

RECENT FINDINGS ON ORGANISATIONAL CHANGES IN GERMAN CAPITAL GOODS PRODUCING INDUSTRY

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Abstract

This paper presents two basic approaches of generating innovation and improved business performance (so called "low road" and "high road" approaches) and describes organisational requirements which are likely when these approaches were applied. Based on these ideal types, empirical data is provided on recent changes of organisational structures and the use of human resources from two representative surveys in Germany. The findings indicate that there is only a limited range of organisational changes in the German industry.

Keywords: "high road", "low road", decentralisation, organisational change

Introduction

The 1990ies have been a decade of confusion and "sloganeering" in German industry. While there was a broad wave of publications and debates on organisational change and its effects on productivity and economic success, little empirical information was gathered about the ongoing changes in industry. In order to gain more insight in the real dynamics and the use of advanced forms of work design, we have been carrying out, in a number of projects, several case studies as well as analyses based on representative surveys. Earlier survey studies (Kleinschmitt & Pekruhl, 1994; Nordhause-Janz & Pekruhl, 2001) demonstrated that despite the publicity of group work and "lean production" (Womack et al., 1990) in these years, only few companies introduced group work in Germany. On the other hand, the positive impact of group work and decentralisation on productivity and flexibility was widely accepted. In order to solve this contradiction, we extended the focus of our research in order to gather more information on the conditions and restrictions of the organisational change processes (Brödner & Kötter, 1999). Several case studies (Brödner et al., 1998) indicated that there is a set of organisational aspects contributing to the economic success. Based on these studies, we can discriminate two types of entrepreneurial development and innovation approaches. The term "approach" in this sense is not used as a prescriptive or intentional category. We use it as an analytic notion to describe organisational behaviour. Even if there are affinities to Porter's strategy types of cost reduction and differentiation (Porter, 1985/1999), we primarily focus on the organisational impact and the dynamics of company structures, while Porter emphasised marketing and market perspectives. Organisational structures are not in his primary interest (Porter 1985/1999, p.47 and p.522).

The approaches which we discriminated can best be profiled with respect to the definition of productivity as the relation of the value added and the expenditure. In principle, the increase of productivity can be influenced by applying measures to extend the value added on the one hand and measures to reduce costs on the other. The companies following a "low road" approach (Brödner et al., 1998) primarily aim at reducing the expenditure. For maintaining competitiveness, necessary effects in cost cutting are being produced by downsizing or outsourcing. The "low road" is characterised by companies' efforts to primarily reduce staff and wage costs.

In contrast, a few companies follow a “high road” approach (Brödner et al., 1998). They primarily focus on the mobilisation and development of human potential and competencies. They deliberately use them for exploring new business opportunities, without neglecting process innovations to reduce efforts, though. These companies tend to motivate and keep their employees tied to them because creativity and knowledge are a core resource for economic success.

Before we describe our attempts to analyse the dissemination of both approaches in German capital goods industry in a first step, we will first highlight both strategies and their implications for the organisation of work and company structure. With respect to work organisation, staff development, co-operation along the value chain, and information technology (IT) infrastructure, we will emphasise the differences between both types in the following section (cf. Brödner et al., 1998). These differences indicate whether companies follow the “high” or the “low road” approach. It is evident that these ideal types do not exist in pure form in the real world environment. Accordingly, it is useful to interpret these types as being the extreme values of a continuum of viable organisational solutions. Furthermore, it is quite likely that companies use selected organisational elements while it is quite unlikely that a company would use all the elements mentioned. After that, we will present findings from a survey which reveals that there actually was little dynamics on the shop floor level. But there are some remarkable changes in company structures.

The Low Road Approach

The “low road” approach is characterised by fostering organisational changes towards productivity increase and cost reduction at the same time. It is primarily directed towards success in cost competition with less emphasis on an extension of markets by new products and services. Accordingly, the its basic characteristic is the paramount focus on cost reduction. The objective is to defend or to extend existing market positions. Opportunities for expanding traditional business areas and value creation through product innovation are rarely taken into account.

With respect to *work organisation* and *staff development*, process-oriented forms of work organisation along the value chain (Porter, 1985/1999) as well as rather heteronomous forms of work are in the focus of management since they can contribute to cost cutting. In this way, the various operations of division of labour are recombined in “business processes” (Hammer & Champy, 1993) in order to accelerate the generation of products or services. The efforts in process innovation are directed towards exhausting the potential of rationalising transactions within and between companies. Work design thus is mostly limited to work enlargement without widening the scope of action e.g. by integration of planning tasks. Separate planning units for implementing process innovations still remain.

Concerning human resource aspects, management concentrates on limited process-specific qualifications or competencies to overcome bottle necks. Since management’s main focus lies on staff reduction, there are few incentives for employees to develop personal initiative and commitment for process innovation. For the same reason, opportunities for increasing productivity through enriched knowledge are rarely seen.

In this approach, *co-operative relationships* are also primarily directed towards most efficient supply chain management. If the main emphasis is cost reduction, an outsourcing of all activities not belonging to core businesses is likely. Accordingly, the relationships to upstream and downstream units in the value chain do deserve management attention, since improvements can mainly be achieved by effective co-ordination and management of logistic processes with minimum work in

progress. However, this approach tends to systematically underestimate the true transaction costs for communication, mutual understanding, and collaboration with the consequence of permanent quality problems and frictional losses between partners.

Finally, the development of *information technology infrastructures* mainly aims at transparent and effective operation of logistic processes by integrating IT systems along the value chain. In order to achieve complete transparency of production capacities and inventories of all units without enabling, though, the other partners of the supply chain to jointly restructure the value chain and to appropriately optimise their processes. In this sense, many mistakes in order management tend to be repeated on the inter-company level that, on the level of the single company, have already led to severe failures and inefficiencies (Brödner, 1997).

“Low road” companies tend to be locked in with their products in traditional markets. They, therefore, underlie strong price competition with rather stagnating volumes that forces them to further cost reductions again and again – a real vicious circle. Even if this strategy produces improved balance sheets in the short run, it tends to bring the company into an even worse market position in the long run.

The High Road Approach

The “high road” approach is characterised by providing higher productivity along with higher employment rates based on a particular balance of product and process innovation. (Lay, 1997) It is directed towards a quality competition and an extension of markets and services. Performance and services are increased by extended use of existing competencies and personnel within a more efficient organisational structure. “High road” companies try to develop new markets and extend businesses by new products and services based on the smart use of human resources. The paramount objective is to explore and develop new business areas rather than reduce costs. At the same time, knowledge and competencies increased on the basis of reorganised work processes are used for higher productivity and reduced time-to-market. (Porter 1985/1999, pp. 164 ff.; Müller-Stevens & Lechner, 2001) Product and process innovation thus are closely related to each other in this strategy.

Work organisation as well as the *development of action competence and knowledge* are regarded as the most relevant success factors in competition. Therefore, there is an emphasis on the design of integrated working tasks with a high degree of autonomy fostering learning processes. As an organisational prerequisite, a decentralisation on the workplace level (“operative decentralisation”) is introduced. Accordingly, there is a preference for semi-autonomous organisational units and cross-functional team structures performing integrated tasks. (Corso et al. 2000, 88f.) Systematic training and HR development are an element of strategic investment rather than mere cost factors in this approach. Furthermore, learning is considered to be an integral part of working. Work is organised in a way that it provides various opportunities to unfold individual and collective competencies and to use these for product and process innovation. The entrepreneurial exposure to an effective “knowledge sharing” (Brödner et al., 1999) hence is an essential part of the “high road” approach. Knowledge first of all exists in the form of experience or practical knowledge and is socially incorporated in “communities-of-practice” (Brown & Duguid, 1991).

“High road” companies put a great deal of effort into the exploration of markets, improved comprehension of their customers’ problems and needs. They maintain close contacts to important customers and collaborate with them in problem solving. In design processes, they put a great deal of emphasis on the simplification, structuring, and modular conception of their products and related serv-

ices in order to be able to offer customer-specific solutions at low costs. Accordingly, their organisational structure tends to have customer or market oriented units instead of a “traditional” functional structure. Furthermore, high road companies tend to apply concurrent engineering (Syan, 1994; Ehrlenspiel, 1995) in product development. The essence of this design concept is to overcome the weaknesses of functionally divided and hierarchically controlled work processes by systematic collaboration of all experts involved. In many cases, customer-specific solutions, products and services require distributed knowledge. Solutions must be generated in such a short time that single companies are asked to do too much. Therefore, they rely on co-operation with competent partners. In face of these high risks, and increased complexity of most innovation processes, high road companies search for stable co-operative relationships based on mutual trust and understanding in order to expand their innovative capabilities and to cope with growing market requirements. (cf. Corso et al. 2000, p. 83)

Finally, the *information technology infrastructure* shifts its character; it is regarded as a technical support and medium for co-operation rather than a means of automating knowledge work. In order to make it available as a tool to be used individually for efficient coverage of working tasks or as a medium for communication and co-operation, it must be designed under criteria of usefulness in coming to terms with different tasks and, at the same time, under criteria of usability with respect to human acting conditions. (Brödner, 1997; Corso et al. 2000, p. 90)

As an outcome of these efforts, high road organisations break almost completely with conventional knowledge, principles and visions handed down from functional division of labour and hierarchical management through command and control, in particular with the principles of centralised planning and process automation. They strive for direct collaboration of working units, for management by participation, and for the use of IT systems as tools and media. All this creates high demands on action competence and commitment of the actors involved and it makes clear that the organisation’s culture must fit to the new tasks, structures and procedures.

Available Data and Methodology

Investigating into the use of these approaches in German capital goods producing industry, we have to face some severe limits of research and information available. Concerning the aspect of IT-use, little information is available on the application modes and the forms of introduction of these systems. Concerning the aspect of inter-firm co-operation, the situation is similar. Eggers & Kirner (2002, p. 132) recently published findings on the co-operation in capital goods producing industry. They revealed that 62% of the companies are presently co-operating with suppliers or customers in product development, around 50% of the companies do so in sales and distribution, about 40% in production, and about 30% in supply and in customer service. For a “horizontal” co-operation among partly competitive companies in a synergetic manner, there is only an estimation that approx. 20% of the German medium sized companies would presently do so.

Contrasting the limited knowledge on co-operation and IT, aspects of work organisation and company structure can be described comparatively well. Based on the differences mentioned, we can emphasise that “high road” oriented companies tend to have organisational structures which are more

- “horizontal” because they prefer a flat type of organisation and horizontal networking among unit/departments as well as employees

- “decentralised” because semi-autonomous units would be introduced enabling a devolution of responsibilities, autonomy, and self-initiative of the employees
- “participative” because team working and group work is preferred thus fostering employees’ involvement, communication, and enhanced information flows
- “customer and market oriented” stressing process and product innovation thus solving challenges of product complexity by creativity and inter-company co-operation
- human centred focusing on multi-skilled staff which is systematically reflecting experiences and everyday problems; by doing this, these people extend their knowledge-base.

As empirical basis for the analysis, we use data gathered by a questionnaire survey of the German capital goods producing industry (Latniak, Kinkel & Lay, 2002), i.e. we applied research into existing data in order to explore the use and dissemination of the approaches described. Compared to recent initiatives to systematically investigate into CI *processes* e.g. (Rijnders & Boer, 2002; Rijnders, Boer & Schuring 2000), we will concentrate on a cross-section analysis of organisational *structures* applied by German companies. Doing so, our intention is not to explain or in-depth investigate into organisational behaviour, but to provide an explorative “first step” in order to take organisational structures into account. We will emphasise two different levels of organisational structure, the work place level and the level of company structure. The latter has always been a topic of strategic reflection but much less of empirical investigation, recently. We propose to take both the levels into account and to investigate into the companies activities on both levels.

The survey data is gathered by the Fraunhofer-Institut für Systemtechnik und Innovationsforschung (FhG-ISI), Karlsruhe, in a 2 year cycle (Lay & Shapira, 1999). It is focusing on product and process innovation aspects. We applied data of the years 1997 and 1999. In these years, the mail questionnaire was sent to 10.524 enterprises (adjusted sample) with more than 20 employees in 1997, with a reply rate of 13% (1.329 companies). In 1999, 9923 companies received it and the reply rate was approx. 15% (1.442 replies). The machine tool industry is slightly over-represented in both years as are larger companies, but the data provide an adequate representation of the sector in question with respect to industrial sub-sectors and enterprise size.

Two limits need to be mentioned: This is not a panel study focusing on the same set of companies, but it is a bi-annual cross section survey. So, changes in individual companies can not be identified and information on processes is not available. Secondly, there is no method to control the information provided by the companies. The information is limited to the knowledge and experience of the person in charge of the answer. This is a difference to employee surveys (Nordhause-Janzen & Pekruhl, 2000, p.15)

Based on the questions and items available on the survey questionnaire, we choose three organisational measures on company level and three measures on workplace level for a further investigation. At a work place level (“operative decentralisation”), we investigated into the use of group work, decentralised planning and control functions, and task integration. As a specific organisational environment is necessary in order to autonomously perform operative tasks, we furthermore focused on measures at the company level (“strategic decentralisation”), as are the reduction of the number of hierarchy levels, the re-organisation of central units into customer or product related units, and the use of product or market organisational oriented units in production (“production segments”).

Accordingly, a company following a “high road” approach would be active on both levels, thus emphasising market aspects (e.g. by an adapted company structure), co-operation, and work organisation in an integrated way. Companies only active on an operative level tend to apply a kind of lim-

ited “high road” approach because on the one hand, they emphasise workplace related measures but the co-operation and customer orientation is not adequately developed. Companies which are only active on a “strategic” or market level are likely to apply a low road approach, especially, if preferred measures are directed towards cost reduction. Finally, companies not applying any organisational measure can only be characterised as being organisationally inactive.

Furthermore, we discriminated three different levels of the item definition (wide/ medium/ narrow) with increasing narrowness of the criteria. With the latter step, we want to identify the “depth” of the use of the measures in question. The following list shows the definitions of the items and levels for the six variables in question. Accordingly, we applied up to 4 questions of the questionnaire to define the level applied by the company.

Definitions related to Table 1:

Group work:

- A company would fit into the *wide definition* if the answer to the question “Does your company apply group work in production?” is “yes” (own translation).
- A company would fit into the *medium definition* if it fits to the wide definition plus the additional information that at least 30% of the employees are working in groups, and furthermore, planning tasks and quality related tasks are performed by the group members.(For these aspects, we analysed related questions as are e.g.: How many employees are presently working in group work? own translation).
- A company would fit into the *narrow definition* if it fits to the medium definition plus the additional information that all members of the groups are qualified and able to do all tasks. (For this aspect, we analysed an additional question of the questionnaire.)

Decentralisation of planning and control functions:

- A company would fit into the *wide definition* if the answer to the question “Does your company apply decentralisation in production?” is “yes” (own translation) .
- A company would fit into the *medium definition* if it fits to the wide definition plus the additional information that the detailed planning on workshop level, CNC-programming and –optimisation, leading, machine maintenance and repair, and quality management are decentralised. (For this aspect, we analysed an additional question of the questionnaire.)
- A company would fit into the *narrow definition* if it fits to the medium definition plus the additional information that the planning of production orders is decentralised. (For this aspect, we analysed an additional question of the questionnaire.)

Task integration at the workplace level:

- A company would fit into the *wide definition* if the answer to the question “Does your company apply task integration in production?” is “yes” (own translation).
- A company would fit into the *medium definition* if it fits to wide definition plus the additional information that CNC-optimisation, leading, machine maintenance and repair, and quality management is done by the workers and not by shop stewards, medium management, or any specialist of planning departments. (For this aspect, we analysed an additional question of the questionnaire.)
- A company would fit into the *narrow definition* if medium definition is adequate plus the additional information that the detailed planning of orders on workshop level, and CNC-programming is done by the workers and not by shop stewards, middle management, or any specialist of planning departments. (For this aspect, we analysed an additional question of the questionnaire.)

Definitions related to Table 2:

Reduction of hierarchy levels:

- A company would fit into the *wide definitions* if the answer to the question “Did your company reduce hierarchy in production?” (own translation) is “yes”.
- A company would fit into the *medium definition* if the wide definition would fit plus the additional information that at least one hierarchy level has been abolished. (We analysed an additional question asking for the number of hierarchy levels reduced)

-A company would fit into the *narrow definition* if the wide definition fits plus the additional information that at least a third of the hierarchy level have been abolished. (We analysed an additional question asking for the number of hierarchy levels reduced)

Use of production segments:

-A company would fit into the *wide definition* if the answer to the question “Did you re-organise your production into customer or product related units (“segments”)?“ (own translation) is “yes.

-A company would fit into the *medium definition* if the wide definition fits plus the additional information that at least 50% of the units in question are re-organised. (We analysed an additional question asking for the percentage of units re-organised)

-A company would fit into the *narrow definition* if the wide definition fits plus additional information that at least 75% of the units in question are re-organised. (We analysed an additional question asking for the percentage of units re-organised)

Central departments re-organised: -

-A company would fit into the *wide definition* if the answer to the question “Did you re-organise central departments into customer or product related units?“ (own translation) is “Yes”.

-A company would fit into the *medium definition* if the wide definition fits plus additional information that at least 50% of the units in question are re-organised (We analysed an additional question asking for the percentage of units re-organised)

-A company would fit into the *narrow definition* if the wide definition fits plus additional information that at least 75% of the units in question are re-organised. (We analysed an additional question asking for the percentage of units re-organised)

Findings

			Wide definition of the item		Medium definition of the item		Narrow definition of the item	
	N (in 1997)	N (in 1999)	(% of companies)		(% of companies)		(% of companies)	
			1997	1999	1997	1999	1997	1999
Group work	1287	1442	57.1	64.1	37.3	46.8	14.5	19.5
Decentralisation	1233	1393	34.2	39.3	11.8	14.4	2.7	3.6
Task integration	1242	1402	49.0	59.6	9.9	14.6	2.6	3.4

Table 1: Dissemination of „Group work“, „Decentralisation of planning and control functions“ and „Task integration at the workplace level“ in German capital goods producing industry (1997/1999)

As table 1 shows, in 1997 and 1999, the most widespread measure on the workplace level in German capital goods industry is group work – for all levels of the definition. While even in the narrow definition approx. 1/5 of the companies are applying group work, decentralisation of control and planning and task integration are applied by a comparatively small group of companies (if the medium level is focused). For the narrow definition, only a few companies apply a decentralisation of planning and control functions at the workplace level. This means that an integration of these support processes is an exception for the companies analysed, still.

Referring to the “high road” notion, it became evident that for the operative aspect, there is only a limited use of advanced and “empowerment”-oriented organisation structures applying the competencies of the workforce in an integrated manner. Job enrichment (by task integration of planning and control functions e.g.) is obviously neither very far reaching nor widespread.

Compared to the measures on a workplace level, the activities on a company level were much more widespread. First, the figures indicate that there is a massive reduction of hierarchy levels and a re-

organisation of central units comparing 1997 and 1999. Secondly, this is the case even for the narrow definitions. All strategic measures (in narrow definition) are more widespread in 1999 than even group work is on the operative level. Between 1997 and 1999, the main reorganisation focus of the companies obviously lay on efforts to become “leaner”. It seems as if German companies increasingly made attempts to reduce organisational hierarchy levels and units while an adequate design on a workplace level is less widespread.

We would like to emphasise that we could not identify any variation of these findings for by sub-branches or enterprise size. Furthermore, there is no variation by production structure (like e.g. “mass production”, “medium series production”, “customised small batch production”, and “fixed site production”. Information on these aspects are available in the survey data).

			Wide definition of the item (% of companies)		Medium definition of the item (% of companies)		Narrow definition of the item (% of companies)	
	N 1997	N 1999	1997	1999	1997	1999	1997	1999
Reduction of hierarchy levels	1280	1409	63.8	74.6	37.9	65.6	16.0	25.9
Use of production segments	1261	1414	42.8	47.6	34.8	39.4	25.4	27.6
Central departments re-organised	1216	1409	29.9	52.1	24.9	43.0	17.2	27.7

Table 2: Dissemination of „Reduction of hierarchy levels“, „Use of production segments“ and „Central departments re-organised“ in German capital goods producing industry (1997/1999)

In the next step, we investigate deeper into the activity preferences of the companies. Concerning the question whether companies would apply different measures on the operative level and the company level at the same time, or whether they would focus on one of the levels, we made a cross-table to identify different priorities of activities and thus defining empirical types of companies based on the survey data.

	Level of operative decentralisation HIGH	Level of operative decentralisation LOW
Level of strategic decentralisation HIGH	Type 1 “organisationally active”	Type 4 “Focus on strategic decentralisation measures”
Level of strategic decentralisation LOW	Type 3 “Focus on operative decentralisation measures”	Type 2 “organisationally inactive”

Table 3: Types of decentralisation preferences

Definitions referring to Table 3:

- *Type I “organisationally active“* describes companies which apply a comparatively high degree of strategic and operative decentralisation measures at the same time. This type includes companies which apply at least two strategic and two operative elements - both according to the medium definition (cf. above).
- *Type II “organisationally inactive“* describes companies which apply a comparatively low degree of strategic and operative decentralisation measures. This type includes companies which apply not more than one strategic and one operative element - both according to the medium definition.
- *Type III “Focus on operative decentralisation measures”* describes companies which apply at least two operative elements, but not more than one strategic elements - both according to the medium definition.
- *Type IV “Focus on strategic decentralisation measures”* describes companies which apply at least two strategic and not more than one operative elements - both according to the medium definition.

These types obviously represent certain preferences of activities. Companies only focusing on the strategic level tend to neglect the shop floor level (type 4). Companies only focusing on the shop floor level – without a similar emphasis on a company level – would fit to type 3. We supposed that especially smaller companies would fit in, here, due to the fact that smaller companies have less hierarchy levels or any central units. Finally, companies which are active neither on the one level nor on the other fall into type 2 (“organisationally inactive”). The results of the analysis of our data are shown in table 4. Here, we have remarkable differences along the company size.

1997: N= 1329 1999: N= 1442	Type I		Type II		Type III		Type IV	
	“organisationally active“ (high degree of strategic and operative decentralisation measures)		“ organisationally inactive“ (low degree of strategic and operative decentralisation measures)		Focus on operative decentralisation measures		Focus on strategic decentralisation measures	
	1997	1999	1997	1999	1997	1999	1997	1999
% of companies	5,7	10,8	68,1	46,3	4,2	5,3	22,0	37,5
By number of employees (% of companies):								
- Less than 100	3,0	6,4	80,5	58,0	3,7	6,1	12,8	29,6
- 100 to 499	8,2	13,6	60,9	37,5	4,0	5,7	26,9	43,2
- 500 and more	14,2	21,6	35,1	17,3	6,7	4,9	44,0	56,2

Table 3: Dissemination of different types of organisational decentralisation in German capital goods producing industry (1997/ 1999)

The figures indicate that along with the increasing efforts on a strategic level (cf. table 2), there is an increase especially in types 1 and 4. The most advanced type 1 (“organisationally active”) nearly doubled its percentage starting from a low level. About 11% of the companies in the German capital goods producing industry organisationally tend to follow a “high road” approach in this respect – if only the organisational aspect is covered.

On the other hand, more than 45% of the companies fit into the “organisationally inactive” type 2. This is dramatic because the majority of the companies in this type are small and medium sized

companies. Our hypothesis that smaller companies would focus on measures on an operative level could not be verified, i.e. type 3 companies are hardly found. There is obviously an increasing number of companies which reorganise their structures according to market or customer orientation (type 4). But these companies obviously place little emphasis on further developing their internal structures towards a “smarter” use of employees qualifications and competencies as our figures indicate.

Conclusions

Contrasting to the public image of widespread organisational changes in German companies, we could find evidence for a slower and limited change in organisational structures in the late 1990's. Furthermore, there is significant evidence that “high road” oriented companies are still a minority in German capital goods producing industry – there are approx.10% of the latter neglecting further criteria mentioned above.

But we revealed some remarkable changes. Comparing 1997 and 1999, there is an increasing number of German companies actively applying measures on a strategic level of decentralisation. While corresponding emphasis on a workplace level is not visible, we can see that a large group of companies (type 4) remains in a kind of “half way” position. Maybe they fit to “high road” criteria with respect to the customer orientation, but there is a missing link to work organisation on an operative level and an improved use of employees competencies. Taking into account that 2 of 3 strategic measures (reducing hierarchies and reorganisation of central units) we investigated are closely related to outsourcing and layoffs in many cases, the impression is that a majority of companies in type 4 would follow a “low road” approach.

What could be reasons for the reluctant shift towards a “high road” approaches even if the economic result would be attractive? First of all, taking the “high road” is not an ‘instant’ step but a complex process. (cf. Rijnders et al., 2000) You need some time and resources to shift from an existing structure and market position to another strategic orientation – with quite a lot of difficulties on this way (Brödner & Kötter, 1999). Furthermore, it is evident that you need some organisational “slack” in order to perform a successful change process. This especially could be crucial because our results indicate that maybe the companies cut off the resources needed for a shift of strategy through their emphasis to become “leaner”.

As a second aspect, the companies need to be independent enough to decide and have a choice. Taking into account the close integration of second and third tier levels in automotive supply industry e.g., there might be great difficulties to manage a strategic shift which is not supported by the customers. So all in all, there is some scepticism whether increasingly more companies will ever take the “high road”.

As a final aspect, we would like to emphasise that we see a need to extend research on the empirical changes in companies. Our empirical analysis it is just a first step. An extended investigation into the relations of different factor patterns covering company strategy, organisation, HRM etc. must be based on adapted methodology. The CINet-approach (Rijnders & Boer 2002) to do a set of in-depth case studies based on a common frame of reference may provide a good basis for an analysis with a standardised survey in order to investigate into the dissemination of certain process types e.g. in the future. We see a need for multi-variate methods of analysis in order to control interrelations of these variables on the one hand, and an integrated discussion of data generated by the case studies and the survey data on the other.

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