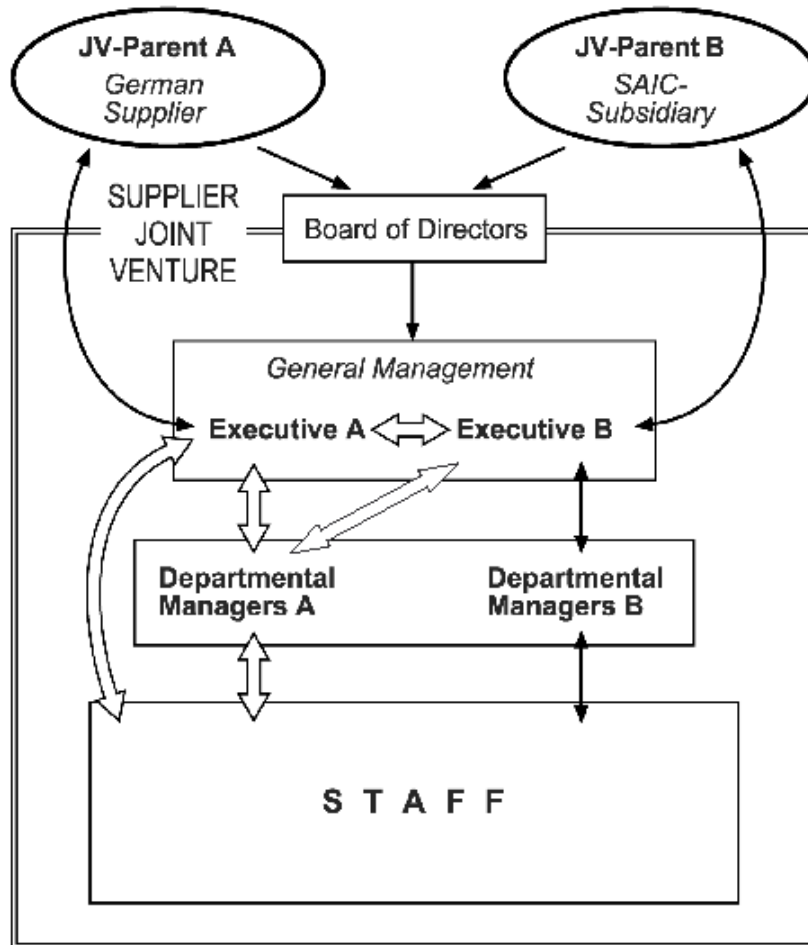
- Thun, E. (2004) 'Going local: foreign investment, local development and the Chinese auto sector', in J. Carillo, Y. Lung and R. van Tulder (eds) *Cars, Carriers of Regionalism?*, Basingstoke: Palgrave Macmillan, 233-246.
- Unister GmbH (2011) *Volkswagen und Tongji Universität Shanghai vereinbaren Stiftungsprofessur (Volkswagen and Tongji University Agree Upon Endowed Chair)*. Online. Available HTTP: <http://www.auto.de/magazin/showArticle/article/55779/Volkswagen-und-Tongji-Universitaet-Shanghai-vereinbaren-Stiftungsprofessur> (7 October 2012).
- VDA – Verband der Automobilindustrie (2011) *Geschäftsführer Bräunig: "Deutsche Zulieferer zeigen auf der Auto Shanghai ihre Innovationsstärke" (Director Bräunig: "German Suppliers Show their Innovation Leadership at Auto Shanghai")*. Online. Available HTTP: <http://www.vda.de/de/meldungen/news/20110419-1.html> (31 October 2012).
- Vwd: Asien (2004) 'VW-Partner SAIC will eigene Marke fertigen (VW partner SAIC wants to establish its own brand)', *Vwd: Asien*, 3/2004: 2.
- Wang, H. (2001) *Weak State, Strong Networks: The Institutional Dynamics of Foreign Direct Investment in China*, Oxford: Oxford University Press.
- Wang, J.-H. and Lee, C.-K. (2007) 'Global production networks and local institution building: the development of the information-technology industry in Suzhou, China', *Environment and Planning A*, 39: 1873-1888.
- Wang, M., Ren, R. and Yan, B. (2010) 'The analysis of auto industrial clusters competitiveness in China in the context of economic globalisation', *World Review of Science, Technology and Sustainable Development*, 8: 29-46.
- Wei, Y.-H.D. and Liefner, I. (2012) 'Globalization, industrial restructuring, and regional development in China', *Applied Geography*, 32: 102-105.
- Yeung, H.W.-C. (2009) 'Regional development and the competitive dynamics of global production networks: an East Asian perspective', *Regional Studies*, 43: 325-351.
- Zeng, G. (2008) *Past, Present and Future Development Trends of the Shanghai Automobile Industry Cluster*, paper presented at the 7th International Conference on "Industrial Cluster and Regional Development", Kaifeng, June 13-15.

- Zeng, G. and Bathelt, H. (2011) 'Divergent growth trajectories in China's chemical industry: the case of the newly developed industrial parks in Shanghai, Nanjing and Ningbo', *GeoJournal*, 76: 675-698.
- Zhao, Z. and Zhi, L. (2009) 'Global supply chain and the Chinese auto industry', *The Chinese Economy*, 42 (6): 27-44.

**Figure 1:** Institutions, technologies and habits (Source: own illustration)



**Figure 2:** Structure of joint venture operations in the VW-SAIC production chain, 2004 (Source: survey results)



**Table 1:** Classification of automobile suppliers according to purchasing characteristics, 2004  
(Source: survey results)

Joint venture group (number of firm cases)	Type of product	Type/degree of integration into the corporate network	Local content <sup>1)</sup>	Localization strategy	Preferred sub-suppliers
G1: Above-average local connections (3 cases)	Basic parts/components	Low integration; no expatriates	80-100 %	Limit reached	Local Chinese firms
G2: Foundries (3 cases)	Foundry products	Medium integration; many expatriates; vocational training	90-100 %	Determined by resource considerations	Chinese firms at a national level
G3: Localizing component producers (3 cases)	Relatively simple components	Medium integration; vocational training; supplies from other corporate plants	60-70 %	Goal of high localization	Primarily foreign suppliers
G4: System/module producers (4 cases)	Systems/modules	Medium to high integration; supplies from other corporate plants; embedded in international production networks	30-70 %	Limited localization	Foreign and state-owned firms
G5: Above-average international connections (3 cases)	Electronic/electrical components/systems	High integration; embedded in international production networks	1-30 %	Intensive localization to expensive	Imports; foreign firms

Note: <sup>1)</sup> Share of materials purchased in China

**Table 2:** Classification of joint venture (JV) operations according to German/Chinese capital shares, 2004 (Source: survey results)

Group (number of JV cases)	German/ Chinese capital shares	Chinese partner firms	Number/involve- ment of German expatriates	Number of employ- ees	German involvement in manage- ment
G(a): Majority share of Chinese owners (1 case)	36/64	Non-SAIC	Chinese manager	500	Control of Chinese manage- ment
G(b): SAIC-JVs with equal capital shares (7 cases)	50/50	SAIC subsidiary	2-14 expatriates	200-1000	Operational
G(c): Non-SAIC- JVs with small German capital majorities (2 cases)	51/49	Non-SAIC	Chinese manager with foreign experience	88-470	N/A
G(d): SAIC-JVs with dominant German capital shares (3 cases)	60/40	SAIC subsidiary	1-2 expatriates; Chinese manager with foreign experience	67-99	Commercial
G(e): Majority shares of German owner (2 cases)	> 75/< 25	Non-SAIC	2 expatriates	60-225	Commercial or complete control



**Table 3:** Quality of social relations of German expatriates with their Chinese partners, 2004  
(Source: survey results)

Expatriate (JV = joint venture )	Quality of social relations with				
	Personal assistants	Chinese general/deputy general manager (superior)	Chinese managers/ division head	Subordinate employees	Workers
Mr. K. (JV2)	++	++	+	+	N/A
Mr. N. (JV2)	++	+	+	+	N/A
Mr. F. (JV4)	N/A	N/A	++	+	+
Mr. P. (JV1)	-	--	--	-	O
Mr. H. (JV1)	--	-	-	-	-
Mr. M. (JV3)	-	--	--	-	--
Mr. G. (JV5)	N/A	--	N/A	N/A	-
Mr. T. (JV5)	-	--	N/A	-	N/A

Notes: (1) The evaluation scheme ranges from ‘++’ = very good (trustful, efficient) to ‘--’ very bad (distrustful, inefficient) social relationships.

(2) JV1 is a foundry, classified in joint venture group G2 in Table 1; JV2 and JV4 are localizing component producers (G3); and JV3 and JV5 are system/module producers (G4).