The German Automobile Industry in Transition

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Abstract

This paper describes the new approaches the German automobile industry has developed during the last four years. It deals with product strategy, production concepts, work organization, industrial relations and technology. In the automobile industry, team concepts and groupwork have been the most important innovations in increasing efficiency. There are two fundamentally different approaches to team work. The concept of 'structurally conservative groupwork' is a more or less modernized version of Taylorism. The job descriptions of production workers remain narrow, there is not much work autonomy and no reprofessionalization. By contrast, 'structurally innovative groupwork' builds on the specific assets of the German industrial order: the tradition of craft work (Facharbeiter), the strong focus on qualified, self-directed work, and the consensus orientation in the field of industrial relations.

Socio-structural Conditions in the German Automobile Industry

In January 1997, the number of unemployed people in Germany rose to 4.66 million, an unemployment rate of 12.1%. This figure is the highest in the history of the Federal Republic. It is typical of the political mood in Germany that a large daily paper on its front-page addressed the situation with the headline: 'Unemployment figure last seen in 1933' (Frankfurter Rundschau 3.2.1997) – a direct reminder of the situation of the former 'German Reich' shortly before Hitler took over.

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At the moment there are (still) good reasons to say that such a comparison exaggerates the socio-political problem. However, all political powers are in agreement: 'The crucial problem is unemployment' (F. Schösser, Chairman of the German Trade Unions Federation [DGB] Bavaria on 2.2.1997). In search of a solution, the German production model and policy system is under the microscope.

Only a few years ago the German post-war path could be demonstrated as 'a model of success' and be recommended for 'export'. The socially regulated high-wage economy, which began to develop in (West) Germany after 1950 and continued to function well until the beginning of the 1990s, was based on linking the comparative advantages of the location of Germany into a harmonious economic strategy, which was easy to remodel into a social compromise. Five features characterized this system:

- First, by cultivating the tradition to produce diverse, technically excellent products, the high quality segments of the markets, which expanded with the increasing wealth ('niche strategy'), could be captured.
- Second, due to long-term perspectives in business as well as other areas, capital investments could be made which only needed to pay off in the long run and were not blocked by short-term expectations on returns. ('long-term strategy').
- Third, by utilizing the highly competent industrial goods market (in particular, mechanical engineering), the high-quality producers (in particular the automobile industry) were able to provide themselves with flexible automation which met their technical requirements precisely and linked efficiency with flexibility ('flexible automation strategy').
- Fourth, by resuming and reforming active job traditions ('dual system of apprenticeship', 'skilled worker') high-quality/high-technology productions could be flanked by a personnel policy which, at least in some areas, distanced itself from Taylorism and emphasized functional integration, higher qualification and 'production intelligence' ('high qualification strategy').
- Fifth, there existed a system of industrial relations, characterized by established modes of articulation of interests, in which trade unions and employers were able to operate without much friction ('strategy of consensus') with strong rights of codetermination and influence by labour representatives; duality of extra-plant pressure groups [industrial trade unions, collective agreements concerning wages, working hours and general working conditions, autonomous wage

bargaining, right to strike] and internal representation of interests [works councils; internal agreements on concrete conditions of applications of labor force, obliged to maintain company interests and peace, therefore excluding open industrial action].

The system based on these five strategies created a workable social compromise. This, in turn, politically safeguarded the system of the 'corporate welfare state'. The social compromise mainly expressed itself in three social promises which, until the beginning of the 1990s, could be relatively credibly fulfilled:

- Within the economic system, a production volume could be created and growth could be ensured which allowed for an extensive absorption of the work potential: 'work for (almost) all';
- The economic system was accompanied by a production regime which was based on qualified work and institutional embedding of the participants and which – through high productivity – would finance high wages: 'acceptable work';
- Through the economic system the net product would be sufficiently large to finance the social costs for the security and promotion of those who were temporarily unable to find acceptable work: 'social security state'.

Currently, the future of the German model is not as clear. Over the last few years the gross domestic product, after sinking in 1993 (-1.2%), has recovered in comparison with the previous years (1994: +2.9%; 1995: +1.9%); and over the years since 1992 the export surplus has reached record levels (the surplus has increased four fold to 91 billion DM since 1993). For Germany as an exporting country, this is a central indicator of economic success. Yet, despite this economic growth, problems in the labor market are becoming increasingly extreme, because the reduction in the demand for labor continues, whilst the labor supply is increasing. New labor force groups, in particular women, are also emerging in the labour market. The increase in production is too small to absorb the effects of rationalization and the growing labor supply. The compensation strategy by the trade unions for a rigorous reduction of working hours is increasingly difficult to enforce. Despite the cyclical economic revival of 1994/95, further jobs were abolished and the permanent unemployment rate has greatly increased. All are aware of the fact: the employment setback is highly perilous for the socio-political climate in Germany, as the post war compromise between capital and labor was to a considerable extent based on the political guarantee of full employment.

The Automobile Industry on a Path to Success: The Crisis of 1992/93 has been Overcome

The test of the German production model is not least decided by the automobile industry. Like no other industry, it determines the general economy of the country. Its share of the total German export amounts to one sixth. Taking into account all employees directly and indirectly connected with this industry, almost 5 million German employees depend on the automobile or, in other words, every seventh employee.

The German automobile industry has experienced difficult years. Initially, the 'reunification' with East-Germany created a record boom (5.19 million cars produced in 1992). No other consumer item was in such great demand as the car during the first few years after the merger of East and West, nothing else symbolized 'wealth' and 'golden West' as clearly to the former inhabitants of the German Democratic Republic (GDR). But then followed the setback: in 1993 production slumped to 4.03 million units. 1994 marked the slow economic recovery, which in 1996 led, after all, to a production of 4.84 million cars. The industry is also expecting expansion in the future. In concrete terms this will mean an increase of the German domestic automobile production by approximately 2% for 1997 (B. Gottschalk, president of the German Automobile Industry Federation [VDA], 20.1.1997).

The indicators for the recovery are rather impressive:

- All German producers report increases in production and growing exports.
- In 1996 the German automobile industry increased its global market share from 14.2% to 14.7% and increased its export rate to 59% of its domestic production.
- Gross fixed capital investments – an important indicator of expectations for the future – reached 14 billion DM in 1996 – 23% more than during the previous year.
- Expenditure on research and development in 1996 were increased to 13.3 billion DM. Thus, from 1990 to 1996 they had increased by almost 50%.

This success was achieved despite the industry maintaining its 'global position' on wage costs with 62.00 DM per hour. However, the bitter pill in the development of German automobile manufacturing is that market growth does not include employment. The economic expansion is dealt with by a decreasing number of workers. Volume growth is thus not able to compensate the increase in productivity. Only in 1997 is it expected that

the employment level can at least be stabilized. All in all, the automobile industry sees itself on a path of renewed success. The head of the German auto industry announced: 'the automobile industry has done its homework, increased its competitiveness and has learned the most important lessons from the years 1992 and 1993' (Gottschalk, 1997).

Due to the crisis of 1992/93 there were significant changes in the German automobile industry. Fundamental rethinking of product strategies and production concepts took place and new approaches were developed. Major stimuli for reorganization came from the focus on Japan in Germany at the beginning of the nineties and the presentation of Toyotism in the shape of the MIT lean production. However, this does not mean that Japanese strategies, were put into action on a 1:1 basis. Neither does it mean that an identical concept was put into action in all German automobile plants. More important was the stimulating effect the lean-production debate brought into the industry so that the necessity for radical change was no longer a matter of debate.

The German automobile industry discussed lean production in a rather specific manner. First, comparisons of productivity showed that, viewed by global standards, a clear efficiency advantage was achieved by Japanese automobile producers. It was decisive for the German perception that this cost advantage was clearly seen in connection with organizational and production pattern strategies. Most characteristic was that not only German trade unions – but also management – considered the distinctive features of the Japanese production methods (group structures, inclusion of executing staff/Kaizen, less functional specialization/flexible workforce) in the context of the debate held since the end of the seventies about 'Quality of Working Life (QWL)' and 'new concepts of production' (Kern and Schumann, 1984). In this context, work concepts with qualified, integrated work and greater autonomy of employees were examined and in some places were practised successfully (cf. Schumann et al. 1994). Against this background, the implementation of lean production in Germany had, from the outset, a different and unique direction of impact from that in the other European countries. The specifically German strategy of work and internal reorganization, which concentrated on developing alternatives to Taylorism, having achieved progress in the eighties, also received a new thrust at the beginning of the nineties (cf. Kern and Schumann, 1984 and Schumann et al, 1994). Three elements of the 'lean model', were made the key criteria of their reorganization by German automobile manufacturers:

- Upgrading of value-adding tasks as compared with indirect activities;
- Overcoming all human, capital and economic 'waste' of resources and radical 'streamlining' and 'trimming';
- Dissolution of a process-oriented, functional segmentation of production in favor of a product-oriented process organization.

All German automobile companies had an interest in the effective realization of these goals. This created a base of mutual strategic starting points. At the same time, different 'paths' were developed in corporations, as well as in some plants, each according to their own manufacturing traditions, business strategic guidelines, organization conditions and industrial relations. This process has not yet come to an end. It is also still uncertain whether differentiation between companies will increase or whether, in the long term, a homogenization will reassert itself.

With rather limited information on all activities of the various German automobile groups, only the general tendencies of change can be observed. Differentiation can only be shown where information has been reliably gathered in case studies. This applies in particular to the utilization of groupwork (For further details on the utilization of groupwork in German automobile manufacturing, cf. Schumann and Gerst, 1996).

How did the new 'strategic starting points' look when the German automobile industry reacted to the crisis of 1992/93 (see Figure 1)? This is examined in the following sections of the paper.

Product Strategy

In the case of product strategy, the promise of being able to extract oneself from price competition with the 'niche strategy' of a 'diversified, technically-excellent quality production', was discarded. Currently, German automobile manufacturing also faces the challenge of price competition but is endeavouring to maintain an upmarket segment for its products: guidelines shall continue to be the criteria of 'technical excellence', 'high quality', 'maximum safety', 'modern design' and 'customer-oriented service'. In the future, there are excellent opportunities to offer models in the respective categories in 'premium position' and to expand this position still further by innovative advanced developments – at a modified price strategy. The new models were offered without price increases – a novelty in German automobile manufacturing. Initial sales success confirms the new market strategy: the C and E class from Mercedes-Benz, the 5-Series from BMW, the Vectra from Opel, the Passat from Volkswagen, the Fiesta from Ford –

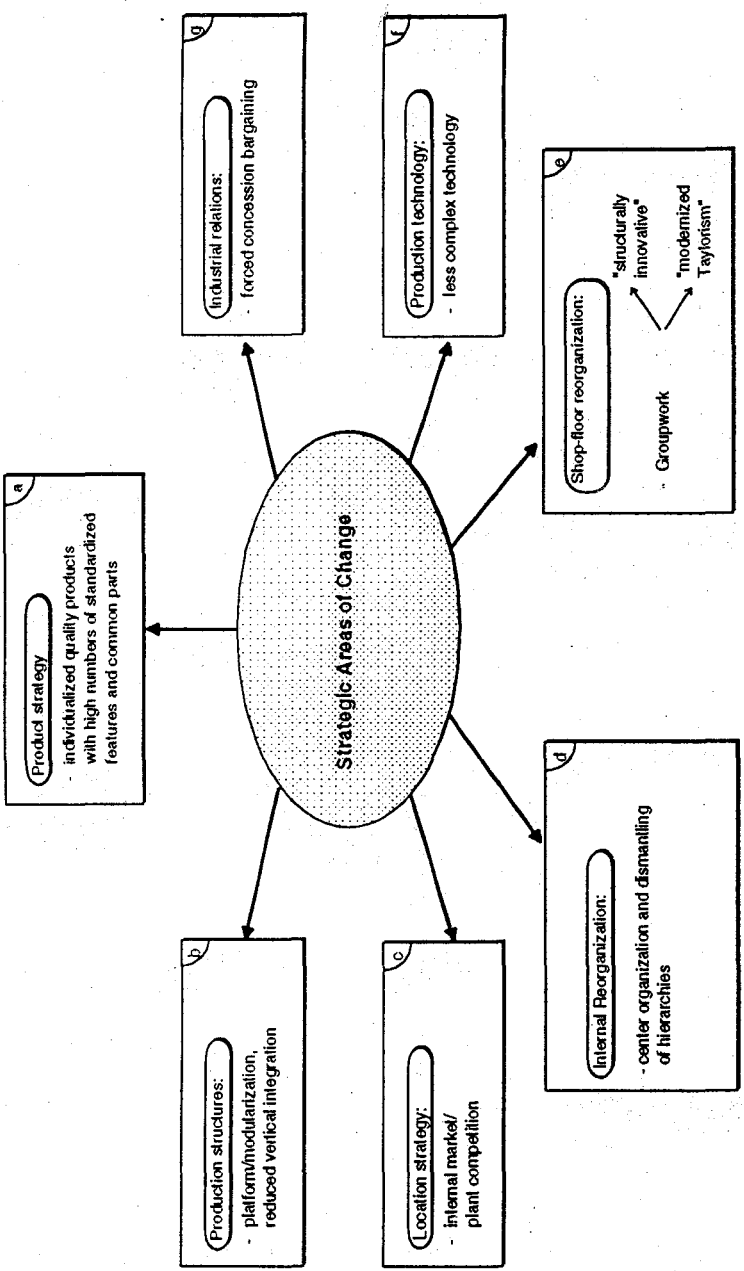

Figure 1. Key Points of Reorganization in German Automobile Manufacturing 1994-1997

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all above average successful new developments of the last years on the market which, in comparison to the previous model, have hardly increased in price.

In order to compete on price, a thorough change in product design below the customer-relevant appearance of the end product will take place. Without abandoning the demand for a still growing variety of models and types, savings in manufacturing are being sought through cost-oriented design and construction. It is a matter of both production-related, complexity-reduced and assembly-friendly product design, and balancing the contradiction between mass production and individual customer requirements by systematic utilization of standard elements and identical components. The goal is to manufacture as 'individually as the small series and as productive as the mass series' (Board of BMW 1996) and at the same time to avail oneself of all advantages of economies of scale. Simultaneous engineering and thus possible early participation of the shop-floor in planning contributes towards achieving this goal more readily.

Structures of Production

The product strategy also facilitates a new tailoring of the structures of production. The standardization of production below the end-product individuality and component-modularization is pushed further in the platform strategy for the chassis of cars. In an ambitious long-term effort, the Volkswagen-group wants to reduce its original 20 platforms to four. On the basis of a larger spectrum of 'components' and 'systems' beyond all four brands of the group, it shall be defined, developed, sourced and utilized covering all models. By this means, development costs of new models are to be reduced and critical timing start-up phases speeded up while improving the time-to-market margins.

With the trimming of components and modularization, the foundation is being laid for a systematic evaluation of internal production under the criteria of make or buy. Here also, the results of the MIT-study of the auto industry proved the need to catch up on out-sourcing. Increasingly the German automobile manufacturers are oriented towards the position that cost advantages are to be gained by reduced vertical integration and concentration on the core competence. In general, each component, part or system is to be tested on the market to see whether purchasing is cheaper than internal production. The goal is intelligent task sharing in the value-adding process together with efficient suppliers, the number of which is to be reduced and organized into chains, to minimize the number of system suppliers who, in addition, are also obliged to just-in-time deliveries.

Location Strategy

By means of a precise location strategy, individual plants throughout the group will be exposed to an increasing number of rival competitors. Internal competition for aggregate and vehicle production decides which of the groups plants will be awarded the contract, thereby ensuring its future. Production cost comparisons for order allocation within the group play an increasingly greater role. Because of the location strategy enormous rationalization pressure is being exerted on the individual plants; it is also reflected in rigorous 'concession bargaining' with works councils.

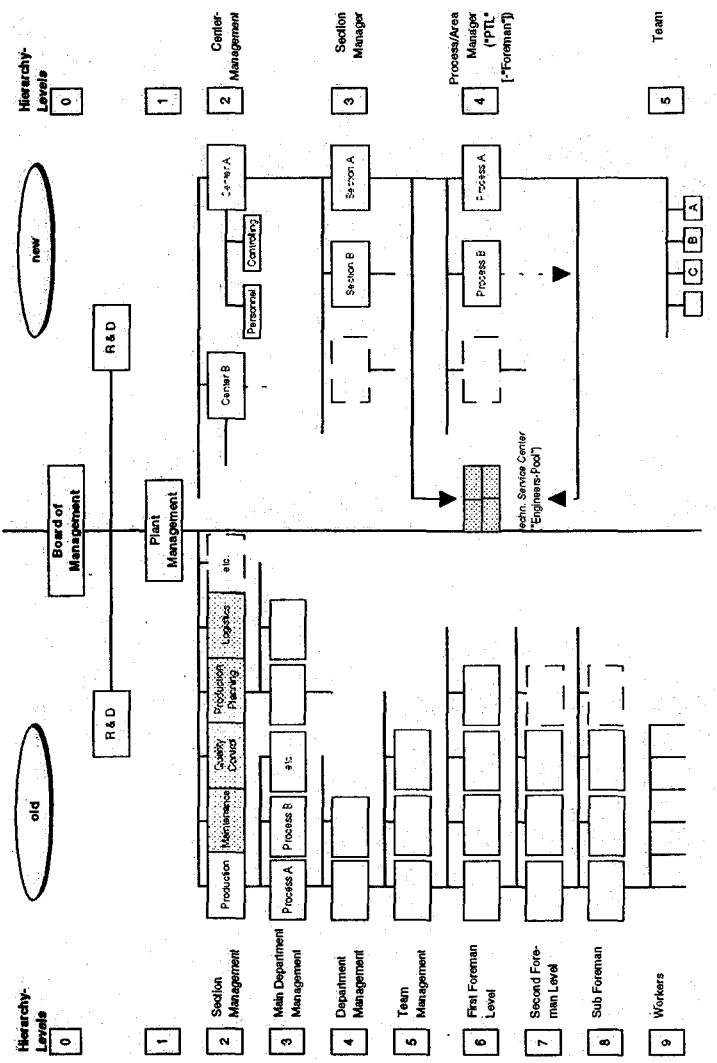
Internal Reorganization

Company reorganization is also carried out under the pressure of rival competitors. Plants are subdivided into more or less self-reliant 'centres', many of which, act as relatively autonomous market participants ('mini-companies'), but have to assert themselves with a far-reaching cost/budget responsibility within the company. Plant management discusses 'target agreements' with the cost or profit centers (one-year programs) and thereby produces massive pressure to succeed. In particular objectives are determined according to the procedure of bench-marking; i.e. orientation towards production methods and manufacturing costs of leading competitors. Beyond this, a target cost management fixes stricter rationalization goals with successively self-progressing efficiency targets, thereby forcing production to self-rationalization in various ways: for continuous improvement of all processes; for reducing levels in the hierarchy of the organization; and last, but not least, for a product and value-adding oriented delegation of indirect areas (maintenance, planning, quality control and logistics) which are combined as 'service centers' and are placed under the direct responsibility of production (centre-management) (see Figure 2).

Reorganization of the Shop-floor

During the first period after the crisis of 1992/93, in a search for rapid rationalization 'shop floor circles', or cost reduction groups (experts of different hierarchy levels and specialized areas including workers) were utilized by all automobile companies. In a speedy campaign procedure, rationalization groups analyzed as many sections of production as possible to detect particular deficits and to present suggestions for solutions. At Volkswagen, this concept was established directly with the Board for Production (I. Lopez) and in a publically effective manner implemented under the title 'KVP2'. However, it often was a case of 'one-off action'.

Figure 2. Internal Reorganization: Centre Organization



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Critics therefore spoke of 'a flash in the pan', through which lasting changes and rationalization successes are impossible to achieve.

The goal of optimization and effectiveness of production processes was integrated into the concept of 'groupwork'. During the 1970s and 1980s, the German automobile industry experimented with 'groupwork'. However, as a work-related rationalization instrument, it only became relevant to production after the crisis of 1992/93 and in the wake of the lean-production debate. Only since the crisis has 'groupwork' been widely introduced, at least at shop floor level, in the companies concerned. Research by IG Metall shows that in 1990 only 4% of automobile-production employees participated in groupwork. The figure then rose to 9% [1993] and 22% [1994] [cf. Roth, 1995]. For its own group, Mercedes-Benz reported an incidence of 50% by 1996 and aims to have 100% of the production workers in groupwork by 1998.

Since 1994/95, in the search for more effective utilization of labour, 'groupwork' has advanced to probably the most important rationalization instrument in German automobile manufacturing. Within companies, however, a great variation and even contrary concepts are realized under the term 'groupwork'. The work-related goal of increasing efficiency through groupwork is now most prominent. This contrasts with groupwork experiments carried out in the 1970s and 1980s which, for socio-political reasons, primarily sought improvements of working conditions. Most companies, however, go their different ways in search of more shop-floor efficiency.

Under the strong influence of works councils and in the tradition of a consensus-oriented company culture, utilising German location particularities (in this case especially the skilled worker tradition and higher demands by the workers for qualified, professional work), *Mercedes-Benz* has developed a variant of 'structurally innovative' groupwork that is trying to break radically with traditional work concepts. First tested in ten pilot projects throughout the group and evaluated by SOFI (cf. Schumann and Gerst, 1996) this new approach was established in an internal agreement between management and works councils in 1996. In accordance with this agreement, groupwork will be implemented in all plants of Mercedes-Benz in the coming years.

The 'structurally innovative groupwork' at Mercedes-Benz can be understood as an alternative work-related rationalization to Tayloristic concepts. It concentrates on qualified, more demanding and more attractive job profiles, as well as on extended self-organization, opening up areas of discretion for self-reliant work within the scope of consensual performance agreements. One starting point of structurally innovative work design is a

broad integration of tasks and functions which does not limit itself to the expansion of directly productive activities, but also includes indirect functions from areas such as service and maintenance, as well as quality assurance, logistics and planning. Self-organization, the second level of structurally innovative groupwork, means the elimination of the hierarchic position of the foreman and transfer of a number of organizational tasks to the responsibility of work groups. Although the elected spokesmen for the groups act as contact persons, moderators and coordinators, they are neither authorized to give instructions nor are they elevated from the group by special tasks. Groupwork is an attempt, by way of an integrated task profile, to achieve work innovations by the employees themselves and to gain their willingness to actively participate in optimization and to pursue rationalization by self-initiative (see Figure 3). The concept is generally influenced by the socio-technical approach. In our evaluation of ten projects we could show that, especially upgrading work on the basis of functional integration and an extended degree of discretion on the basis of self-organization, is received very positively by employees. The improved status in such an organizational setting creates good preconditions to bring employees effectively into an active role in the rationalization process (cf. Schumann and Gerst, 1996).

Another work group concept, which is being realized by Opel, was constructed as a group-wide 'model' at the Eisenach assembly plant in East Germany. It is strongly oriented towards the experiences of NUMMI/General Motors/Toyota and of CAMI/General Motors/Suzuki and can be classified as a 'variant of modernized Taylorism'. The initiatives at the Volkswagen assembly plant in Mosel have a similar appearance, for which Nissan (in the United Kingdom) acted as role model.

The concept of 'structurally conservative groupwork' at Opel also attempts to take into account the special importance of the work force for production success. Opel is aware of the demotivating effect of traditional Taylorism and the limits of increasing the motivation of the workforce solely by financial incentives. The new approach aims at more self-initiative and discretion, in particular to avoid and correct errors, as well as to improve the production process. The concept envisages elements of self-organization and agreements on production targets with the groups. But these 'compromises' to activate performance and willingness to participate are given in homeopathic doses. The still highly restrictive task profile, as in classic Taylorism, provides few chances for development and allows no reprofessionalizing whatsoever. The group spokesman, at least at the Eisenach plant, appointed by superiors and financially rewarded, also guaran-

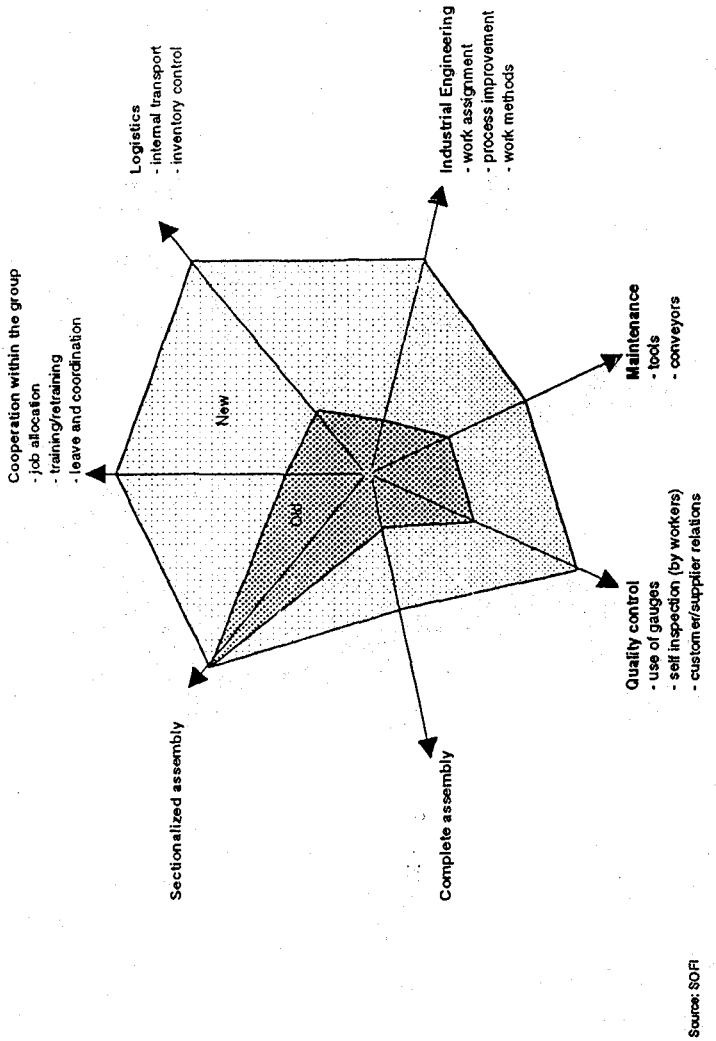

Figure 3. Changes in the Distribution of Work through Innovative Groupwork

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Figure 4. Variants of Group Work

	Structurally Conservative Group Work	Structurally Innovative Group Work
Extent of Direct Production Tasks	Lesser: short work cycles, rotation	Greater: longer work cycles, rotation
Extent of Indirect Tasks	Lesser: indirect and organizational tasks for specialists	Greater: integration of indirect tasks for all group members
Degree of Self-Organization	Low: decisions made by foreman and team leader	High: planning, execution and control of work by entire group
Group speaker/ team leader	Teamleader: Special status due to indirect tasks and exemption from direct production work, deployed often and entitled to give instructions (extended hierarchy)	Equal status group speaker, elected coordinator and group contact person
Group meetings	Limited time, choice of subjects by management, Subjects: internal information and productivity	Choice of subjects by the group: including self-organization and group interests
Role of the Foreman	Continued strong hierarchical position, leadership by instruction and control	Supporting the group, negotiator between organizational goals and group interests
Performance Policy (effort, type of control)	Performance through standardization and cycle dependency, agreements on work standards with the team	Performance through self-commitment and empowerment of the group
Continuous Improvement Process (CIP, KAIZEN)	Supported by specially selected staff members; goal: optimization and standardization of work	Supported by entire group; goal: long-term optimization also of work conditions, rationalization through self-direction

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tees, due to a virtual-foreman-position with its own control and instruction authority, the tightening of the loosened rein.

The comparison in diagramatic form of both variants of groupwork (see Figure 4) clearly demonstrates the work-relevant differences in almost all dimensions of the comparison. Whilst the structurally innovative type diverges from Tayloristic principles and equally extends competence and room to maneuver, the structurally conservative variant remains rooted in tradition and, at least in principle, does not overcome the rigidity of Taylorism.

The economic advantages and disadvantages of both concepts cannot be precisely expressed. The advantage of the structurally conservative concept lies in the fact that it can be implemented at low additional cost (no special input and qualification costs). This means it is 'worth its while' even in the short-term perspective. It therefore fits in very well with growing demands for annual returns, reflected in the politics of centre target agreements. In addition, the rather simplistic 'rendering of accounts' along the lines of 'company workforce', 'overall assembly time' and 'quality ratio', allows easy comparison with the relevant bench-marking targets. Competitiveness and cost saving, parallel to the criteria and time perspectives taken into account, appear more readily in a favourable light. But it is overlooked that the shortcomings of the concept could be in a longer term perspective. In the long run, neither work motivation of the group can be improved nor its active participation in internal optimization be achieved. Based on all experiences, the employees remain, also in their conception of themselves, rationalization losers – and behave accordingly towards work and company (cf. Antoni, 1994; Mickler, 1996). Because of this, IG Metall therefore categorizes the structurally conservative concept of groupwork as simple 're-Taylorization'; 'Short-cyclical, cycle-dependant activities, exclusively assembly line production, limited task expansion and minor integration of indirect functions, low staffing and growing work pressure; in short, as we call it: re-Tayloristic groupwork' (K. Benz-Overhage, Board IG Metall 1995).

The handicap of the structurally innovative concept is, in particular, that its implementation is connected with additional costs. But an economic long-term evaluation by Mercedes-Benz clearly shows considerable efficiency gains in the long run (see Figure 5), reduction of production time, reduction of human resources, increase of staff and machine utilization, improvement of product quality, suggestions for improvement and reduction of absenteeism. To aim for these, of course, demands long-term investments in the human resources.

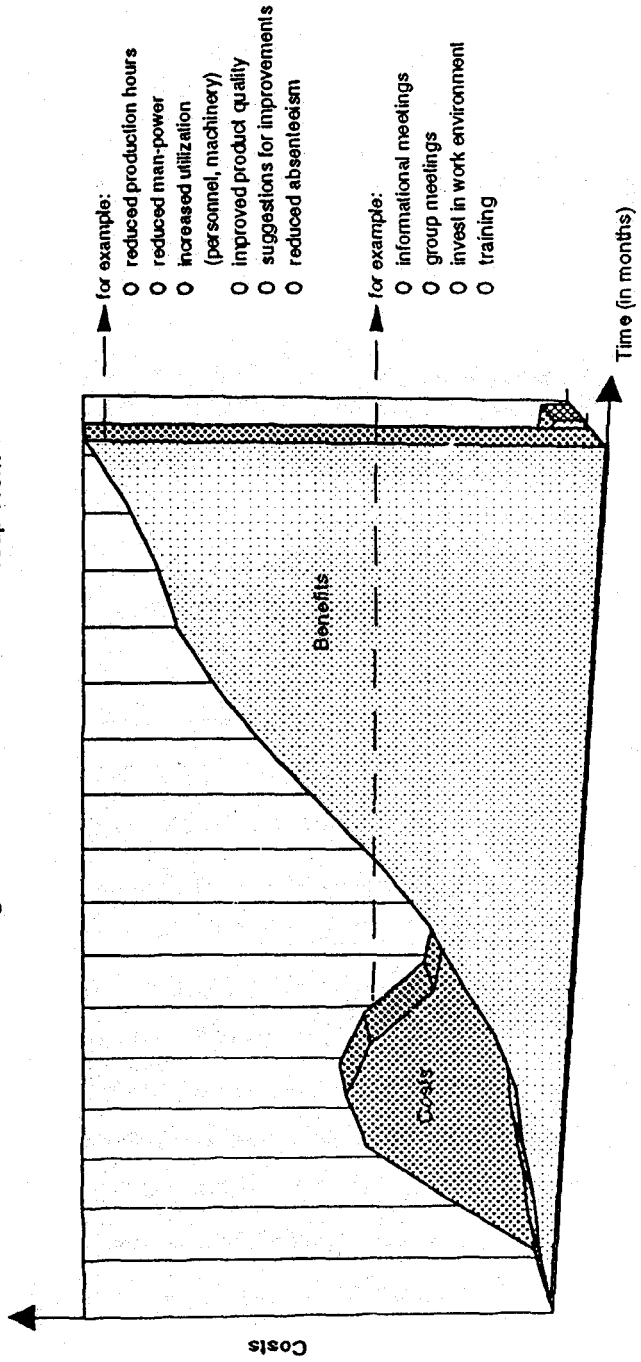

Figure 5. Costs and Benefits of Group Work

Source: Mercedes-Benz 1995.

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Both concepts of groupwork, with the new type of performance agreement between foreman and the group, have considerable influence on internal industrial relations. The traditional 'representation' policy by the works council is being thwarted by determining performance and working conditions through 'self-representation' of the group and its spokesperson. The role of the works council changes to that of a 'grievance department'; it only intervenes in cases of conflict (see Figure 6). Initially, IG Metall and its works councils had strong reservations, whether by this 'self-representation' of groups, institutional codetermination rights could be maintained, or, in particular by establishing a 'group spokesperson', a competitor could arise to the works councils or the union shop stewards. In the meantime the new groupwork settlement has been accepted and even regarded as a positive challenge to their own representation work: 'in future we shall have to make increasing efforts to win over the group spokesperson, because they in general enjoy recognition and authority due to their function, their technical competence and their social tasks in the group. It is therefore definitely important that they are reliable sympathizers of union work' (Position paper by the Board of IG Metall 1995).

Production Technology

By comparison with the 1970s and 80s, the factor of 'production technology' has clearly lost ground since the crisis of 1992/93. Ambitious production-related projects (such as the partial automation of final assembly of the Golf (Rabbit) at the Wolfsburg Volkswagen-plant, with an increase from 8% to 32% degrees of automation at the beginning of the eighties) are no longer being realized and are currently not to be found in any planning 'cookbook'. Especially in the mechanization of assembly, the last great sector in automobile production where manufacturing work is predominantly manual work, automation has technically been proven possible, but economically not justifiable, and the trend is currently rather the reverse. The board member responsible for production at Mercedes-Benz speaks of a general 'change in trends' regarding mechanical utilization in automobile manufacturing. Until the beginning of the 1970s automation was evaluated on the level of its flexibility achieved and advanced developments aimed for suitability of variant mix as well as type change, but it is being propagated differently now: 'flexibility is a dead-end, a mistake. It costs money and looks good on paper, but in reality it is questionable. We are moving in the direction of a single purpose-plant' (J. Hubbert, Automobilproduktion 1996). Product specific machinery, previously denounced as

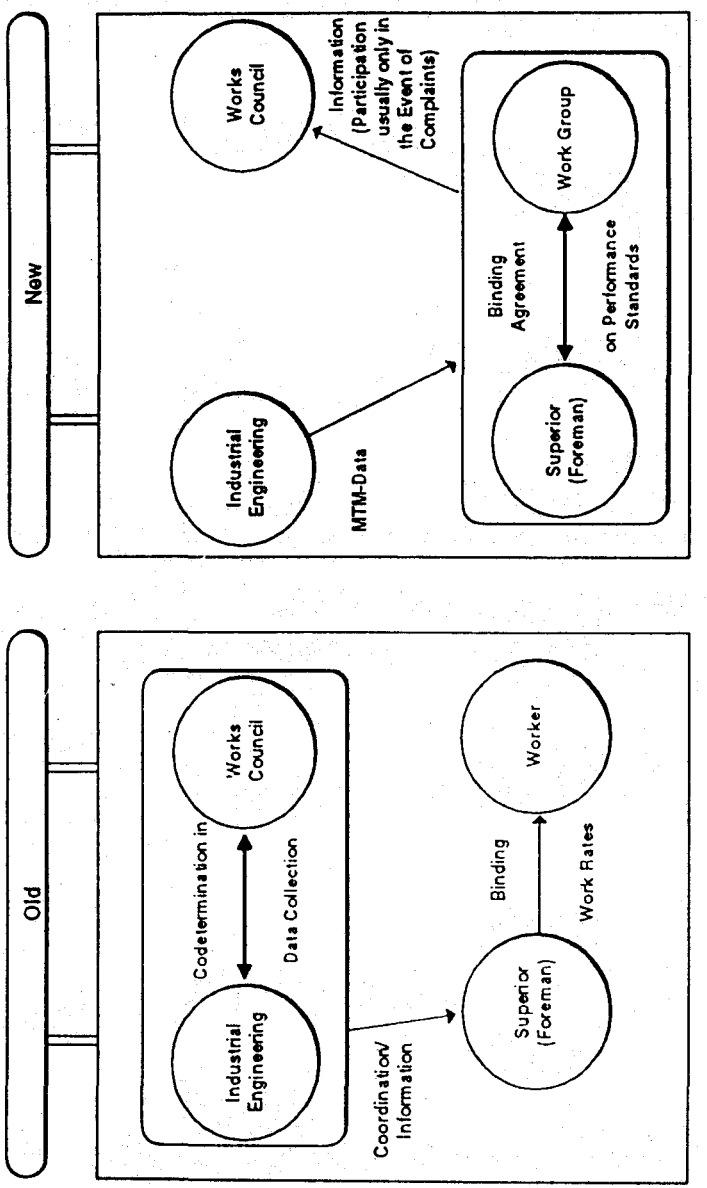

Figure 6. Procedure for Setting of Work Standards

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handicap of a rigid, not flexibly usable automation, is becoming presentable again. This is the one way technology could come back with a vengeance.

Overall, mechanization concepts are being slimmed down. Ergonomic advances appear renouncable and are therefore markedly reduced in planning of new assemblies (such as devices for avoiding over-head work, other ergonomic assembly improvements, moving platforms, lift systems etc.). Parallel assembly systems, important for innovative work design, are being abandoned (i.e.: no dock assembly, no flexible transport systems). Cost pressures and simpler utilization of work force, due to the breakdown of the labor market, facilitates a mechanization strategy in which human-resource-protecting measures are increasingly being waived.

Industrial Relations

During the reorganization of the German automobile industry, following the crisis of 1992/93, industrial relations were put to the test. Many of the rationalization methods currently employed are in danger of worsening working conditions and reducing employment. With the goal of maintaining a market position under globalized conditions of competition it must, on the one hand, be difficult for works councils to distance themselves from this process. But on the other hand, hardly any industry in Germany has such strong works councils and such well-unionized relations as the German automobile industry. In the entire automobile manufacturing industry, 70% of all employees are union members. Viewed only in relation to 'blue collar workers', the membership rate is 81% [IG-Metall-Board, 1994]. The large automobile groups such as Volkswagen and Mercedes-Benz have well-functioning closed shops with almost 100% organized blue collar staff; even the worst unionized relations at Opel [Eisenach] [62.1% blue collar staff] and BMW/Munich [71.3% blue collar staff] are far above the average of other industries.

In the past, all automobile works councils, even when setting company-related focal points, accepted far reaching co-management with their companies in the development and implementation of modernizing strategies. Especially in spreading ergonomic improvements in assembly work and in drawing up a new work policy, where the aspects of humane working conditions are taken into consideration, internal representation of interests played an important role.

The crisis and its consequences (employee lay-offs; the threat of plant closures where productivity has not risen sufficiently; the danger of adapting to world market requirements without considering workplace conditions, ergonomics and work intensity) greatly reduces the works councils'

room for maneuver. The greatest concern for employees is continued employment, in accordance with general labor market conditions. This explains why the works councils in plants and companies had to make so many concessions in recent years, just to ensure continued employment.

The restrictions imposed by Volkswagen were without a doubt the tightest. The slump in sales hit this company particularly hard. In 1993, management decided that a work force of 103,000 employees was 30,000 'too many on board'. This number of jobs were then slated for abolition, either through lay-offs or early retirement and contract annulment agreements. In this situation, IG Metall and Volkswagen management negotiated an 'agreement to ensure location and employment' in 1993. Volkswagen has its own collective bargaining agreement, so that IG Metall acted here as a partner to the company. The powerful Volkswagen works council also had a seat at the negotiating table. This agreement offered all employees job security for two years. Since then, the agreement has been renewed under the condition of more flexible working hours (the agreement is said to be unlimited, and cannot be terminated before 1997). The working week has been reduced from 35 to 28.7 hours. This time, however, in contrast to earlier cutbacks in working hours, the agreement on reduced hours is *without* wage compensation, which means employees have to get by on 16% less income annually.

Serious wage cutbacks have not been planned in other automobile companies to date; on the other hand, working conditions are growing significantly worse. In exchange for assurances of job security through to the year 2000, most Mercedes-Benz plants made agreements in 1996 that contain the following new regulations: working and plant operation hours have been extended (three-shift operation; Saturday as a regular workday, flexibility in individual working hours, reduction of recreation time); sick leave has been reduced by a targeted percentage through imposing tighter controls. On the positive side, works councils in some plants have managed to ensure that internal training for skilled workers is not abolished, and that trainees are taken on at the plant after concluding the apprenticeship.

Opel negotiated a similar agreement for the whole company in 1993. It is planned to be extended from the beginning of 1997 through 2000 to guarantee continued employment, although under stricter conditions (including waiver of overtime compensation and further reduction of sickness-related absenteeism).

It remains to be seen what demands the works councils will be faced with from the companies in the coming years. It can already be clearly seen in these years, however, that in spite of their organizational strength, the

trade unions in the German automobile industry cannot prevent a worsening of working conditions. The companies have by far the upper hand in forced concession bargaining, as the labor market offers no alternatives for employment.

Interim Summary

The strategic starting points described here contain the most important restructuring activities for more or less all German automobile manufacturers. On the one hand, there is still much going on in continuing processes of development and reorientation of emphases – dedicated to the principle of a 'learning organization'. On the other hand, companies have different priorities and individual conceptual variants.

It is impossible, at present, to make a reliable evaluation or to differentiate between a continuation or perfection of 'old' concepts and the development of 'new', progressive, intelligent concepts. K. Benz-Overhage, board member of IG Metall, oversimplifies the matter when she attempts to attribute the entire change in automobile manufacturing since 1992/93 to a common denominator, claiming that, in the end, recovery is being paid for with 'the familiar elements of increased work intensity and lowered costs through reductions in the work force'. Actually, the mix of old and new is typical, while the ratio of this mix is different in each company.

Company-specific differences are most clearly seen on the shop floor. Taylorization in modern guise has been introduced in some companies to solve the crisis, while other companies opt for innovative concepts that strive for economizing effects by utilizing the work capacity and creativity of the employees. These concepts can be classified as 'harder', 'smarter' *and* 'more humane' (cf. Schumann and Gerst, 1996). They use the locational advantages that Germany offers (availability of production intelligence; and the willingness of employees and their representatives to negotiate) and also take into account such factors (changing values with high professional demands) which at present seem less directly relevant for behavior, but, in the face of the tense conditions on the labor market (the fluctuation in all plants is at a low point), will regain significance sooner or later.

All together, there are many indicators that in Germany this 'new productivity and competitive coalition in the company' can only be achieved with innovative projects in employment policies (Streeck, 1996). This new coalition can, in the long run, guarantee market success by increasing the employees' identification with their own task and with the company. One thing is clear: the quality of work in the future of the German

automobile manufacturing industry will to a great extent depend on which of the two concepts for groupwork – modern Taylorism or structurally innovative concepts – wins the upper hand. Currently, these two different 'paths' of shop-floor restructuring are being tested. The overall social and political developments in Germany will be important in determining which path gets the tailwind.

Future Perspectives of German Car Manufacturing

In continuing and expanding the concepts of aggressive product and pricing strategies coupled with cost-minimizing process restructuring, developed in response to the crisis of 1992/93, the German automobile industry feels itself to be well equipped for the increasingly hard competition for its share of the world market. Continued expansion of the markets is still assumed to be a worldwide trend. In spite of increasing saturation of the motor vehicle market in the industrial nations of the triad, i.e., USA, Europe and Japan, growing motorization in developing and newly industrialized countries might cause a future rise in vehicle registrations. According to a relevant prognosis, 45 million new car registrations will be filed in the year 2005; thus an increase of 10 million cars is expected over the next ten years. The German automobile industry wants to be involved in meeting this growing demand. 'No company can afford to limit itself to the market potential of the industrialized countries, whose share of the worldwide automobile market is shrinking. The primary goal of globalization is opening up new markets' (B. Gottschalk, president of the German Automobile Industry Federation [VDA]).

Considering the fact that, among German automobile manufacturers (with respect to ownership and top management), Volkswagen is the only company with international production capacities, while BMW and Mercedes-Benz only moved toward internationalizing production in the last few years by opening plants in South Carolina and Alabama, respectively, a significant structural change is forecast in the next few years. Mercedes-Benz is aiming at an increase in foreign production from 5% (in 1996) to 25% in the year 2000, with corresponding increases in direct investment abroad (J. Hubbert, member of Mercedes-Benz production management board, 1996). The goal at Mercedes-Benz is to expand output from 600,000 (1996) to 1 million units. Other German car manufacturers have hardly less ambitious plans for their foreign activities; all companies have plans concerning their involvement abroad that are not limited to 'production', but include research and design functions as well. These activities will be

accompanied by a continuous expansion of cooperation (in various legal forms) with foreign car manufacturers and suppliers.

Thus German manufacturers have chosen to take a product offensive which is carried equally by the capacity for innovation in both development of automobile technology and production. Accordingly, they also see the 'central challenge up to the year 2000' in the 'optimization of production', in 'research and development', in the 'introduction of new products into the market' and in the 'establishment of plants and subsidiaries in other countries'.

In the coming years it will be apparent how these challenges are met. New, spectacular cars, such as the compacts from Mercedes-Benz, have been announced. In the Mercedes-Benz plant located in Rastatt, which will be the newest (restructured) assembly plant in Germany, where the new 'A-Class' will roll off the assembly line in Fall 1997, production planning remains in the continuity of the restructuring of the past few years: reduction of complexity in the automated body shop (single-purpose plant, no technical potential for model changes); new concept for paint application, so that sealing is no longer necessary; pure line assembly to replace the (old) mix of line and dock assembly; cycle times shortened from 2.5 (old) to 1.15 or 1.25 minutes; work cycles shortened from 10 to 25 minutes (old) to 2 to 3 minutes; autonomous centers; flat hierarchies; groupwork. The final decision does not appear to have been made as to whether Mercedes-Benz will stick to the 'structurally innovative' groupwork concept or will return to 'modernized Taylorism' in its new assembly structure. Short-term cost advantages and bench-marking constraints might justify such a development – contrary, of course, to the current agreements with the works councils.

The leap will be larger with the 'Smart', the micro compact from Mercedes-Benz, which was developed in cooperation with the 'Swatch' watch manufacturer. 'Smart' will be produced in Hambach (France), and is scheduled to be on the market in spring 1998. There is a lot of experimentation in the new assembly plant. 'Smart' is supposed to be the first automobile that utilizes 'entirely the modular construction' and 'modular production system' (Automobilproduktion 1996). With seven system suppliers and three logistics suppliers, production is realized with only 15% vertical integration and 4.5 hours final assembly time per car. The automobile is to be put together on an assembly line in six modules (floor group, roof, two side pieces, rear, and front end). Since the assembly plant is only used to put together the complete modules that are supplied, this should mean a radical change in both the type of work and the quantitative share

of traditional assembly work. Concrete plans for this change that would supply more detail are not yet available. This generation of cars, however, could indicate a fundamental change in assembly line work that would have to assist the trend toward automated final assembly to make a breakthrough. At present, however, this remains a matter of speculation.

Is the German Production Model to be Changed?

The globalization debate and the unsolved problem of increasing mass unemployment have acted as catalysts in the past few years in the criticism of the German production model. Many critics see the necessity of improving competitiveness by changing the model as a consequence of these problems. The argument is presented in terms of the 'high-quality, high-qualification, high-wage model' on the one hand, as followed by the German industry up to now and with which the industry currently has its problems, and the 'low-pay, low-qualification, competitive-pricing model' on the other hand, the success of which seems to be demonstrated by the American industry (cf. Kern and Schumann, 1996). The recommendation increasingly amounts to the concrete advice to change over to the American path. Instead of seeking comparative advantages by maintaining and developing existing strengths, the pressure is to simply adapt to a system of practice that is presented as an ideal of competitiveness. This is despite the fact that in the USA itself, doubts have been raised about the long-term advantage of this system.

Planning concepts show a reaction to the sharper focus that German companies are turning on global competition, as we clearly see in the example of the automobile industry. It is not only in the automobile industry that many companies are turning to the practice of determining targets through 'bench-marking'. It is typical that these instruments are all too often schematically connected to the 'low-pay, low-qualification, competitive-pricing model'. This introduces a series of problematic effects. Criteria for planning are reduced to easily operationalizable (quantitative) factors that restrict the perspective to short-term considerations and reduce investment goals to a minimum; a misdirected course of 'short-termism' and 'mainstreamism' is pre-programmed. Alternative approaches to 'modernized Taylorism' are systematically excluded. In particular, this course renounces further development and optimization of the company's own practices and aims exclusively at pay-offs that competitors in other countries achieve in an entirely different context.

Under the circumstances of a pure 'accounting oriented strategy' ('Verbetriebswirtschaftlichung'), this kind of logic is becoming increasingly widespread in many German companies and leads to backward steps in technology (especially concerning ergonomics and the development of flexible automation), to re-Taylorization and to dequalification of the work force. Protagonists of this approach argue that it is clear where this course is to lead: production intelligence is 'out'; a version of Taylorism, reformed to correct its inherent motivational deficit, is 'in'. The risk of losing the shop-floor oriented pillar of the German production model is considered to be acceptable, even desirable.

Thus, the climate for reform on the basis of the German production model is deteriorating. At the same time, there is a danger that the lesson will be forgotten that was learned in Germany in the 1980s, brought on by the crisis in Taylorist-Fordist thinking. There are definite advantages in utilizing production intelligence and in implementing innovative work organizations. This has been proven impressively in Germany with the example of 'structurally innovative groupwork' in the 1990s. Within the institutional framework in which the German industry operates, this type of policy has a locational advantage.

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