

LABOUR AND INNOVATION IN THE BRAZILIAN TRUCK INDUSTRY :

The Case of MBB Sao Bernardo and VW-C Resende

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“1914: forget the rest-for the first time the chassis moves past the workman. Soon, they reinvent the wheel as one hundred separate tasks” (John Goodby)

Truck producers are involved in a new South-American battle, with important and strategic movements taking place in Brazil. Imports remain at a low level, but newcomers are just arriving, and the old residents are changing. Strong efforts are driving the launching of new models, new commercial relationships are being established among producers, dealers and buyers, as well as new regulations concerning safety and environmental issues. And there are the new production systems, too. They relate to the new competitive environment and they are also part of multinational corporate decisions. Innovation and innovatory capabilities are features stressed by the top-management as decisive factors of competitiveness. And what about labour, in the middle of this battle? What are the workers' roles and spaces? How are they playing? And how are the companies approaching the question, considering restructuring processes and original organisational designs?

This paper will discuss questions relating labour and innovation, focusing on two different company structures within the Brazilian truck industry¹. They are raised and approached via an analysis of the connections among work organisation, factory management and industrial relations at the old Mercedes-Benz plant in Sao Bernardo and the new Volkswagen shared-factory in Resende.

At Mercedes-Benz, innovation processes and innovative capability based on workers participation are studied regarding three main changes in the labour process: manufacturing cells, teamwork and procedures for continuous improvements. At Volkswagen, the operation under “modular consortium” is also analysed.

¹ I would like to thank Comissao de Fabrica (Works Council) dos Trabalhadores of Mercedes-Benz, Mercedes-Benz do Brasil, Trade unions: Automotivo de Resende and Metalúrgicos do ABC (CUT), Metalúrgicos de Volta Redonda (Força Sindical) and Volkswagen Brasil for opening doors to this study. My special thanks to Ruy Quadros Carvalho and John Humphrey for their comments, to Maria Carla Corrochano and to my former colleagues at DIEESE and to Antje Oeter for you help. I have the support from Unicamp (Scientific and Technological Policy Department) and Capes.

Differentiated workers' roles will be related to the industrial relations dimension, and I intend to focus the types of discussion concerning innovation issues, the conflicts and pressure points inside the plants, and the new structural arrangements –at the firms level- that emerge from companies and unions.

After a short review of conceptual elements involved in the discussion, I present the contemporary context surrounding the Brazilian truck industry, the studied cases, and a final session with some conclusions and possible implications.

LABOUR AND INNOVATION : CONCEPTUAL REFERENCES AND QUESTIONS

My subject in this paper is the inter-relation between technological capability and labour regimes, within a changing environment where old and new factories from multinational companies coexist under greater competitive pressures.

My starting point is based on Quadros Carvalho's analysis of limited technological capability observed in Brazilian industry. He points out that "*[it] is to a great extent, conditioned by crystallised company's practices of work organisation and management, that do not favour the workers' integration to the process of technological learning and innovation. By making unfeasible the use of workers' contribution potential, these practices become obstacles to the acquisition of technological capability*" (1995:172).

"Technological capability" is related in this paper to the continuous innovatory capability of a company or productive system, and my special concern is about a company's capacity for changing or adapting production processes, more specifically, the capacities for developing and implementing organisational innovations. These capabilities are also related to knowledge, that "*may be embodied in hardware or software, in people and in institutionalised practices and procedures*" (Fransman, 1984:9).

Some contemporary literature has stressed "labour quality" as a systemic basis for innovatory capability, including education and skill levels,

labour autonomy in the production process, and the labour roles for organisational learning. There are important signs of a higher value concerning educational and professional backgrounds in the core workforce of dynamic enterprises.

On the other hand, the conflict between innovation processes and industrial labour is a historical feature. Class struggles are regarded as an important factor under technological trajectories (Rosenberg, 1976:108-25; OCDE, 1992:40). Nelson and Rosenberg (1993) also describe educational and training institutions, as well as the industrial relations patterns, as features influencing workers' attitudes towards technological change. In fact, Jürgens et al. (1993:370) argue that "*the factor 'industrial relations' proved to be an extraordinarily important influence*" on the way to redefine work and production systems in the automobile industry.

The controversial Japanese production methods brought new ingredients to the discussion. On the one hand it re-considers the workers' tacit knowledge, and on the other they are regarded as opposed to the German or Swedish co-determination models, with powerful trade-unions acting together with work-councils inside the factories. And coming from supposedly labour-friendly models to the factory's realities, different researchers have explained the complexity of contemporary industrial labour (Lewchuk & Robertson, 1997; Yucesan, 1998), through the analysis of changes and continuities.

The discussions about flexibility and organisational design are also useful to the proposed analysis (Salerno 1998a, 1998b). On the relation between technological change and regional development, issues as local growth, local institutions and de-industrialisation are raised in the collection of papers edited by Amin and Goddard (1986), while technological systems organised across multinational corporations are discussed by authors such as Dunning (1992:287-315).

The debates about the Contemporary Productive Restructuring pose old and new questions about the inter-relations between innovation and labour. Humphrey (1998:2) reminds us, when discussing Indian and Brazilian cases, that "*labour is the significant absence in business-oriented discussions of restructuring at the firm level. It is*

often ignored. If it is discussed at all, reports tend to be upbeat, stressing the advantages for workers and the positive attitudes of workers' representatives. (...) In Brazil labour questions are even more marginal to restructuring discussions. With few exceptions, managements have forced through change with or without union acquiescence. In spite of this, labour has an important impact on the implementation of restructuring programmes (...)".

In fact, the German automotive companies -like Mercedes and Volkswagen- can be included among the few exceptions in Brazil. The German trade unions and work-councils are acknowledged by their high level of involvement in debates and negotiations about factories' innovation; to some extent, German managers regard unions and work-councils as factors of stability (Jürgens et al. 1993, Lane 1994). But what kind of exception are they? And what happens when a new factory is opened? I will develop these points later.

New labour roles regarding innovation trajectories?

"Innovation" appears as a strong watchword in the contemporary industrial restructuring. Workers participation and commitment are considered and stressed by researchers, companies and even trade unions as an essential key to successful improvements concerning the building of innovatory capability. The message is quite clear, but what is happening inside the factories and why? Are the automotive giants really developing new strategies to improve their innovatory capability in Brazilian subsidiaries? Are they really moving to new forms of workers' involvement in order to innovate? Is this a clear issue at industrial relations forums, or does it remain silently absent? I intend to explore different cases in order to develop previous comments and interpretations about these main questions.

To some extent, industrial relations structures and practices at German automotive companies used to emulate their home experiences. But this feature has never been an automatic translation: free Brazilian works-councils are relatively young when compared to their German counterparts, and their "tradition" concerning the debate on

innovation processes is just beginning, considering a long-term perspective. Therefore, the current changing processes that happen in the Brazilian subsidiaries also relate to the large world picture regarding industrial competitiveness and the social organisation of production systems.

The following cases show us some clear contrasts to be considered. First of all, at Mercedes we have one typical "brownfield" situation: a massive, old factory, a strong trade-union presence, an organised and active Works Council. Volkswagen Resende shows the opposite picture: a "greenfield" site, a small, focused and "innovative" plant, a young workforce, a trade-union tradition centred in the steel industry, and no workplace representation.

Concerning the "innovation management" question, there are other elements to be explored, such as the previous experiences and skills acquired by workers, union leaders, managers and staff, as well the "cultures" within local subsidiaries and their dialogue within the multinational corporation. The contextual environment is the same, if one considers the national framework involving economics, politics and labour laws. The regional localisation adds a new element of contrast, and poses different internal pressures on each company.

Finally, it is important to discuss elements such as the diversity of concepts and attitudes regarding innovation processes and labour participation, within the management and within the trade-unions boards. The trade-union knowledge and communication, the evolution of power relationships, as well as the levels of trust between company and workers representatives are also features to be considered.

The following figure provides a simplified representation of the processes studied. Of course does the different environment (macro and local) not only pose constraints on the social actors. They can also be influenced by their strategies and interaction. And a place for "innovation" at the industrial relations level means also the inclusion of a work organisation and factory management systems under discussion.

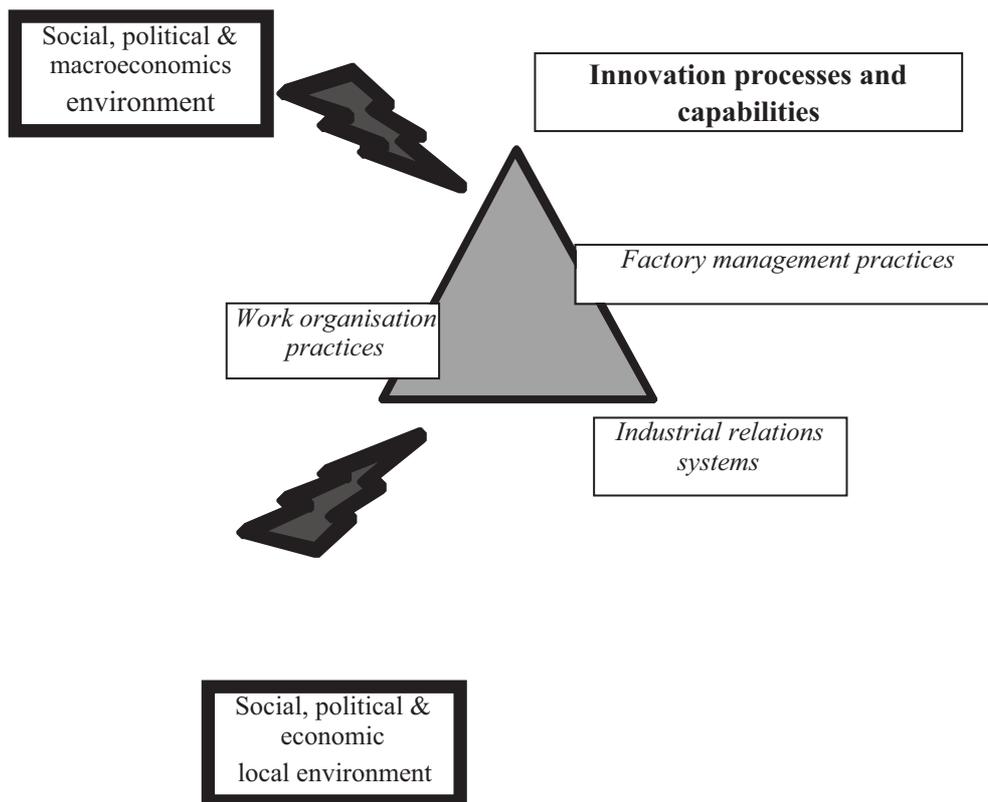


Figure 1. - *On the connections regarding labour and innovation.*

The different strategies, trajectories and dynamics of the connections between innovatory capability and the workers' roles can be analysed according to the inter-relations among the following four elements at local, (inter)national or global levels: *Innovation concepts and experiences*, *Production and work organisation*, *Factory management policies and Industrial relations systems*.

It is possible to compare different approaches as if we observed the textile inside the triangle. We could define some graduation beginning at the basic approach which is focused in learning-by-doing and learning-by-innovating practices, followed by approaches including: 1) the practices embodied in the work organisation; 2) the minimum system formed by the work organisation and specific factory management practices; 3) the systemic approach inter-relating the three supporting areas. After this basic framing, it is time to look at the general context.

THE NEW MAP OF THE BRAZILIAN TRUCK INDUSTRY¹

The truck business was not as much affected as the car manufacturers in the beginning of the 1990's, by the drastic and rapid process of trade liberalisation. Imports hardly achieved 5% of domestic sales (including Argentinean products), but production figures show a great variation during this decade, ranging from 30 to 70 thousand units per year. This was the result of continuing instability in the domestic economy.

¹ Truck industry is nowadays attracting more and more researchers in Brazil, most of them studying the new Volkswagen plant. Over the last years original reports were given at Gerpisa colloquiums, by Salerno & Zilbovicius (1996), and by Salerno et al. (1998). Arbix e Zilbovicius (1997), Marx et al (1997), Salerno (1998a), also published different papers and studies. Ferro (1998) analysed Mercedes and Volkswagen trucks' factories under the discussion of the "lean thinking" concept. On the international level, De Banville and Chanaron (1994) organised evaluations on the partnership networks centred at truck producers.

The crisis truly started some time before that, in the context that followed the Cruzado Plan in 1986. From that year to 1992, production (and sales) fell continually, from 84 to 32 thousand trucks assembled. If the companies could partially face the situation by increasing prices, this policy appeared to be dead after 1990, when the import shock started a new competitive era. The national automotive agreements in 1992/93 did not promote the production of commercial vehicles in the same way as in the car segment, and the persistently high interest rates in the past years has contributed to compose a difficult situation for truck buyers and manufacturers². Established companies had accelerated their restructuring initiatives, but increasing sales during 1994/95 and the good expectations of the future performance of Mercosur common market attracted new producers. They are trying to take a share of annual revenues estimated above US\$ 4 billion in 1997/98.

This is the general scenario in which truck producers have had to. Prices were cut, costs reduced and new vehicles launched. An increasing share of components has been coming from Argentinean plants. The transformation in the factories is well known. Changes have been made in order to achieve high levels of productivity and quality, and there have been pressures to accelerate innovation in products and processes. Two waves of unemployed workers had to leave the companies, the first one before 1993, the second one after 1995.

As the market leader, Mercedes-Benz got under pressure and reacted by trying to follow some steps made at German factories, introducing new forms of work organisation and new patterns of labour management at its Sao Bernardo plant. Similar changes were seen at Scania and Autolatina, but in Mercedes-Benz the distinctive feature is that they were introduced after negotiation with the trade union and the works-council, as will be seen below. Mercedes retains its leading position, both in the Brazilian and the Latin American market, with more than 30% of total sales in 1997 (the national sales figures in 1997 and 1998, considering all trucks, are provided in Table A, Appendix).

² A detailed analysis of the contemporary Brazilian scenario and the evolution of automotive industry is given by Quadros-Carvalho et al. (1997).

While Mercedes pursued a strategy in order to keep the leader's position, Volkswagen Brazil had to build a new truck factory in a record time, following its divorce from Ford (The VW truck division will be referred to as VW-C). The decision to establish a new production system in Resende (the modular consortium) based on their suppliers' workforces producing the VW trucks, was a new message for the other companies, that accelerated their restructuring processes.

In spite of the plant's impact among the truck producers, VW itself shows worrying signals concerning the productive overcapacity, estimated by its president Herbert Demel as 20% from 1999 to 2002 in the Brazilian industry. Export strategies and fierce competition are his prospects for the years coming³. Volkswagen had two difficult years in 1997/98, with its new productive operations in Resende starting in tough times. They recovered a small bit of the market share, but are still far away from the former 20%-level which they used to have before divorcing from Ford.

Strategic movements among Brazilian established subsidiaries involve also the Swedish companies, Scania and Volvo. As happening in global picture, possibilities of mergers are in the business press, as well as circulating among manufacturers' directors and trade-unions leaderships. Volvo has also made new investments in Brazil, but a possible joint-venture between VW-C and Scania would benefit both companies considering their different product ranges: Scania is still the leader in heavy trucks, where VW-C has a weak point, besides launching a few models with 24 and 35 ton capacities.

The newcomers arrival to new greenfields

The Brazilian trucks industry was shaken up in the 90s by VW-C's announcement of the new Resende plant, with a "modular consortium" production system. After a long period, it was the first movement towards a new regional composition of Brazilian trucks manufacturing. The Greater Sao Paulo had lost VW-C production and employment shares, when operations closed at the old Chrysler plant in Sao Bernardo; and after the "Autolatina divorce" in 1995, VW withdrew its truck production from Ford Ipiranga factory.

³ Cf. Queiroz (1998:10), translated from Portuguese.

At present, new companies are trying to establish production sites in Latin America. One of the more important arrivals is that of Iveco, the Fiat/Ford trucks company; Iveco is already producing vans and light trucks, but its plans include to import commercial vehicles to cover other market segments, and to internalise their production in the following years. The chosen site was the “greenfield” city of Sete Lagoas, not far from Betim, the Fiat’s headquarters (in Minas Gerais state).

Navistar returns to Brazil, after being one of the pioneers as International Harvester. The North-Americans decision was to invest in a former Agrale’s plant, in Caxias do Sul (Rio Grande do Sul state), but they also have plans to expand installed capacity. Other companies are selling trucks made in Argentina. (*current and future truck production sites in Brazil are showed at Table B, Appendix*).

Competitive pressures are increasing, and to conquest or keep a share of the truck markets became a harder task, day by day. Costs, performance and innovation are key elements to face the challenge. As the leading company, Mercedes is a target and every competitor talks about “taking a bit” from the star firm. As the leading company, Mercedes tries to use its productive, financial and commercial powers to face their new environment, and to have strong products in the three different truck segments is regarded as an important strategy.

Until now, Mercedes has collected their fruits from restructuring, and the company probably will remain aggressive for the years coming. On the other hand, VW-C has still to show that its factory is a great success, as it lost part of its market-share in the two initial operative years of Resende. Contrasting to the Mercedes case, VW-C movements are mainly constrained by the agreement with its suppliers inside the modular consortium, or “partners”, as they are called. We surely will have the opportunity to see if VW-C has speed and precision to re-arrange operations.

NEW AND OLD FACTORIES : TWO CASE STUDIES

The German industrial giants, Mercedes-Benz and Volkswagen, are among the biggest firms in Brazil. VW is the biggest “Brazilian” company according to operational income criteria, and both have also been among the biggest employers. Their movements are followed with great interest by national media and government at all levels, as well as the research community. I will describe the main features of restructuring and implementing processes at respective plants, as the basis for an analysis of the companies trajectories concerning to labour and innovation.

“Home restructuring” in a traditional location: change at Mercedes

Mercedes-Benz is the symbol of the second automotive phase in Brazil, starting in the 50’s, and it is an icon in the truck and bus business. It produced its first truck⁴ in 1956, has led the market since then, and has assembled more than 1.2 million commercial vehicles up to the present. As it was commented before, the macroeconomic changes in the 1990 were one main reason to the company’s acceleration of its restructuring process, as a way to face the new competitive scenario.

The recession in the period 89/92 also became a cause for Mercedes renewal. Thousands of jobs were cut off, and the restart came with a new balance of power between company and the strong Sao Bernardo Metalworkers Union (renamed as ABC Metalworkers Union since 1993). But even with no great deal for the truck business, there were also the determinant consequences from the tripartite bargaining on the “Automotive Chamber” assembled in 1991, where the leaders from the companies and workers sides were two Mercedes men⁵.

⁴ MBB and Ford use to dispute about whom produced the “first Brazilian truck”. Ford had assembled CKD trucks from 1921 in São Paulo, FNM was converted to make commercial vehicles after WWII, and Mercedes was the first one in the “modern phase”, in 1956.

⁵ I refer to Luiz Scheuer, then president of Anfavea (automotive association) and still MBB director for institutional and industrial relations affairs, and to Vicente Paulo da Silva, the ABC Metalworkers’ president and now leading the big Brazilian workers’ confederation (CUT).

A discussion of productive restructuring under collective bargaining between 1992 and 1996 was presented to the Gerpisa colloquium two years ago (Bresciani, 1997), but it's important to recall some of its main features. Mercedes promoted 5 big changes in its productive system, under the so-called "Fábrica 2000" project (Factory 2000) that aimed to reorganise a plant almost 40 years old.

These were:

- segmentation of productive operations into 5 main structures (Final Assembly, Cabs Assembly, Engines, Axles and Buses Assembly, the latest one centred in Campinas factory);
- a decentralised logistics system;
- introduction of manufacturing cells within machining activities;
- spread of "kaizen" philosophy and new procedures as a tool to promote change and continuous improvement in local productive areas;
- introduction of teamwork concept within the four Sao Bernardo factory productive segments.

More recently, Mercedes-Benz introduced TQC procedures as a new step on its production and innovation policies (without formal negotiation), and it has been looking especially at the PCDA cycle as a problem-solving method.

With the exception of the first topic (company segmentation), the changes were introduced under agreements with the trade union, ranging from the simplest ones (basic rules about logistic system, production cells and kaizen) to the complex agreement on teamwork. It's important to stress the presence of a new bargaining team composition from Mercedes-Benz side: the traditional employment relations group (composed of industrial relations and "human resources" managers) was joined by the production segments' managers, and the agreements were backed by the Technical Director. From the Union's side, the internal conflicts about signing an agreement on company's restructuring were won by the side backing an active position.

Measures related to changes in the labour management were also introduced. The new jobs and wages classification, the levelling of wages at

new teams and cells, higher training time for the workers and the remaining hierarchical levels, and a pioneer agreement on the new "results sharing" national regulation should be highlighted.

These changes put also new emphasis on the relevance of the "innovative capability" issue. The production cells meant also new documentation tasks, especially reporting the problems during manufacturing processes. "Kaizen" philosophy also meant a new way to solve questions and introduced a new practice of changing workplaces. But there was considerable criticism and even a boycott against the hierarchical management of the change process. Just after a strike aimed on the "kaizen" process that was happening at one specific workplace, the issue was discussed between Mercedes and the workers' representation.

The formal agreements hadn't gone further: market crisis in 1995 and internal fights in the company's side led to 1,600 workers fired. Trust went some levels down, also with disputes on expected new steps relating to job and wages classification.

Economic effects from government measures in late 1995 and the Volkswagen's announcement of the new Resende factory with a new competitive performance, became big issues for Mercedes-Benz, and cost control was stressed. In order to keep jobs in the region, the ABC Union also concentrated on macroeconomics, sectoral and regional policies. On the other hand, Mercedes-Benz had no alternative to its factory reshaping, for financial and regional reasons. Despite the job losses since the 80's, but specially 1990, no big company would be allowed to leave ABC region without a great reaction from workers, politicians and the civil society⁶. Nowadays, the whole ABC region tries to reorganise itself under new regional policies, aiming to prevent greater de-industrialisation, as well as to act as a regional economic power.

Mercedes agreements on productive restructuring became to some extent an isolated case: other competitors did promote related changes with small or without any regard to unions' or works council participation. Despite this environment, even ABC Union and Works Council

⁶ As showed at the rallies on Ford's gates, after the company announced massive dismissals, late 1998.

representatives realised, as the company did, that not only was their process almost unique, where the negotiated restructuring remains –but not as formal as before, mixing consent, conflicts and compromises.

It means a different environment, too. There are old and new struggles over flexible time, safety measures and workload. There are also workers discussing about supporting tools to improve their working conditions, there are young engineers promoting informal talking at the workplaces, as well direct workers going to German plants and German managers visiting the Brazilian plant. Finally, one can see various initiatives around the different factory segments, trying to redefine the conditions of workers inputs to innovative experiences⁷. It's also possible to notice another still small change concerning the workers role and the technological learning, given by the contact between workers and buyers under the “Open Factory” programme, with an information exchange about the products and the processes⁸.

The “pitch changing” strategy of VW-C: a brave new world?

VW-C, the trucks arm of Volkswagen South America, could be compared with a new and proud team, that had succeeded to some extent surviving and conquering market share, but without a home ground for almost 10 years. And one have to consider VW-C culture as still a mix, where Chrysler traditions from the 70's remain in its high hierarchy and its engineering structures, meeting the high-quality approach from VW side⁹.

The “modular consortium” system of production adds more and more ingredients to this cauldron. There are different suppliers inside the

factory, most of them with strong industrial traditions in their own businesses. There are entire new workers' teams, assembling, painting and welding. But there also exists the intermediate structures, usually transferred from the former Autolatina operations at Ford Ipiranga truck factory, or hired from strong companies in industrialised regions. And last but not least, the local Metalworkers' Union, or unions to be accurate, as the two main national confederations are contesting to represent the VW-C workers.

I believe that “modular consortium” operative features were already well explained at previous Gerpisa colloquiums, so I will not go over this. There is just one basic point, about the work nature, to be stressed again. The main portion of work activities is done at the assembly lines (chassis, engines and cabs' lines), and so what the workers usually do, of course, is about inserting, adjusting and uniting components¹⁰. The assembly lines are new, and so there are different and modern types of tools and instruments to support the work.

There are also two different kinds of work: one is concerned to the painting. Here we also have modern installations (from German company Eisenmann) and the higher automation level. A good number of workers just operates panels to manage the process, but there is also manual painting, and female workers are especially present at this module. Finally, the third type is welding and polishing at the cabs' production. These are the hardest jobs, and the environment is a different world, compared to the cleanest assembly and painting zones.

So, the meaning of “modular consortium” from the point-of-view of production process designs and the performed work is the line: assembly lines, painting line and welding line. There is a clear job division, and defined modules' frontiers (but some times disputed).

A basic difference, with only two years operating Resende site, could be seen at the cab's assembly line, managed by VDO company (from the German Manesmann group). Being the main

⁷ The Axles area is the most concerned with a strategy of workers' involvement based also on activities off the job & in-the-factory and “without” direct relation, as quality-of-life debates and cinema exhibitions.

⁸ It is linked also to another face of cultural change at the shop-floor areas; it's more unlikely that one could see nowadays workers celebrating goals at the assembly line, while listening a football game re-transmitted by the factory radio circuit. On the other hand, the “Open Factory” program does not affect the night shift.

⁹ The first “VW” truck assembled in Brazil was a hybrid from a Chrysler chassis (truly an International Harvester heritage) and a VW-MAN cab, in 1981.

¹⁰ As noticed also by Ferro, who asked, “*what is the systemic advantage of modular consortium, if the final assembly process is essentially the same, just changing some responsibilities?*” (1998:381).

“populated” module, VDO had divided its workers and staff (the most complex support team among the suppliers) in so-called “cells”, aiming to solve quality problems. There is a link with the Audit process that evaluates each truck features and punishes suppliers for failures, and VDO shares with its workers the solution-finding process. The “cells” are assigned with specific questions, and have the responsibility to propose and implement changes, through meetings and a well-documented panel showing problems and decisions.

The latest ones are also converted and registered as a new process standard¹¹.

Labour management is a difficult issue at VWC. A complex equation faced by different companies under the same roof. The basic solutions were also symbolic signs: the same structure for jobs and wages classification, with just a few different wages¹²; just one uniform wearing the productive workers¹³, with the VW or “partner” logo and the “modular consortium” logo; just one uniform for the administrative people (big bosses included); just one restaurant for everybody¹⁴; the same time schedule.

Unlike Mercedes bounds to ABC region exerting influence on factory restructuring, Volkswagen had been just honoured with glory and the warm authorities welcome, from Resende city, Rio de Janeiro government, and last but not least, even the republic President. But there was almost no previous discussion at all about the workers’ role at the “modular consortium”, as 20 thousand new jobs would be created. Two years later and 1,313 workers inside the plant -considering VW,

partners and outsource suppliers- the other side is speaking loud¹⁵.

Salerno (1998:323) had already stressed some risks and challenges embodied on VW consortium, and I emphasise here those linked to the innovative capability. About the technological risks, he asks if “*will it be possible for VW to keep its competence in the trucks’ business, when it is outside of the daily production process? In the long term, will it be possible to combine product innovation, enterprise growth and accumulation process without an anchor in productive process?*” And he goes further, remembering that VW has still “*to define effective workers involvement policies*”, for a workforce that is not employed by itself, and that is paid well below the average wages at the VW car plants¹⁶.

The innovation questions therefore continue. Hierarchical, vertical communication appears as the basic feature. With the exception of the VDO cab module, workers’ inputs are not transmitted directly by them and at the productive process, they are rather dependent on module managers and supervisors’ discretionary willingness to let them go through. The distance between engineering and production workers seems to be another contrasting feature.

On the other hand, these first 2 years were defined by the challenge to operate the new plant. As stressed in the beginning of 1998 by the president of VW Trucks Dealers Association, “*now Resende is in conditions to supply our needs*”, pointing to the operational troubles that had resulted in a low production volume. Renato Mastrobuono, product development director, observed also that “*in 1997 the production rhythm was undermined by the attempt of to start production at a entirely new factory*¹⁷ and, at the

¹¹ There was no sign of equal experiences among the other “partners”. I could search lots of different cell-sheets, and I’ve checked the workers’ participation: their reports were coherent with the quality supervisor interviewed.

¹² Of course some “partners” use not to obey completely and there are some usual Brazilian “jeitinhos” (different ways, small tricks) to escape from the rules. At some VW staff groups, it resulted two different structures, one for people transferred from Sao Paulo/Sao Bernardo, and an inferior one people hired locally.

¹³ After 2 years, the Delga workers (cabs welders an polishers) wear different clothes are the most blamed by poor performance.

¹⁴ Besides a reported resistance from VW staff to share the same eating place with direct productive workers. The result is that the restaurant is clear divided with invisible borders.

¹⁵ According to VW-C view, there was a misunderstanding or a planned over-evaluation of the numbers coming from local authorities.

¹⁶ According to VW figures, hourly labour costs at Resende plant are 48% of those registered at Anchieta and Taubate car plants (average levels).

¹⁷ It’s interesting to see how VW uses the new factory as a marketing tool. One of its last written advertisement says: “all this variety only could be made at one of the more modern factories around the world: Resende. There, surely all is tested in order that each truck leaves the assembly line ready to carry mainly the guarantee of the trade-mark Volkswagen”.

*same time, to make seven new product launches*¹⁸. I will follow it next session.

INNOVATION MANAGEMENT AND INDUSTRIAL RELATIONS: FEATURES, CONNECTIONS AND QUESTIONS FROM BRAZILIAN TRUCK COMPANIES

Innovation is a contemporary industrial issue, and the truck industry follows this pattern. Unlike the cars industry, truck producers in Brazil are not facing external competition with the same intensity, as imports are still at a low level. In the global context, the big trucks' corporations are not fighting against the Japanese manufacturers in Europe or North America, to the same extent as they are in the passenger vehicles segments. In fact, the main Japanese companies have commercial links with Western firms, or have become a target for take-overs, like Nissan Diesel

But there is some extension of the Japanese production management impact on car industry -in most of the cases an automotive company makes cars and trucks. On the other hand, innovation is an endogenous process within the main European and North American producers, as economic and technological trends show a concentration picture. And the truck manufacturers from Germany and Sweden have also had their distinguished production management approaches, with work organisation features and industrial relations systems designed and developed to face economic and social pressures.

Therefore, innovation is an essential word of command in contemporary capitalism, and the Brazilian subsidiary of Mercedes-Benz has stressed this point, especially since the beginning of the 90's, both inside its internal environment as well as to the customers and general public.

To keep the leadership in the Brazilian market will be possible through *"obtaining clear advantages, with innovation and world class quality, kept through continuous improvement actions"*, as well as with a whole new products

¹⁸ Cf. Via Acav, n.7, Jan. 1998. In fact, production levels during 1997/1998 stayed just around 40 daily units. The VW-C dealers' magazine is plenty of reports about the overcome of operational problems that resulted in a shortage of products during 1997.

portfolio up to 2003, according to its president Ben van Schaik¹⁹. The company will be also responsible for the development of a new light truck, to be globally offered in 2001: this is the so-called LTC project.

Unlike Mercedes-Benz "pro-active" innovation approach regarding products and processes, VW-C seems to be under external and internal pressure, from customers, analysts and its own trucks' staff. Its truck cabs (in fact, just one cab) have not changed for a long time, being identified with falling sales and as a production troublemaker. Even if VWC decides to develop new cabs, it will probably take two years to have them assembled in its trucks.

Following these remarks, Table 1 is presented (next pages) summarising the main features regarding innovation management and industrial relations in the studied companies, in order to help the development of initial conclusions and emerging questions, that follow in the next sessions.

Organisational and managerial changes: consent, conflicts and compromises

A starting point to discuss when analysing innovation management and labour relations relates to the dynamics of organisational and managerial changes. The Mercedes case study is about restructuring, the Volkswagen case is about implementing new production concepts in a new factory. At Mercedes, with an experienced and unionised workforce, the change process had to be done with the workers; at VW there were no workers at all. But why is the Mercedes case also different from the trajectories observed in other factories in the same region?

First of all, union leaders and members of works council at *Mercedes Sao Bernardo* had since the 80s developed a strong concept about the representation of workers' interests, that considered a complex agenda. This development reflects different influences -especially from trade-unions, work-councils and opposition groups at German plants, and it meant an endogenous dynamic that become effective in the 1990s. To the company, to introduce change with the participation of workers

¹⁹ Cf. Queiroz (1998:10), translated from Portuguese.

meant to establish some degree of compromise about the process innovations.

The consent was built especially around the idea of the “factory crisis”, and the compromises were initially simple, regarding information, consultation and monitoring of production cells and kaizen. The declared objectives were a “competitiveness increasing” and the “workers’ satisfaction”. Conflicts were always present, from the beginning of the negotiated process up to the current days. To have the formal agreement ruling “kaizen” (continuous improvement procedures), workers had to promote a localised strike. Cells monitoring had constantly resulted in complain about the work-load and local layout.

Teamwork was the most complex formal agreement. Discussions and observation of German plants were used by both sides to define conceptual proposals. Competitiveness was stressed, as well as workers’ autonomy. Elected spokespersons with limited terms, rules on teams size and training were established among other measures. A clear status for the spokespersons was defined, as well the teams right to meet without the hierarchic “leader”.

It is also important to report that a German pattern often observed in Mercedes teams was not included in the Brazilian agreement: that is the explicit orientation to the teams addressing cost reduction proposals as result of their meetings. In a differentiated way, the “continuous improvement” topic established that the workers would not be forced to produce “improvements” or to offer “new ideas”, and that any recommended measure made by the workers could be rejected by the company with formal justification.

Workers’ autonomy was acknowledged, but new conflicts also emerged. As the teams advanced, the workers’ and the Works Council claimed that their suggestions were dropped for cost reasons. On the other side, the company put teams under hierarchical “kaizen” procedures. The outcome was another conflict solved by the decision that in the case of established teams, only their workers would define the proposals for workplaces and processes changes.

Just after the beginning of the implementation, mass dismissals were the company’s answer to falling sales. Initially, workers evaluations were positive, as reported by the company and the trade

union, in spite of the lack of trust among the actors. Training was another discussed issue, not just as a reason of criticism concerning “behavioural” courses, but also addressing managerial qualification.

Nowadays, the agreement does not exist legally, but its guidelines are still observed at the old and new teams. From the perspective of industrial relations, the new top conflicts are about innovation processes themselves and about safety regulations. On the first topic, I can include the sabotage of a modern axle line, on the basis that it was a unilateral change. The second one re-emerged during the last months as a result of several accidents inside the factory. A new bargain process was designed to change the work organisation according to new safety recommendations, and to review the teamwork concept and procedures.

Workers’ evaluations are not so bright as they were before. Table 2 shows their last available answers on different topics concerning teamwork.

Three years after the programme started, the figures show that the company is far from getting the “consent” it desires. If I look at the first numeric column, the general conclusion is that a positive view remained higher than the negative experiences or perceptions, with the exception of “work-load”. But if we focus on the right column, that considers also the “no-change-at-all” opinions, the picture is different.

There were divided evaluations on “interest at work” and on “decision power”, a good perception about the action and relationship with the elected spokesman, and a clearly negative opinion about the increase of work tasks. Finally, there were no changes or negative views concerning the integration with team members, the new relationship with the direct leader, working conditions, and “satisfaction” at work.

It’s true that the company is getting a higher level of workers’ commitment with production continuity²⁰ and innovatory efforts (and keeping its market leadership), but the workers’ pressure on the “work organisation” dimension still remains. It surely can imply a further review of teamwork practices and procedures, at least in some specific areas, if the company follows the declared

²⁰ As highlighted by Humphrey (1998:8).

commitment with the workers' autonomy, working conditions and innovatory efforts. Otherwise, it will become an increasing conflictive issue if the workers are able to increase the pressure on the company. In general terms, the experience has shown that an agenda including innovation issues

makes different conflicts clearer, and transforms the labour management pace: there is a mix of daily monitoring, medium term restructuring and debates on the long term transformation of the factory.

Table 1. - *Innovation and labour at truck companies in Brazil*

Feature/Structure	MBB Sao Bernardo	VW-C Resende
Innovation	Company: among major "assets", targeting leadership Union/WC: way to face competitive pressures, but conflicting with jobs' protection	Company/MC: declared as a basis for modular consortium (MC); related to "flexibility", as the ability to produce different models Union: regards MC as "a good system..."
Work organisation and production system	Changes: escalating from 1993 (Factory 2000 project; new logistic system, production cells, continuous improvements program ("kaizen"), teamwork, rationalisation (parts flows, simple supports etc), TQM procedures. Old "suggestion plan" being "abandoned". "Clean" final-assembly lines, underground sub-assembly lines; updated assembly lines for new axles and engines, new axles (trucks, A-class), electronics engines, new trucks' models, Remains: Press shop, Semi-Automated paint-shop and body-shop Engineering: Direct presence at shop-floor, In touch with workers Buyers: Visits to the plant ("Open Factory")	Implementation: Modular assembly, Body-shop, Semi-automated Paint-shop; New trucks' models launched in 1998; "Improvement cells" (VDO cabs' module), Corporate "teams" system to be adopted and adapted from 1999. VW-C Manufacturing, Engineering and Quality: Intermediate intervention by modules' managers and supervisors Buyers: Fleet visitors
Factory management	New system supporting new organisation... a) escalating from 1993-94, with reduced hierarchic levels, efforts towards a new shop-management style with old-management people, New wage and jobs classifications, Increased wages, levelled wages for new teams, Jobs' stability in 1994; b) followed by huge number of dismissals (1995/96), lower entry wages, weekly working time reduced from 44 to 42 hours but increase in overtime, increase in accidents and lost hours (with 5 deaths); c) higher educational and training efforts; "behavioural training" for shop-floor and managerial levels; results-sharing system linked with collective performance; d) re-stabilisation of employment level at 10,000 jobs (97/98), Crisis Management Program presented to workers (1999) e) diversity of "participatory initiatives" amongst productive segments.	"stratified" system: a) Partners' direct workers: one flat structure for wages and job classification (3 levels), one benefits' policy, reduced levels compared with other VW plants. Higher educational level requests (8-years), search for people with technical formation. Unskilled workers with lower educational background hired for some partners (specially body-shop); b) controversial on "internal opportunities": applause and complains about VW-C approach to hire best partners' workers as it's Manufacturing support team; c) VW-C support and technical areas: two-levels structure, with lower wages for locally hired people; d) additional financial incentives for Support people moving from ABC region; e) Training: controversial issue amongst VW and modules' managers. Opposed complains about "no commitment"; f) higher average week working-time (44 hours), and huge work-time flexibility (36 to 49 hours).

Table 1. - *Innovation and labour at truck companies in Brazil*

(continuation...)

Feature	MBB Sao Bernardo	VW-C Resende
Industrial relations	<p>general background: strong trade-union (ABC Metalworkers), Works Council formally established at the factory in 1985, acting as Union internal arm; international connections with German unions and oppositions</p> <p>and contemporary events:</p> <p>a) Key-leaders from Mercedes pushing companies' association and trade-unions at Automotive Chamber national bargaining (1991/94);</p> <p>b) Factory 2000 discussed with trade-union and Works Council, joint visits to German plants</p> <p>c) formal agreements on productive restructuring; Organisational change and innovatory capability issues assessed; company bargaining team joining IR, HRM and Production managers; union bargaining strategy discussed with German unions, internal staff and university support</p> <p>d) "kaizen" agreement to control continuous improvement process established after strike;</p> <p>d) Conflict over mass dismissals (1995), people from new teams also fired, controversy about new wages' classification;</p> <p>f) general approval on new teams' features by workers, stressing "autonomy"</p> <p>g) general critics on new cells features (poor layouts and working conditions)</p> <p>h) teams acquire the right to manage their continuous improvement processes</p> <p>i) sabotage of new axles assembly line (conflict over unilateral innovation)</p>	<p>general background: traditional trade-union at steel industry, before with CUT and now under Força Sindical affiliation; no experience at automotive industry, fragile connections with VW union leaders, bargaining structures by "MC steering committee" and Trade-union with workers' informal committee"</p> <p>and contemporary events:</p> <p>a) Distance from ABC region regarded as an advantage for some VW managers;</p> <p>b) main disputes over "Hours Bank" management, and on assemblers' wages</p> <p>c) internal conflicts on IR and HRM policies amongst VW-C and the partners</p> <p>d) potential conflict about representation contest between biggest Brazilian confederations (CUT and Força Sindical)</p> <p>d) Works Council to be implemented under VW agreement on Mercosur representation system; potential conflict with partners</p>
General concept on innovatory capability "labour-based"	<p>Company: stress direct workers' involvement at innovatory efforts; stress continuous information and negotiation</p> <p>Union/WC: stress workers' autonomy and process knowledge; stress regulation by formal agreements</p>	<p>Company: declares workers' high educational level and commitment to flexibility</p> <p>MC: one partner (VDO) stress workers' involvement to solve quality problems and to define processes changes</p> <p>Union: remote points on quality and commitment</p>

Elaboration: the author

Notes: MC = modular consortium, WC = works council.

Table 2. - *MERCEDES-BENZ: Teamwork evaluation given by the workers*

Average numbers considering 8 manufacturing areas (March 1998, values in %)

ISSUE	Better minus Worse ("good" minus "bad")	Better minus No-change&Worse ("good" minus "not-good")
Relationship with spokesperson (better = good)	+77.9	+58.3
Spokesperson (b= really acts as spokesperson)	+57.5	+57.5
Previous relationship with direct chief (b = "good")	+60.8	+26.9
Interest at work (b = "higher")	+51.0	+4.0
Decision power at workplace (b = "higher")	+45.4	0
satisfaction at work (b = "increased")	+44.0	-8.0
Working conditions (b = "improved")	+37.7	-9.8
New relationship with direct leader (b= "improved")	+40.8	-12.2
Integration with work-mates (b = "higher")	+35,5	-16.6
Work-load (b = "decreased")	-62.3	-92.1

Source: Mercedes-Benz Brazil.

Elaboration: the author. At *Volkswagen Resende*, the process is quite different. Operation itself was, during 1997 and 1998, a second step to acquire knowledge, and to make adaptations and changes. It followed the first one, during 1996, when VW assembled units in a Resende's pilot factory, during the building of the new plant. The current phase, however, is still based in a "learning-by-doing" approach¹, strongly controlled by the management at VW structures and the modular consortium partners. In a different way, it was also not based in institutionalised, embodied and structured practices to problems solving, with the already commented exception of VDO cabs' construction, in the recent months according its own managers. There is no

strong commitment with an innovative approach supported by labour management practices and the industrial relations system.

The flat wages/jobs structure, which could be viewed as an advantage to promote equality, is not well regarded for some of the skilled and educated workers. VW practice to hire the best partners' workers and staff when it's needed is also regarded as "cannibalisation" for some of the managers. The training system is criticised because there is lack of investment and co-ordination, or because partners' are not committed to VW's policy, depending on the people interviewed.

Innovatory capability and labour roles

What about the innovatory capability as a labour question? The pictures are also very different, and I summarise them in Table 3, that is followed by some highlights on the configurations and dynamics of both cases...

¹ A similar comment is made by Chanaron (1999:11) on MMC factory that assembles Smart in France, high level of quality problems: "*Mais l'usine en est encore à la phase de montée en puissance, c'est-à-dire d'apprentissage technique et organisationnel. On peut sans doute attribuer ce niveau élevé de défauts à la jeunesse de l'expérience*".

In general lines, I emphasise that:

- Mercedes-Benz and workers' representations approach at Sao Bernardo factory has been transformed from a partial one (based on informal inputs, as well as in suggestion plans not connected to work organisation), to a systemic approach based in redesigning and integrating work organisation, management of labour and the industrial relations systems.
- The moving from basic/partial to systemic approaches means the need of structural and institutional changes at company and union sides; it shall be also a consequence of previous and parallel structural/institutional changes.
- Company's strategy has a strong message on external competitive pressures. Managerial and workers' training (to implement teams, especially) approaches "behavioural patterns" and attitudes changes, as well as technical development. This is one of the spaces where one can observe the struggle around the "company culture" and an ideological reshaping. Another one is given by the policy of workers and managers dismissals or replacements, from 1995 to 1997: 50% of direct workers were fired, and 30% of management/staff areas. On the other hand, the trade union was able to keep its high affiliation rates².
- The involvement of workers' institutions (Union and Works Council) at the level of firm's innovatory strategies is, at the same time: (a) based on a broad concept about interests' representation, including work organisation and therefore going through the management of innovation within the firm; (b) based on their representation power among the direct workers; (c) differentiated from some features observed at Mercedes plants in Germany³, six years ago, where workers' projects for "continuous improvement" were also being driven by a clear "costs reduction" priority; (d) constrained by the defensive macro and micro-economic environments, by the workers' demand to "keep the jobs", and by the incitement power that company uses to obtain workers "Cupertino" for innovatory efforts (or to reduce their resistance); (e) constrained by being a solitary trajectory within Brazilian trucks' (or automotive) industry.
- After 5 years (and with agreements not formally re-discussed) some of the limits placed by negotiation are still observed, as well the conflict about rhythm pressure, workplace safety and the criteria for organisational changes.
- Even after the mass dismissals that undermined the bargaining process in 1995, strongly reducing the level of trust between company and Union/WC, the workers' representatives did not leave a free ground for the company, and resumed the discussions on the plant restructuring some months ahead. At the same time, workers demonstrated against some measures understood as unilateral innovations. One example was the sabotage of the new axles' assembly line, early 1998.
- The involvement of workers representatives is meaning, up to the present: (a) a different point-of-view on the generation and deployment of innovatory capability; (b) a new question about communication among workers, representations and company; (c) a new question about trust and power between the company and the workers.

In *Resende*, Volta Redonda Union representative has easy access to the factory, and can be seen often. There is no formal workplace representation, but for the main negotiations a small and informal workers representation acts with the trade union. Differently from the situation that is observed in traditional VW car plants, as Anchieta and Taubate, managerial questions appear translated in a few traditional issues according the general pattern of industrial relations in Brazil: wages, benefits, safety, profits sharing. The only remarkable conflict during the initial two years was concerning flexible time.

² Affiliation rate was 72% in December 1997 at Sao Bernardo plant. Even for the "mensalistas" (monthly-paid workers, mainly from management and staff areas) there is a high level at Mercedes plants in Brazil (33%).

³ I refer to trucks plants at Gaggenau, Worth and Marienfeld, as well Rastatt cars' factory, visited in June 1993.

Table 3. - *Different equations on innovatory capability and labour roles*

	MBB Sao Bernardo	VW-C Resende
Innovatory capability and Labour roles	<p>Going to a systemic approach...</p> <p>Formal company's acknowledgement on labour role to develop innovatory capability</p> <p>Formal Union/WC acknowledgement on innovation to face competition</p> <p>Formal procedures embodied at work organisation level to develop and implement organisational innovations</p> <p>Formal procedures at "labour management" level to support new work organisation practices and innovation development</p> <p>Living together with old practices, backward labour policies and power struggles</p> <p>Formal agreements on innovation established under a "compromise & conflict" environment</p> <p>Innovatory capability and innovation based on labour inputs formally regulated under teamwork and kaizen agreements</p> <p>Conflicts over regulation</p> <p>Productive system, organisational changes and innovation as a central issue, for continuous and complex collective negotiations</p>	<p>going to a "basic embodied approach"</p> <p>Formal company's self-praise for the modular consortium system and its flexibility</p> <p>No Union statement</p> <p>Informal ("invisible"?) workers' inputs and hierarchical indirect communication between shop-floor and VW structures; formal workers' involvement isolated at VDO module</p> <p>Basic "labour management" policies with lower patterns and weaker procedures compared to other VW factories</p> <p>Conflictive views and philosophies on labour management within MC companies</p> <p>No discussions with workers' representatives on the productive system and innovation</p> <p>Innovatory capability and innovation development based on labour being designed and established by VW as a corporate policy</p> <p>Conflicts within MC companies about teams</p> <p>Productive system and organisational change as a "remote issue" on bargaining table up to 1998</p>

Elaboration: the author.

The connection with production processes and job design is vague, they are not in discussion. Team concept would be introduced in the whole factory at the end of 1998, but that was a struggle among VW-C and their partners inside the modular consortium. Production management and processes changes are let outside the workers' agenda, up to VWC is still moving from a basic to a partial

embodied approach, based on future "teams' activities";

There is a strong hierarchical way conducting innovation capability, and still a small space for workers' inputs;

The modular consortium structures responsible for production organisation, employment policies and industrial relations seems not committed to a deep integration, aiming at a greater innovation

capability. The transitional questions within the “greenfield” site, after two years operating, are mainly about “how to make?” and “how to adapt?”. It’s just now that the concern about workers’ participation is clearly emerging. The MC companies have just been dealing with some basic discussions on reward system and time flexibility.

The trade-union approach was concerned to establish itself as a representation of workers’ interests linked to wages and benefits. Without tradition at automobile industry, they have not many questions about the production system. Innovation issues, as well as operation ones, are “no questions at all” within the modular consortium industrial relations system.

From both cases, workers’ experience and knowledge, managing the production process and negotiating factories organisation, appear as decisive features at these different and typical situations. To some extent, companies’ strategies relate to these experiences, knowledge and strength when designing or changing their industrial systems, their motivation approaches and industrial relations’ agenda. Mercedes trajectory is explained by workers’ experience and strength, but also by the economics environment, the influence of German holding and trade-unions, as well by the results of internal struggles both inside the company direction and the ABC union.

The workers’ responsibilities and rights concerning innovation management and development at the productive level -even being centred in incremental efforts, are clearly influenced by workers’ roles at an institutional level, inside Mercedes Sao Bernardo. On the other hand, VW Resende case reflects an organisational choice where managerial control is strongly centred at the hierarchical structures of modular consortium companies; the trade-union, happily welcoming a new big company, is given a minimum role, but it plays one. Is that the beginning?

Innovation and Industrial Relations forums: structural changes at firms’ level

Another focus to explore is the industrial relations system. First of all, the general background and main features were presented before at Table 1.

What are the meanings of these experiences from the perspective of industrial relations systems? And what new developments could appear in the future?

It’s again clear that the industrial relations environment -and evolution- are decisive factors to shape the changing processes, new work organisation, management practices. The opening of discussions around continuous innovation and innovatory capability issues drives to a travel that can mean the long-term industrial restructuring as a strategic debate as well as a daily one, as the Mercedes case shows. Internal structures change, there are new relations between workers and management. Industrial relations, “human resources management” and manufacturing are not considered as departments by managers and workers representatives, and the integration across formal structures is clear and continuous in the 90’s, bringing together new kinds of conflicts and new approaches to solve them.

This is a central point. One meaning of the studied cases is related to the clear and explicit integration between process innovation and labour issues as a single and complex management problem for companies and workers representations. This is, to some extent, the trajectory observed at Mercedes. It does not appear to be, with similar intensity and up to the present, the Volkswagen policy at its new truck factory.

The meaning of different concepts is observed in the structural arrangements operating at the industrial relations dimension. Regarding Mercedes Sao Bernardo, the company central committee is formed by managers from different areas, since 1992; trade-union and works council use to have different groups discussing specific issues regarding processes innovation and labour management, according to the topics and areas involved. Negotiation is a continuous process, reflecting conflicts and compromises, trust and power. From the workers’ perspective, after two defensive years, safety was again raised and related to new disputes around work organisation and innovation criteria. And another institutional change can result, if there is an agreement between company and trade union to merge the works council and the internal committee for accident prevention.

At VW-C, part of the differences can be also explained by the factory's "youth", but there are other important features and possible consequences. The company had to establish different compromises with the partners. From the industrial relations perspective, the result was a new pattern with fewer degrees of complexity concerning possible agendas. Unlike the situation at other factories¹, the production process is an absent question; the same conclusion is valid for the innovation issues. The team concept was introduced by VDO with complete freedom; a common programme was being built some months ago with no labour constraints. But the modular consortium means also that the structures involved in the management of production and labour have a lower degree of integration than the observed at the Sao Bernardo plant, up to the present. Companies have a "steering committee" to discuss their common policies with the trade union; workers from a few modules are elected as an informal committee that joins the union representatives.

Time has also to be considered as an important argument that could be raised by VW-C to explain the union's role and the workers' participation in Resende. "To change" is not the question as for Mercedes, but "to improve" is a point. The "learning" process can change the picture: the workers and union experiences will be developed, integration of Volta Redonda Metalworkers with other trade-unions can be improved, a works council can be established as part of an agreement concerning VW plants in Mercosur.

But there are some grey clouds: will the partners allow a trade-union involvement in production issues? Will VW-C enforce policies to make the union stronger? Will the union leaders be able (or want) to have this kind of involvement? Will a future works council represent all workers at the factory, or just VW employees? Or do the companies intend to keep the trade union centred at a traditional agenda (wages, benefits, time schedule)? Different implications for similar experiences and for the management of labour and innovation can appear, with pressures over the other VW factories and for the pattern of industrial

relations in the automotive industry at the national and regional levels.

The pictures also change, and I will close this section with possible pressures that companies and unions can face in the future. Table 4 describes internal pressures concerning work organisation, factory management and the industrial relations systems inside each factory, as well as external forces that also affect these factories' trajectories, and other spaces that can be influenced by them. All of them could be addressed and detailed, but I decided to centre my last reflection on institutional effects regarding the industrial relations dimension.

Spreading effects? Questions from these workplaces to the industry

The two cases point out other major concerns and questions. First of all, each "company" and "union" is not a homogeneous body, but a complex organisation. Thus, changes from one feature/approach to another are also the outcome of internal struggles. Another main point to recall is about the environment we are dealing with: two big multinationals, an old plant and a new factory, increasing unemployment.

Job protection has become the main objective for trade unions, and during the last years some of them are looking at macroeconomics and regional policies, rather than discussing employment quality with the firms. Most of the union leaders are mainly focusing on job numbers. This also means –in a fragmented labour-unions structure as the Brazilian one- a strong fight for keeping companies or attracting industries to the region under unions' jurisdiction.

A new factory is regarded most of the times as a conquest in itself, by the city authorities, the state governor, and the trade union.

No questions are asked about assembly lines or innovative approaches, as long as jobs are created.

On the other hand, in an industrialised region with big companies putting pressure to "restructure" old plants cutting of hundreds of jobs, the unions' trend nowadays seems to be to discuss the changes wherever possible in order to delay, or even to plan, the factory's "shrinking".

Within this environment, it is hard to believe in the spread of experiences as seen at Mercedes-Benz, with the industrial relations system strongly

¹ Where the unions and works councils have at least thrights to information and consultation on these subjects (cf. Bresciani and Cardoso, 1999).

involved at the regulation of innovatory capability practices by formal or tacit agreements. From the broad perspective of the workers participation in the innovation processes, in the short-term it is likely that we can find more companies using partially supported approaches, with some new work organisation procedures and managerial policies, without deeply involving unions or work councils.

On the other hand, there is another interesting movement happening. It is also based in the ABC region and its strong Metalworkers Union, and it is concerned with structural changes in the automotive industrial relations system, at the national level. It has 3 different components:

CUT's offensive against Força Sindical in Resende, trying to establish a new trade-union to represent VW-C workers (Resende AutoWorkers), and to remove Volta Redonda Metalworkers Union as the counterpart to the modular consortium;

The implementation of an Automotive Secretary at CUT's National Metalworkers' Confederation, theoretically responsible for a national labour strategy towards the Brazilian automotive industry. The responsible person for this Secretary is also the current co-ordinator of Mercedes-Benz Sao Bernardo Works Council, and his name was chosen especially under the approval of ABC Metalworkers Union and on the basis of the Works Council experiences;

The establishment of workers representations at Mercosur level, as an informal structure or as a formal one, as defined at Volkswagen. It will probably mean a works council at Resende in the next years, with clear consequences on the factory's internal system of industrial relations.

The experiences at these two factories are useful concerning the study on innovatory trajectories, labour roles, and the productivity and quality levels achieved by Brazilian workers and industries. They also pose important questions over the dispute around industrial relations systems², and show new arrangements and structures designed to deal with labour management.

The companies themselves showed contradictory movements during the contemporary decade regarding the workers' participation in innovation processes. But it is true that the labour relations systems built by each company, the trade union and the workers inside their factories represent another reality and another possibility, absent in most of the industrial firms in Brazil. But to some extent they are like isolated islands, with workplace representations and a complex agenda. The VW Trucks case shows also that they are changing, but internal and external pressures can move the factory to the pattern seen at its traditional factories.

Management of innovation processes appears again as a question about the workers' roles as well as about the management of factory conflicts. There are different possibilities concerning to the patterns, choices and outcomes; these cases show us some changes and continuities in the Brazilian truck industry. It includes to have active roles, or not; to have different policies and compromises (or not), to make the conflicts clear, or to keep it as absent as possible, among the resulting relations between workers and companies. Industrial relations structures have been transformed, reflecting concepts and trajectories. From this point of view, basic and broad right to workplace representation is one institutional measure that could change the mainstream of managerial thought inside Brazilian plants. That's not a road too near.

² There is the increasing pressure to "deregulate" (or re-regulate), meaning to reduce the already low interference of labour laws and trade unions over companies' policies.

Table 4. - *Pressure points and external effects on the relation labour/innovation*

Feature	MBB Sao Bernardo	VW-C Resende
Internal pressure points	<p>WO: further automation at body-shop and press-shop, possible outsourcing moves for parts' sub-assembly; criteria for organisational changes; continuous conflicts on teamwork and "kaizen"</p> <p>FM: jobs' closure, management control, managerial capability, work-time reductions, results-sharing linked to individual performance, company attempts to have younger workers</p> <p>IR: companies' internal battles, union's financial resources, long-term planning, "communication war" between company and union/WC, management of trust between them</p>	<p>WO: repetitive tasks, new cabs' launching, disputes on "participatory" schemes at MC, distance between VW-C staff and partners' workers; VW-C control of productive knowledge.</p> <p>FM: wage systems, workers' motivation, VW people mobility, workers' mobility to new region's factories (Peugeot etc), "lack of power" feeling at VW-C structures against the partners.</p> <p>IR: conceptual contests within MC open battle between unions, workers' "organisational learning", and questions on future Works Council activities.</p>
External effects	<p>From: ABC Regional Chamber, DaimlerChrysler future strategies, new trucks' producers</p> <p>To: the new Automotive Secretary policies for CUT's Metalworkers Confederation; the companies and unions' approach regarding productive systems and innovatory processes</p>	<p>From: a stronger Human Relations management at VW South America; ABC influence, new trucks' producers</p> <p>To: the future VW-Mercosur Works Council; the companies and unions' approach regarding productive systems and innovatory processes</p>

Elaboration: the author. (wo: work organisation, fm: factory management, ir: industrial relations)

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APPENDIX

Table A. - *Truck's sales in Brazil*

Company	Sales 1998 (units)	% sales 1998	sales 1997 (units)	% sales 1997	market share evolution 98/97 (points)
Mercedes	18,420	35.87	19,509	35.54	+0.33
Ford	10,723	20.88	11,334	20.65	+0.23
VW-C	8,700	16.94	8,337	15.19	+1.75
Scania	5,495	10.70	7,284	13.27	-2.57
Volvo	4,094	7.97	4,509	8.22	-0.25
GMC	3,375	6.57	3,467	6.32	+0.25
Agrale	550	1.07	445	0.81	+0.26
TOTALS	51,357	100.00	54,885	100.0	*

Source: Anfavea.

Elaboration: the author.

Note: Figures excluding the small company Puma, that sold 239 trucks in 1997.

Table B. - *truck producers sites and new investments*

Company	site opening	products range	new investments US\$ million	Estimated production capacity (u/y)
Mercedes-Benz	Sao Bernardo/1956	trucks (L,M,H) engines, axles, parts	430	55,000
Volkswagen	Resende/96	trucks (L,M,H)	300	35,000
Ford	Ipiranga/57	trucks (L,M)	na	25,000
Scania	Sao Bernardo/57	trucks (H)	150	10,000
Volvo	Curitiba/80	trucks (H)	400	10,000
GMC	S. José Campos/	trucks (L,M)		18,000
Agrale/Navistar	Caxias do Sul/98	trucks (L,M,H)	200	2,500
Iveco	Sete Lagoas/99	trucks and vans	240	20,000
Kia	Itu/2000?	trucks (L)	42	10,000

Sources: Anfavea, Gazeta Mercantil (L=light trucks, M=medium, H=heavy).

Elaboration: the author

Notes: 1) new investments forecasts, since 1996 up to 2002; 2) estimated annual capacity in units; 3) Agrale plant was opened in 1983; Iveco starts with vans.