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Competencies in subsidiaries of multinational companies

The case of the automotive supply industry in Poland¹

Abstract: In order to better understand the competitiveness of companies and with this their surrounding regions, economic geographers focus on competencies in manufacturing companies. This paper discusses the major and minor driving forces, preconditions and constraints for transferring tasks from headquarters to the foreign plant. Subsidiaries of international automotive supply companies in Poland are used as case studies, offering insights into different types of competencies assigned from headquarters to the subsidiary. *Keywords:* multinational companies, subsidiaries, knowledge, competencies, value chains, automotive industry, Poland, Central Europe

Introduction

Competencies in manufacturing companies have long since been a focus of economic geographers wishing to obtain better insights into the competitiveness of companies and therefore the regions in which they are located. Competencies are especially relevant to the subsidiaries of multinational companies. Multinational companies have become key actors in the global economy, influencing various regions in different parts of the world. If headquarters delegate complex tasks to their subsidiaries, these plants are expected to have a more stable growth, often resulting in positive economic and social contributions to the region. This topic is one of the most exciting areas of research in recent debate on competencies, knowledge and learning, because it deals with the chances for upgrading² of subsidiaries in 'peripheries' of the world economy (see SCHMITZ 2004).

In general, competencies (or competences) encompass three interrelated aspects: the responsibility assigned to a particular actor (e.g. a subsidiary) by another actor (e.g. headquarters); knowledge as a resource base for action; and the capability (or ability, capacity, aptitude) to act. The latter refers to the skill required to interpret a situation in a specific context, translate knowledge into action and

adapt knowledge to the specific circumstances. Competencies are more than just the knowledge inherent in a company, broadly understood as a tacit or codifiable resource. Competencies also refer to what the company can do – and really does – with its knowledge (MORGAN 2004, 7).

This paper discusses the development of corporate competencies at plant level, mainly focusing on the first aspect, the tasks assigned by management to the subsidiary. Major and minor driving forces, preconditions as well as constraints that direct the increase of competencies in subsidiaries are the central topic of the article. We derive such driving forces from a review of relevant literature and discussing them in the context of our empirical case study, which are the subsidiaries of international automotive supply companies in Poland. Such insights are important for business economics because they offer a perspective on a specific regional example (subsidiaries in Poland) rather than maintaining a 'spaceless' view of enterprise organisations. They are also significant for economic geographers in that they provide a spatial example of competencies in global production networks (and thus a pattern of centre and periphery in a broader sense).

Importantly, we spotlight the competencies of entire subsidiaries rather than focusing on indi-

vidual processes of learning, as e.g. vocational studies and their application in economic geography do (see WINTER 2006, 2008). Our perspective does not deny the fact that in companies, competencies are dispersed across many individuals (PINCH et al. 2003, 377). We would argue, however, that such competencies are embedded within the company that holds them. This view is also typical for organisational sciences which discuss headquarters' mandate for subsidiaries (BIRKINSHAW/HOOD 1998).

Subsidiaries' competencies can include various elements. Common examples are research and development (R&D), competencies of the production process, or economic aspects such as the consolidation of returns or the competence to invest. In our contribution, we focus on engineering tasks related to R&D and complex tasks in production, assigned from headquarters to the subsidiary. This means we do not solely highlight R&D for product innovations. In our view, vital tasks essential for a subsidiary also include adaptation to client needs, testing pilot-run series and launch. Apart from product invention, important tasks comprise improvement of existing products, and engineering activities connected to machine, equipment or software design. Furthermore, we also include complex shop floor competencies. We take this perspective because of its regional implications: For regions, such competencies offer important employment opportunities for engineers and technicians, as well as providing jobs for a less qualified workforce.

In the following we first provide an overview of the general discussion on competencies in subsidiaries. We use a review of relevant literature to highlight general recent trends in research and to focus on central insights that can be drawn from the current academic debate. These trends are used to form the conceptual backbone of our study. We then use our empirical results to discuss central insights on major and minor driving forces, preconditions and constraints that act on the acquisition of competencies in subsidiaries. After some methodological comments we describe the case of automotive supply subsidiaries, starting with a perspective on Poland as a destination for investments, and then discuss our case studies that represent different types of subsidiaries, differentiated according to the major driving forces. The paper ends with a concluding discussion and some final remarks.

Competencies in subsidiaries

Literature review

Multinational companies first became key actors in the global economy in the 1960s, although international trading has flourished since the 16th century (WALLERSTEIN 1979). Some of the recent multinational companies operate transnationally based on multiple decision centres; they often exert considerable influence on local, regional or national governments and specific socio-economic regulations. Other multinational companies restrict their subsidiaries to only few countries and act internationally (MACKINNON/ CUMBERS 2007, 144). Since we encountered both in our case study, the following provides a more general discussion of multinational companies.

Generally, the discussion of positive and negative effects of subsidiaries on developing countries began in the 1970s. Modernisation theories emphasised the positive regional outcomes of foreign direct investments, while neomaxist approaches accentuated the dependency of regions on external decision centres. Later the discussion took another direction, partly on the basis of empirical studies. Publications increasingly began to discuss processes of learning in peripheral subsidiaries and the gradual acquisition of competencies. Since the 1990s, the debate has shifted again in that peripheries are no longer discussed in the framework of developing countries alone, but more generally in the context of non-core locations. This includes opportunities for peripheral branch plants in the core economies (see PHELPS 1993), as well as opportunities for Central European countries which joined the European Union in 2004 as peripheries of large existing markets (see STURGEON 1999). We agree with positions that argue that sometimes processes of learning can be identified in foreign subsidiaries. Our empirical study shows, however, that external forces such as market conditions cannot be ignored.

Investigating competencies in economic geography draws on research in various neighbouring disciplines. It is based on certain assumptions, or meta-theoretical postulations, concerning the behaviour of actors, their environment, top-down and bottom-up processes and involvement in global production networks. An important starting point is research on internationalisation theories in business economics (see e.g. BARTLETT/

GHOSHAL 1986, 1989; BIRKINSHAW/ HOOD 1998, 776; JOHANSON/ VAHLNE 1977). Frequently, internationalisation theories are rooted in behaviouristic concepts based on the idea of the satisfying actor behaving within the confines of bounded rationality. This leads to the general assumption that choices made by economic actors are guided by limits and evaluation and are not the result of the kind of determinism implied by rational choice. Whilst this forms a core assumption in our study, too, our analytical framework concentrates on the results – the transferred tasks –, rather than the process of assigning tasks, a process which springs from interaction, conflicts and visions. We will therefore not apply any cultural approaches in the sense that we refer to the mental constructs held by management (CALLON 2007; HOSKING/ MCNAMEE 2006) and the circuits of meaning in global production networks (HUDSON 2008). The broader application of such approaches to management decision-making still is a desideratum in economic geography.

Another line of enquiry pursued in economic geography is derived from institutional economics. This takes the idea that markets are not abstract as a starting point. Markets are formed by formal and informal institutions, which frame – and are shaped by – the behaviour of the actors (see MARTIN 2000). The environment of the company is observed less as a set of given factors, such as location factors, but more as a (variable) network of economic and social relationships in which the actors are embedded (see STRAUSS 2008, 142 f.). A number of studies focus on evolution (see LAMBOOY/ BOSCHMA 2001), following on from a long tradition of evolutionary models in economic sciences. Although our study highlights events that lead to the gaining of competencies, it does not consider any long-term processes, which renders the evolutionary perspective inappropriate to our context. We do however follow the assumption that markets are framed by institutions, which is a fruitful postulate because the markets in the automotive value chain are often not anonymous, but structured by specific clients and their particular requirements.

A number of authors in economic geography and business economics focus on the transfer of knowledge from the home country to the host (ALVSTAM/ IVARSSON 2004; HEWITT-DUN-

DAS et al. 2005). Other authors, such as the *Upsala School*, highlight the reverse flow from the host to the home, i.e. the interdependency of plant and surrounding region. This points out that favourable effects emerging from the host can ultimately extend to the whole corporation (ANDERSSON/ EJERMO 2005; DICKEN/ MALMBERG 2001; MALMBERG/ MASKELL 1999a,b; TEIRLINCK/ SPITHOVEN 2008). An implication in this context is that headquarters and subsidiaries follow similar rules and practices, combining locally different cultures (GERTLER 2003, 84).

Last not least, the debate on subsidiary upgrading is also related to investigations of global production networks, global value (or commodity) chains and global chain governance, which take a political economy perspective (see GEREFFI 1999; NADVI 2008; SCHMITZ 2004; STURGEON et al. 2008). Such studies have strongly influenced the discussion in economic geography (see COE et al. 2008; FUCHS 2003a; DICKEN 2003, 198 ff.; HESS/ YEUNG 2006; SMITH et al. 2002). This debate stresses the point that top management's assignment of tasks to subsidiaries represents a transfer of power from headquarters to the plant and thus changes the structures of governance in the multinational company. HOLM et al. (2003, 399) for example allude to a "progression towards more sophisticated and independent subsidiaries", whilst CUMBERS et al. (2003) speak of an "empowerment" of such plants. Some authors even expect a shift of control from headquarters to the subsidiaries of international companies (HOLM et al. 2003, 392). There is no doubt that a shift of responsibilities represents a transfer of some control and power. Yet in our case studies we found only very limited transfers of steering competencies from headquarters to the foreign subsidiaries. However, none of the above authors would go as far as expecting competencies to grow every time and everywhere. One instance of acquiring competencies does not necessarily lead on to another. Quite the opposite is true in that competencies can also be lost (AMIGHINI/ RABELOTTI 2006, 500, CARMONA/ GRÖNLUND 1998). Other subsidiaries remain simple branch plants (FROMHOLD-EISEBITH 2002). Changes of competencies therefore not invariably represent positive developments gaining competencies; instead, such changes must be considered processes with open end.

Conceptual framework

The deliberations outlined above make clear, that companies – even when tied into global production networks – have some elbow-room as far as decision-making is concerned. It is not the general strategy pursued by top management that plays a strong role. When it comes to the decentralisation of competencies, decisions taken by top management are more likely linked to specific needs that arise from the specific environment and interior situation of the company. The above studies (esp. BIRKINSHAW/ HOOD 1998; 776, HOLM et al. 2003, 392; SCHMITZ 2004) make clear that these conditions might include the markets resp. clients for intermediate goods, international sourcing on the highly skilled labour market and the organisation of production (reduction of transaction costs and co-ordination complexity), headquarters' general strategy, mode of production and micro-politics as well as the ability of the subsidiary to fulfil the required tasks and – last not least – the location of central R&D. Still, not much is known about the relative importance of such conditions and the automotive supply industry in Poland as a periphery of large existing markets in Western Europe.

Methodology

As headquarters' assignment of competencies to subsidiaries is a sensitive topic, our investigation had to be based on a qualitative approach. Qualitative methods are needed to uncover the reasons for delegating competencies: these are motives that cannot be discovered using standardised methods. Motives were not foreseeable *ex ante* and thus had to be revealed through an explorative approach. Analysis and interpretation of the interviews were based on qualitative content analysis (GLÄSER/ LAUDEL 1999; WINTER 2009). We focused on subsidiaries in Poland, thus following a worm's eye view. The empirical survey took place in 2005 and 2006 and was based on expert interviews with managers of 32 automotive plants, which represents about a fifth of all foreign automotive plants in Poland. The first survey in 2005 covered all locations where management had been willing to give insights into the plant. The underlying database was compiled from different sources such as chambers of commerce, automobile associations, public authorities etc. in Poland, Germany and the EU. The

database included 240 foreign automobile investors in Poland, with headquarters mainly in Europe, the USA and Japan. The interviews took place in 22 supplier plants, most of which represent first-tier suppliers, as well as in eight plants of four car manufacturers and in two independent R&D centers. A second survey in 2006 represented an in-depth exploration of some important and promising case studies. Additional interviews were conducted in other organisations, such as trade unions, chambers of commerce, associations and public organisations at different regional levels. The study covered the most important automobile regions in Poland, such as Wielkopolska (Poznań), Dolny Śląsk (Wrocław), Śląsk (Katowice/ Gliwice/ Tychy), Małopolska (Kraków) and Mazowsze (Warszawa).

With regards to the time frame, we can state that investments began in 1989 with the transformation of Poland into a market economy, and – accelerating rapidly – with Poland's integration into the EU and the run-up to full membership. Given that most of the plants need some time to consolidate their operational processes before subsidiary upgrading, the process of gaining additional competencies mostly happened between the early 2000s and our last sampling period in 2006. In our empirical investigation, we cannot eliminate a certain bias. Although we only identified one case where competencies were lost (see WINTER 2008), there is no reason to reject this developmental option out of hand. After all, we did focus on the Polish subsidiaries in a period when direct investment was high on account of political transformation and EU integration. Such expansion undoubtedly leads to gains in competencies and rarely to losses. Furthermore, we only had access to subsidiaries where the local plant managers were willing to give interviews. As they were generally presenting success stories, we could not get insights into conflicts of interests between headquarters and the plant as well as micro-politics in the subsidiary (DÖRRENBÄCHER/ GEPPERT 2005).

Empirical insights

Poland as destination for investments

Poland can be characterised as a periphery of large existing markets in Western Europe (STURGEON 1999). Since the early 1990s the Polish automotive industry has experienced

significant direct investment. Today it has emerged as a very important part of the Polish economy, comprising one fourth of all direct investments in manufacturing and about 110,000 jobs (PAIIIZ 2007) predominantly located in the west and southwest of Poland (Fig. 1). The conditions of the labour market are also attractive for investments in that the Polish workforce is experienced in manufacturing industries. Since the late 1990s, the share of academics in the group of 20-29 year olds has doubled and today approximates the EU average of 30 % (OECD 2007, 2). Especially the younger workforce speaks English or German, the latter being important for the numerous investors from Germany.

There are two sides to Poland's role as a periphery. On the one hand, the presence of a

skilled workforce allows for a fair degree of capital-intensive investments, which is unlikely to be lost with slight increases in labour costs. On the other hand, Poland is a prime example for external dependencies: green- and brownfield investments are made by foreign companies, and only very few plants owned by Polish managers have been able to link up to the international value chains. There are several new investments in Central Europe that only serve as final-assembly plants for components from Western Europe (MACKINNON/CUMBERS 2007, 158 ff.; PICKLES et al. 2006, 2309). However, Poland is a periphery situated in close proximity to large existing markets, which means that foreign direct investments have a chance for upgrading. Another reason is that investments in Poland play an active role in the European strategies pursued by the auto-

Fig. 1: Car manufacturers and automotive supply companies in Central Europe, 2007
(suppliers ranked in the top 100 international supply corporations)

Source: own figure

motive industries (see STURGEON 1999). On the whole, this complex situation prevents Poland from becoming a pure branch-plant economy or export platform.

Driving forces, preconditions and constraints for competencies in subsidiaries of automotive supply industry

The outlined debate has brought some important insights into upgrading and processes of learning. Nevertheless, little is known about driving forces, conditions and limits for subsidiaries acquiring competencies. Below we assess the central insights against our empirical findings, enabling us to identify major and minor driving forces, preconditions and constraints that apply in the acquisition of competencies in the context of the automotive industry (Fig. 2). The resulting framework is then used as a basis for our analysis of subsidiaries in Poland.

Major driving forces: As the debate highlights, one of the major driving forces is the markets for modules, parts and other intermediate goods – resp. the specific requirements of the clients – in global production networks and value chains of automobile industries: Such markets can lead to the increase in competencies of a subsidiary, for example if a local client is interested in the subsidiaries' products and asks for complex tasks to be resolved in the foreign subsidiary. If the client asks the

supplier to decentralise complex tasks and elaborated routines towards the local level, the supplier will receive the competencies, assigned from and allowed by headquarters (FUCHS 2005a, b). In automotive industries, with Original Equipment Manufacturer (as *Toyota, GM, Ford, Volkswagen*) and mega-suppliers (as *Valeo, Delphi, Bosch* and *TRW*) going global in the last decades, the markets in the value chains also globalised, and it is reasonable to expect at least partial internationalisation of competencies (see FREYSSINET/LUNG 2004, STURGEON/FLORIDA 2004, 74 ff).

Also the global labour markets play a role with regard to the transfer of competencies from headquarters to the subsidiaries: As far as acquiring competencies in a plant is concerned, international sourcing on the highly skilled labour market is a major driving force. Our study of the automotive supply industry shows that this phenomenon is at least relevant for specific cases of the relocation of R&D-centres (US automotive suppliers as *Delphi* and *TRW*). In such cases, flexible technicians and engineers in the foreign country are an important driving force for headquarters' delegation of competencies. Yet, even if in literature the influence of the local labour market on subsidiary competencies is frequently mentioned as important (see ANDERSSON/EJERMO 2005; MALMBERG/MASKELL 1999a; TEIRLINCK/SPITHOVEN 2008) – and without doubt plays a strong role in local networks of small and young companies in high-tech regions –, especially large multinational automotive companies usually create competencies internally, resorting for example to technical training, organisational exercises or transfer of personnel from headquarters to the subsidiaries and vice versa.

Fig. 2: Aspects influencing competencies in foreign subsidiaries of automotive supply industry

Source: own figure

Last not least, the organisation itself plays a role (see AMIN/ COHENDET 2004): Top management assigns task to the subsidiary because of reasons inherent to the organisation. There can be specific cases of reducing transaction costs and improving co-ordination between headquarters and subsidiary, pragmatic solutions against costs of over-centralisation. As our study shows, the reduction of transaction between headquarters and the foreign subsidiary is the motive behind a fairly broad increase of competencies at the local level. There are some rigid requirements which influence the acquisition of additional competencies: A branch plant producing only a particular, sim-

ple product has little chance of gaining competencies, whereas an integrated production plant, possibly with some R&D-functions, and manufacture of complex products, is well placed for obtaining more competencies.

Minor driving forces: Some of the driving forces labelled major in the literature only play a subordinate role in our study; we therefore refer to them as minor. First is the role of the general management strategy. Willingness to change and support from top management are essential for any change to take place. However, when looking more closely and asking what influences are really relevant, the general management strategy (understood here as overall guiding principles and management's practices of acting) emerges as a minor influence – or at least a driving force which is vague and difficult to identify. The tendency of US-suppliers *Delphi* and *TRW*, pursuing a general strategy of R&D-decentralisation at a global level is typical for large US automotive suppliers, but less so for large European automotive suppliers which do not span the globe with R&D-centres. Another frequently mentioned driving force is a strategy pursued by headquarters to increase competition within the internal markets, hoping that competition at plant level will improve the performance and the output of the plants (PHELPS/ FULLER 2000, 239). We found evidence of this strategy in some of the large supplier firms (FUCHS 2005b). Yet, this general management strategy is somewhat buried under the major driving forces. Turning lastly to the influence of the institutional setting of the home country on the general management strategy, as evident through co-determination, we only found *Volkswagen* as a clear example of this. *Volkswagen* exported the model of German co-determination to the *Škoda* company in the Czech Republic, but we hardly found any influence of co-determination on the gaining of competencies in similarly co-determined automotive supply companies, for instance *Bosch*.

Although they represent an important factor at a macro level, the general modes of production only represent a minor driving force at our micro level. Local subsidiary upgrading often is explained by referring to the debate about the varieties of capitalism and the ideal types of tayloristic and post-tayloristic production. Tayloristic production, starting in the early 20th century in the manufacturing industries, has always been characterised by central manage-

ment control. Only labour-intensive, less knowledge-intensive steps of the production process were decentralised to peripheral plants. Over the last three decades, such patterns of international division of competencies have shown a tendency to change towards flexible production (PIORE/ SABEL 1984) with complex R&D consisting of numerous feedback loops (CASSON et al. 1992). As an overall trend flexible production with higher competencies seems to be a positive assessment for top management and local management, which could support managements' desire to realise such production concepts in their plants, too. However, in our empirical study this issue is hidden behind the major driving forces.

Micro-politics play a minor role, especially because of the lack of trade unions as potential opponents against management or partners of management. We found some processes of upgrading resulting from micro-politics in an Original Equipment Manufacturer, *Volkswagen Poznań*, but none in the automotive supply industry. In the case of *Volkswagen*, the Polish subsidiary acquired additional manufacturing and organisational competencies in several fields during the transition process from a CKD (completely-knocked-down)-assembly plant to a competitive firm with extensive vertical integration. Such processes not only resulted from the management strategy, but were also discussed within the *European Works Council*. In this committee, the works councils and trade unions of the different European VW-plants cooperate and look for win-win-situations in issues such as capacity utilisation and competencies of the different plants (WINTER 2008, 118).

Preconditions: Competencies do not only include the assignment of responsibilities but also the ability of the subsidiary to fulfil the tasks. A necessary precondition is the ability of the foreign subsidiary to pick up on headquarters' requests. The subsidiary itself needs to meet some fundamental requirements such as technological, organisational and personal resources as well as the necessary routines (see BIRKINSHAW/ HOOD 1998, 782). Furthermore, local management has to be highly motivated to improve engineering and production. Some local managers also actively propose concepts for gaining local competencies, and – after bargaining with headquarters – they e.g. occasionally achieve new products, novel techno-

logical procedures, further sophisticated tasks or more training for the employees. Two of our case studies prove such engagement on the local level.

Constraint: We only found a single but powerful constraint to delegating competencies into foreign subsidiaries. It stems from the tendency of car manufacturers to keep strategic R&D in or near headquarters, which are located in places such as Toyota/ Aichi (Japan), Detroit (USA), Wolfsburg (Germany). Component supply companies are thus forced to keep their R&D near these same headquarters locations because car manufacturers expect short pathways of transactions and face-to-face contact. We can therefore state that hierarchical concentration of R&D competencies in client corporate centres frequently prevents decentralisation of competencies in the supply company.

Typology: Major driving forces for competencies in subsidiaries

Based on the above we provide three examples for the major driving forces (importance of the market, international sourcing in the highly skilled labour market, and transaction and co-ordination between headquarters and subsidiary). Our examples represent a number of types which we encountered in our survey. We speak of types (or kinds, forms) in preference

to stages or steps because processes are open (Fig. 3). Importantly, our typology is not representative but an attempt to organise our empirical findings based on the 32 case studies. As shown by our first example there are cases in which client needs lead to new competencies in a subsidiary. The integrated production plant is a common type, representing a third of all subsidiaries surveyed, which is successful in moving towards more competencies. Another type, found in a fifth of the cases, is the integrated production plant with some R&D. A different type of the spectrum is a rare and specific case: the R&D center which does not have any manufacturing. However, a number of plants, about a third of all cases, still produce in a niche with low competencies. These branch plants are often located in automotive supplier parks.

The importance of the market: Bosch. Our first example of subsidiaries gains competencies through co-operation with the local client. Usually, this is an integrated production plant with a number of production stages. A window of opportunity can open up as soon as the client has specific requirements. An illustrative example is the German mega-supplier *Bosch*; the subsidiary of our case study is located in Mirków, Poland. Although strategic R&D is located at the *Bosch* R&D centres in Germany,

Fig. 3: Typology of foreign subsidiaries, depending on the competencies in the 32 case studies

	R&D				Type 4
	Complex manufacturing		Type 2	Type 3	
	Simple assembly	Type 1			
		Branch plant	Integrated production plant	Integrated production plant with some R&D	R&D center without manufacturing
		Type 1	Type 2	Type 3	Type 4
Influence of the subsidiary on headquarters decisions	no	limited	limited	limited	
Influence of the subsidiary on the markets/clients	no	limited	limited	limited	
Variety of clients	low	high	high	high	
Variety of products	low	Variants and different products	Variants and different products	high	
Know-how intensity of product and production process	low	limited	high	high	
Technical-organisational competencies	some	high	high	very high	
Steering competencies	low	limited	limited	limited	
R&D competencies	no	limited	high	high	

Source: own figure

France and Spain and conducted in close co-operation with the car manufacturers, there was an instance when the subsidiary co-developed a complex application of a braking system for a *Fiat* relaunch product: In 2003, before the *Panda* model came on the market, *Bosch* German headquarters gave *Bosch Poland* the task to work closely with *Fiat Auto Poland* and adapt an existing *Bosch* braking system to the new *Fiat* car model. Thus, the Polish subsidiary gained access to knowledge-intensive application engineering. In addition, *Bosch* gained experiences in project management and co-operation with local customers. Whether this tendency will lead to similar projects in future remains to be seen; yet, for *Bosch Poland* it was an important event to acquire more responsibilities – an occasion for gaining competencies at the local level, against the strong constraint of central R&D in the core economies.

The importance of international sourcing on skilled labour markets: Delphi. The best example for the importance of international sourcing on skilled labour markets is *Delphi*, a mega-supplier with a variety of clients spread over the world. *Delphi* is a company primarily motivated by cheap labour for R&D and by the increase in flexibility that can be obtained by doing engineering around the globe in different time zones. The R&D center in Cracow was established in 2000 and is now one of about thirty technical centres run by *Delphi* all over the world. Together with other technical centers and production plants, the centre presently supplies the large car manufacturers in Europe. Initially, the technical centre started out by doing R&D for shock absorbers. Later, it was able to acquire more competencies by increasing the range of products it designs. More additional competencies started off with software design for control units. Today, 600 engineers, technicians and other employees work in the technical center (see WINTER 2008). Yet, *Delphi* is exceptional in that the company strategy so strongly focuses on labour costs. This is a general *Delphi* policy which is also found in the periphery of North America, e.g. in Mexico (FUCHS 2003b). Especially the European supply companies tend keep their strategic R&D competencies in the key automotive regions.

The importance of transaction and co-ordination between headquarters and subsidiary:

Kirchhoff. Sometimes, the reduction of transaction and organisational complexity between headquarters and the foreign subsidiary leads to the type of the integrated production plant, sometimes also to the integrated production plant with some R&D. In the case study of *Kirchhoff Polska*, located in Mielec with headquarters in Germany, the main intent is to cut back on transportation: The plant is a supplier for body structure modules as well as chassis and power train components. Local management instigated an upgrading process by establishing a tool design unit. Such creation of applied R&D for maintenance is efficient because of the particular type of production, which relies on specific tools and pressing. The (rather large) parts for pressing differ from one customer order to the next, and each production requires specific pressing moulds, which are usually of significant size and weight. Transporting them to German headquarters and back would prove inefficient, so there is good reason for locating tool design and production at the local plant. Maintenance in this plant not only implies the repair of broken parts, but also the design and production of new tools – in other words: process engineering (see FUCHS 2005b). Such practical solutions, improving local competencies, are thus strongly intertwined with the tangible-material production process.

Discussion: The empirical examples have shown that companies have some space for decision-making. However, it is not the universal strategy pursued by top management that plays a decisive role. Decisions on the decentralisation of competencies are more likely linked to requirements developing from the company environment and interior situation. An integrated production plant, possibly with some applied R&D-functions, and manufacture of complex products for several clients, is well placed for obtaining more competencies. In contrast, a branch plant which produces only a specific, simple product for a single client has little chance of gaining competencies. Market requirements, highly skilled labour needs and specific needs related to the organisation of production can sometimes overcome hard limits to the transfer of competencies. Hard limits are imposed by the location of central R&D near headquarters in the core economies.

Generally, the study leads us to conclude that local empowerment of a plant only implies

limited and restricted increase in control and does not represent a significant shift of steering competencies within the company. Even with our broad definition of competencies, going far beyond only R&D, there is still a number of subsidiaries which produce in a niche with low competencies. The other cases do show an increase of competencies; however, the cases are often unique and do not necessarily lead to the next stage of acquiring yet more competencies. However, we should not underestimate competencies once gained in general: Successful problem solving at the local plant level can lead to increases of further competencies in a subsidiary (MEYER 1992).

Final remarks

Even in this rather sceptical view of subsidiaries' acquisition of competencies, it should be noted that simply by choosing the automotive industries, a fairly qualified range of cases was selected, with good chances for upgrading compared to other sectors of manufacturing. The automotive supply industry is oriented towards world markets, which requires it to meet high quality standards. Thus, in general, the automotive industry is an example for high demands as far as competencies are concerned. For economic geography, the question of regional differences remains an important one. Is Poland different to Mexico or other peripheries of large existing markets? The *maquiladora* in Mexico often is discussed as a platform for export, focusing on exploitation as well as on (vulnerable) economic success and limited chances for upgrading. Indeed, with regard to automotive industries, we find patterns quite similar to Poland (FUCHS 2003b). The differences to other countries of Central Europe also seem to be small (MACK-INNON/ CUMBERS 2007, 158 ff.). Thus, the general verdict on competencies transferred from headquarters to subsidiaries in peripheries of large existing markets is neither pessimistic nor optimistic. Whilst opportunities for gaining competencies do exist, these are restricted to specific conditions such as client requirements, the demand and presence of an educated workforce, and organisational requirements. Also, they do not embrace strategic core R&D nor any noteworthy steering competencies. In any case, we observe that simplistic explanations surrounding competencies in peripheries do not fit.

Notes

- 1 We thank the *German Research Foundation* for the opportunity to deal with the topic of competencies in the research project "Learning in plants of foreign direct investments: the example of the automobile industry in Poland". We also thank *Kira Gee* for linguistic editing.
- 2 We use the notion "upgrading" in the wider sense of improvement by gaining competencies. We do not refer to the categories of product, process, functional and inter-sectoral upgrading (SCHMITZ 2004), which do not match our understanding of competencies in this paper.

References

- ALVSTAM, C.-G./ IVARSSON, I. (2004): International technology transfer to local suppliers by Volvo trucks in India. In: *Tijdschrift voor Economische en Sociale Geografie*, (95)1, 27-43.
- AMIGHINI, A./ RABELLOTTI, R. (2006): How do Italian footwear industrial districts face globalization? In: *European Planning Studies*, 14, 485-502.
- AMIN, A., COHENDET, P. (2004): *Architectures of knowledge: firms, capabilities, and communities*. Oxford.
- ANDERSSON, M./ EJERMO, O. (2005): How does the accessibility to knowledge sources affect the innovativeness of corporations? Evidence from Sweden. In: *Annals of Regional Science*, (39)4, 741-765.
- BARTLETT, C. A./ GHOSHAL, S. (1986): Tap your subsidiaries for global reach. In: *Harvard Business Review*, 64, 87-94.
- BARTLETT, C. A./ GHOSHAL, S. (1989): *Managing across borders: The transnational solution*. Boston.
- BIRKINSHAW, J./ HOOD, N. (1998): Multinational subsidiary evolution: Capability and charter change in foreign-owned subsidiary companies. In: *Academy of Management Review*, 4, 773-795.
- CALLON, M./ MUNIESA, F./ MILLO, Y. (2007): An introduction to market devices. In: Callon, M./ Muniesa, F./ Millo, Y. (Eds.): *Market devices*. Oxford, 1-12.
- CARMONA, S./ GRÖNLUND, A. (1998): Learning from forgetting: An experiential study of two European car manufacturers. In: *Management Learning*, 29, 21-38.
- CASSON, M./ PEARCE, R. D./ SINGH, S. (1992): Business culture and international technology: Research managers' perceptions of recent changes in corporate R&D. In: Granstrand, O./ Håkanson, L./ Sjölander, S. (Eds.): *Technology management and international business*. Chichester, 117-135.
- COE, N. M./ DICKEN, P./ HESS, M. (2008): Global production networks: realizing the potential. In: *Journal of Economic Geography*, 8, 271-295.
- CUMBERS, A./ MAC KINNON, D./ MCMASTER, R. (2003): Institutions, power and space. In: *European Urban and Regional Studies*, 10, 325-342.

- DICKEN, P./ MALMBERG, A. (2001): Firms in territories: A relational perspective. In: *Economic Geography*, (77)4, 345-363.
- DICKEN, P. (2003): *Global shift: Reshaping the global economic map in the 21st century*. New York, London. (4th Edition).
- DÖRRENBÄCHER, C./ GEPPERT, M. (2005): Micro-political aspects of mandate development and learning in local subsidiaries of multinational corporations. Berlin. (WZB Discussion Paper III 202).
- FREYSSINET, M./ LUNG, Y. (2004): Car firms' strategies and practices in Europe. In: Faust, M./ Voskamp, U./ Wittke, V. (Eds.): *European industrial restructuring in a global economy*. Göttingen, 85-103.
- FROMHOLD-EISEBITH, M. (2002): Regional cycles of learning: foreign multinationals as agents of technological upgrading in less developed countries. In: *Environment and Planning A*, 34, 2155-2173.
- FUCHS, M. (2003a): Governance in transnationalen Unternehmen und Wertschöpfungsketten. [Governance in transnational corporations and value chains] In: *Zeitschrift für Wirtschaftsgeographie*, (47)2, 177-187.
- FUCHS, M. (2003b): "Learning" in automobile components supply companies: The Maquiladora of Ciudad Juárez, Mexico. In: Lo, V./ Schamp, E. W. (Eds.): *Knowledge, learning, and regional development*. Münster, 107-130.
- FUCHS, M. (2005a): Internal networking in the globalising firm: The case of R&D allocation in German automobile component supply companies. In: Alvstam, C./ Schamp, E. W. (Eds.): *Linking industries across the world. Processes of global networking*. Aldershot, 127-146.
- FUCHS, M. (2005b): Borders and the internationalization of knowledge: Two examples from the automobile components supply sector in Poland. In: van VILSTEREN, G./ WEVER, E. (Eds.): *Borders and economic behaviour in Europe*. Assen, 43-61.
- GEREFFI, G. (1999): International trade and industrial upgrading in the apparel commodity chain. In: *Journal of International Economics*, 48, 37-70.
- GERTLER, M. S. (2003): Local knowledge: tacit knowledge and the economic geography of context, or the undefinable tacitness of being (there). In: *Journal of Economic Geography*, 3, 75-99.
- GLÄSER, J./ LAUDEL, G. (1999): Theoriegeleitete Textanalyse? Das Potential einer variablenorientierten qualitativen Inhaltsanalyse [Theory-guided analysis of texts? The potential of a variable-oriented Qualitative Content Analysis]. Berlin.
- HESS, M./ YEUNG, H. (2006): Whither global production networks in economic geography? In: *Environment and Planning A*, 38, 1193-1204.
- HEWITT-DUNDAS, N./ ANDRÉOSSO-O'CALLAGHAN, B./ CRONE, M./ ROPER, S. (2005): Knowledge transfers from multinational plants in Ireland. In: *European Urban and Regional Studies*, 1, 23-43.
- HOLM, U./ MALMBERG, A./ SÖLVELL, Ö. (2003): Subsidiary impact on host-country economies: The case of foreign-owned subsidiaries attracting investment into Sweden. In: *Journal of Economic Geography*, 3, 389-408.
- HOSKING, D. M./ MCNAMEE, S. (eds.) (2006): *The social construction of organization*. Trondheim.
- HUDSON, R. (2008): Cultural political economy meets global production networks: A productive meeting? In: *Journal of Economic Geography*, 8, 421-440.
- JOHANSON, J./ VAHLNE, J. E. (1977): The internationalization process of the firm: A model of knowledge development and increasing foreign market commitments. In: *Journal of International Business Studies*, 8, 23-32.
- LAMBOOY, J. G./ BOSCHMA, R. (2001): Evolutionary economics and regional policy. In: *The Annals of Regional Science*, (35)1, 113-131.
- MARTIN, R. (2000): Institutional approaches in economic geography. In: Sheppard, E./ Barnes, T. J. (Eds.): *A Companion to Economic Geography*. Oxford, 77-94.
- MEYER, A. de (1992): Management of international R&D operations. In: Granstrand, O./ Håkanson, L./ Sjölander, S. (Eds.): *Technology management and international business*. Chichester, 162-179.
- MACKINNON, D./ CUMBERS, A. (2007): An introduction to economic geography. Globalization, uneven development and place. Harlow.
- MALMBERG, A./ MASKELL, P. (1999a): Localized learning and regional development. In: *European Urban and Regional Studies*, 1, 5-8.
- MALMBERG, A./ MASKELL, P. (1999b): The competitiveness of firms and regions. 'Ubiquitification' and the importance of localized learning. In: *European Urban and Regional Studies*, 1, 9-25.
- MORGAN, K. (2004): The exaggerated death of geography: Learning, proximity and territorial innovation systems. In: *Journal of Economic Geography*, 1, 3-21.
- NADVI, K. (2008): Global standards, global governance and the organization of global value chains. In: *Journal of Economic Geography*, 8, 323-343.
- OECD (2007): *Education at a glance: OECD indicators - Executive summary*. Paris.
- PAIIZ (*Polish Information and Foreign Investment Agency*)(2007): *Automotive and transport*. Warszawa.
- PHELPS, N. A. (1993): Branch plants and the evolving spatial division of labour: A study of material linkage change in the Northern Region of England. In: *Regional Studies*, (27)2, 87-101.
- PHELPS, N. A./ FULLER, C. (2000): Multinationals, intra-corporate competition, and regional development. In: *Economic Geography*, 76, 224-243.
- PICKLES, J./ SMITH, A./ BUCĚK, M./ ROUKOVA, P./ BEGG, R. (2006): Upgrading, changing competitive pressures, and diverse practices in East and Central Europe apparel industry. In: *Environment and Planning A*, 38, 2305-2324.
- PINCH, S./ HENRY, N./ JENKINS, M./ TALLMAN, S. (2003): From 'industrial districts' to 'knowledge clusters'. In: *Journal of Economic Geography*, 4, 373-388.
- PIORE, M./ SABEL, C. F. (1984): *The second industrial divide*. New York.
- SCHMITZ, H. (2004): Globalized localities: Introduction. In: Schmitz, H. (Ed.): *Local enterprises in the global economy: Issues of governance and upgrading*. Cheltenham 1-19.

- SMITH, A./ RAINNIE, A./ DUNFORD, M./ HARDY, J./ HUDSON, R./ SADLER, D. (2002): Networks of value, commodities and regions. In: *Progress in Human Geography*, 1, 41-63.
- STRAUSS, K. (2008): Re-engaging with rationality in economic geography: Behavioural approaches and the importance of context in decision-making. In: *Journal of Economic Geography*, 2, 137-156
- STURGEON, T. (1999): *Globalization and jobs in the automotive industry: A locational typology*. Cambridge.
- STURGEON, T./ FLORIDA, R. L. (2004): Globalization, deverticalization, and employment in the motor vehicle industry. In: Kenney, M./ Florida, R. L. (Eds.): *Locating global advantage*. Stanford, 52-81.
- STURGEON, T./ VAN BIESEBROECK, J./ GEREFFI, G. (2008): Value chains, networks and clusters: Reframing the global automotive industry. In: *Journal of Economic Geography*, 8, 297-321.
- TEIRLINCK, P./SPITHOVEN, A. (2008): The spatial organization of innovation: Open innovation, external knowledge relations and urban structure. In: *Regional Studies*, (42)5, 689-704.
- WALLERSTEIN, I. (1979): *The capitalist world-economy*. Cambridge.
- WINTER, J. (2006): Kompetenzerwerb in der Automobilindustrie. Das Beispiel Volkswagen Poznań (Polen). [Acquisition of competencies in automotive industries. The example of Volkswagen Poznań (Poland)]. In: *Geographische Rundschau*, (58)4, 46-52.
- WINTER, J. (2008): Spatial division of competencies and local upgrading in the automotive industry. In: Tamasy, C./ Taylor, M. (Eds.): *Globalising worlds and new economic configurations*. Aldershot, 113-124.
- WINTER, J. (2009): Zwischen Hierarchie und Heterarchie. Kompetenzveränderungen in Tochterbetrieben internationaler Automobilunternehmen am Standort Polen. [Between hierarchy and heterarchy. Changing competencies in subsidiaries of international automotive companies in Poland]. Münster.