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**Changing the balance of power: the case of highperformance
work systems in Brazil**
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Working paper no 56, 2008
Editor: Lars Bo Kaspersen

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ISBN 87-91690-98-6

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Abstract

This paper is based on a longitudinal case study of a Brazilian multinational company which has changed its way of organizing work processes by implementing a high-performance work system (HPWS). The article argues that, as the firm attempts to improve its internal processes, it requires access to internal and external resources, as well as the expertise that may increase and support this change. However, when these resources are not easily found locally, the firm needs to pool and recombine different sources of expertise to succeed in its efforts. At this stage, the balance of power between different organizational actors starts to shift towards greater mutual dependence, thus reducing power imbalances.

1 - Introduction

During the last two decades, high-performance work systems, lean production concepts, empowerment and quality circles as part of a new managerial paradigm have diffused throughout Brazil. The just-in-time system, production based on team work and total quality programs were all observed in different firms and regions. Participatory methods supporting the “involvement” of workers in companies plans, which were slowly initiated at the beginning of the 1990s (Gitahy and Rabelo, 1991), have become quite widespread (Alves, 2000). It has also been pointed out that MNCs have led their subsidiaries in Brazil to adopt new organizational and technological patterns that were, to a certain extent, inspired by the Japanese model (Hirata, 1993; Wood and Caldas, 2002). High-performance work systems (HPWS) are said to enable and motivate workers to develop, share and apply their knowledge and skills more fully than do traditional practices, with positive implications for the quality of jobs as well as for performance.

Firms in Brazil have been experimenting with new managerial models and have undergone a tough process of organizational redefinition. To support the emergence of high-performance work systems (HPWS), economic actors have been struggling to reshape the institutional environments in which they are embedded, thus affecting other firms and provoking a great deal of transformation in the way economic activities are organized in local firms. Although it is commonly argued that HPWS play a key role in contributing to firms' competitive and innovative capabilities, there is little empirical evidence of how HPWS evolve over time in less developed countries and what the organizational consequences of these changes are. Little attention has been paid to how new organizational practices are 'translated' and negotiated by different organizational actors (Czarniaswska and Joerges, 1996; Geppert et al., 2006).

This article fills this gap by examining the process of implementing an HPWS in a Brazilian multinational corporation (MNC), focusing on the interplay between macro-changes and the micro-politics of organizational change. The article shows that organizational transformation towards HPWS was a difficult and slow process. Adversarial industrial relations, institutional constraints and free-riders within the industrial sector all impacted on the implementation and effects of HPWS. The article shows that, by resisting the planned changes and acting on the emerging possibilities, workers managed to increase their social space by pursuing better working conditions, upgrading skills and improving their salaries. The case provides an ideal situation for examining how, over time, the inconsistencies inherent in processes of organizational transformation are resolved as organizations move gradually from one set of institutionalized practices to another in response to environmental change.

The article is divided into five further sections. The next section presents the research methodology. The third section discusses the treatment of industrial transformation according to institutional theory. The fourth section considers how the Brazilian institutional environment has changed since the liberalization of the domestic market and democratization. Then the case is presented in the fifth section. A final section discusses and concludes the paper.

2 - Research Methods

The example here involves an in-depth longitudinal case study, covering a period of eight years. It describes the experience itself, as well as determining the extent to which existing theories help us understand such cases or require modification (Eisenhardt and Graebner, 2007). The case-study methodology is useful in developing a processual and holistic approach (Elias, 1978) which fits well with neo-institutional theory. Case studies permit a deep exploration of how the institutional context in which firms are embedded impacts on the way they are organized and may change over time. In studying the organization of work, the goal was not to classify which management model predominated, but to examine the organizational struggles that have shaped the implementation of new models, how changes in the institutional environment have influenced games among social actors and how the outcomes of these games have also reshaped the institutional environment.

Data was collected using three techniques: (1) semi-structured, one-to-one interviews; (2) semi-structured group discussions; (3) written and electronic documentation; and (4) non-participant observation. Interviews were the main source of data, with observation and documentation serving as important bases of triangulation and supplementary sources for understanding the phenomena of interest. The informants were chosen according to the guidelines for “purposeful sampling” (Lincoln and Guba, 1985) using a “snowball” or “chain sampling” strategy. The research involved an iterative process of collecting data, analyzing them and looking for new informants on the basis of information that was considered important during the previous interviews; this made it possible to continue improving both the focus of the research and the quality of the data being collected.

The company has been visited four times during the last eight years, and the initial research design was divided into three phases. A total of 89 interviews with 62 informants were conducted, and five departmental meetings and several shop-floor team meetings were observed. Semi-structured interviews were used to provide as broad a scope as possible for the data collection. Interviews lasted between 35 and 90 minutes and were recorded and transcribed. The initial interview procedure was mostly standardized across informants. As knowledge about the company increased and themes

emerged, interviews became progressively more structured. During the first phase, workers, representatives and managers from different departments and hierarchical levels were interviewed. During the second phase, three weeks of very intense fieldwork were carried out in the company (with workers, top and middle managers) and in the three local suppliers (managers) and two training institutions (administrators) also being interviewed. This was important in strengthening the validity of the conclusions through the use of multiple sources of information, which also helped in performing triangulation in the data analysis. Several interviewees were interviewed more than once. Observations at the shop-floor level were also carried out and interviews conducted whenever possible. The company was prepared to provide access to documents related to investments in training, salary grades and even the firm's confidential strategies. It also supplied some quantitative data and statistics, which improved knowledge of the socio-demographic characteristics of the employees. During the last five years, the author returned to the company twice in order to follow the ongoing process of organizational change.

The case analysis was based in grounded theory methods, in which theoretical concepts and propositions emerge as the researcher gathers data and investigates phenomena. In order to discover patterns, constant comparisons and related open and axial coding techniques were utilized, namely the assignment of themes and concepts to a selected unit such as sentences taken from interviews, field notes and observations. Coding proceeded primarily on two levels: 1) using a word list of concrete terms grounded in the data (participation, lean, change, cooperation, control, teams, decision-making process, training, salary, etc.); and 2) using a word list of more abstract terms (human resources policies, deliberation, reward system, institutions, systems, upgrading skills, industrial upgrading, etc.) arising from terms found in the literature (Eisenhardt, 1989). During axial coding, the author developed further conceptual domains by comparing themes both within and between transcripts (Corbin and Strauss, 1990).

3 - Organizational and institutional change

Firms all over the world are trying to cope with continually changing market demands by implementing up-to-date fashions in management and organizational structures which will lead to a new paradigm for organizing work. Authors see the possible developments

taking place among nations and firms in the global division of labour that are linked to the different strands of the global value chain as creating a global manufacturing hierarchy in which lead firms in rich countries increasingly discard manufacturing for the restricted control of knowledge, design, and marketing (Humphrey and Schmitz 2002; Gereffi et al. 2005). In opposition to these claims, Sabel and Zeitlin (2004) argue that manufacturing and design remain mutually dependent among producers in both high- and low-wage contexts. Herrigel and Zeitlin (forthcoming) argue that benefits of productive diversity that are historically characteristic of plants in high-wage regions are being extended and concentrated in low-wage locations. Transnational corporations increasingly need to provide local suppliers in various host markets with technological assistance (Ivarsson and Alvstam 2005).

Most of the literature on industrial change in emerging markets focuses on the relationship among local firms, or between firms and buyers in a global value chain: very few cases are occupied with the question of the internal processes of change. It is taken for granted in the literature that either local relations among firms and institutions or the hierarchy of the global value chain will determine the success or failure of attempts at industrial transformation. There is a common emphasis on the external powers that influence industrial change (Humphrey and Schmitz, 2002).

Neo-institutionalism has showed that similar firms in different nations differ widely in their work organisation, supplier relationships, relations with competitors and organisational structure. Pre-existing social relations condition present choices and future outcomes, so that important variations across countries occur concerning the use of labour power and the forms of authoritative control (Whitley, 1999). For example, during the last century, the overlapping principles of Taylorism and Fordist mass production that diffused in the US were also much studied by companies in Europe. However, the adoption of these principles in Europe was slow, partial, and affected by institutional influences at national level (Guillen, 1994; Zeitlin et al., 2000). There is evidence to suggest that transfers of management models are not always smooth and successful (Kostova, 1999: 308). Following this line of thought, it can be expected that the successful implementation of HPWS in a country is highly dependent on the established organizational templates in that country, and this in turn is highly dependent on its institutional environment. However, neo-institutional theorists fail to account for the

ongoing negotiations and conflicts between actors in organizations that have divergent interests and values (Hayes, 2008). Seabrooke (2006) argues that neo-institutional theory needs to pay more attention to the capacity of non-elite actors to constrain the choices of the materially or ideationally powerful. There is a weak understanding of how non-management organizational actors are able to influence organizational change in everyday micro-politics.

This article contributes to a better understanding of how micro-politics inside firms may impact on the emerging ways of organizing economic relations and support or constrain organizational and institutional change. By taking a micro-politics perspective, the article focuses on how power relations interact with institutional pressures at the micro-level and how actors at different organizational levels may have different interests, as well as a range of resources with which to pursue them (Ferner et al., 2005) and how these interests and resources change over time. Power can be related to authority roles, the use of legitimized courses of action and the control of resources of value to others within the organization (Edwards et al., 2005). Lazonick (1990: 321) argues that “effort-saving technological change” creates “the positive-sum possibility for managers to share out value gains with shop-floor workers in the forms of reduced effort and higher pay, while still increasing the managerial surplus”. Under what organizational conditions is this type of change more likely to take place? What are the effects of changes in organizational power balances for the different work groups involved?

When it comes to analyzing power relations and micro-politics in the context of changing institutional conditions, Brazil is an interesting case. Brazilian organizations bearing the legacy of a state-controlled economy, a century of import-substitution strategies and anti-democratic traditions had to cope with the de-regulation of the internal market and the democratization of the country in just a few years. There is an extensive literature showing that Brazilian firms have been struggling to implement the Japanese model for several years, but very few studies have looked inside them to reveal how this transformation was taking place and how it may resonate in other firms and local institutions. In order to fill this gap, the paper analyzes the case of a Brazilian company which has carved out an increasing share of the world market for its own products, moving from a licensed company to the world’s largest producer of highly advanced products. In the next section, changes in the Brazilian business system are presented, the

intention being to set the scene which triggered organizational processes of searching for new managerial models in Brazil.

4 - The changing Brazilian business system

It has been argued that Brazilian industrial development was a consequence of the deliberate and widespread use of the state's visible hand (Evans, 1995). State intervention produced one of the most successful examples of state-led industrialization in the post-war period. A century of import-substitution strategies turned Brazil into an especially closed economy by the end of the 1980s, in which the regulated domestic market did not allow serious competition among national producers, but made possible the emergence of a diversified industrial sector, characterized by the mass production of low-quality products, adversarial industrial relations and controlled prices, and which restricted access to imported products to the domestic market through high import tariffs and regulations.

The era of import substitution came to an end with trade liberalization, which took place over a relatively short period of time; the reductions in trade protection were extensive and considerable. Though some tariff reductions were begun in 1988, serious liberalization, including the reduction or removal of nontariff barriers, was initiated in 1990. The program began with the abolition in 1990 of "Anexo C," a list of around 1,300 products which previously could not be imported, and continued with a tariff-reform program and other liberalizing measures. Taken together, these measures had a strong impact on Brazilian industry, triggering a long-term process of transformation. Since liberalization, Brazil has demonstrated astonishing productivity growth in manufacturing, with gains in labour productivity exceeding 60%, increasing in periods of both economic expansion and recession.

The development of the Brazilian workforce and industrial relations was also quite closely controlled by the state, especially under authoritarian regimes. For most of the industrialization period, the role of the state was rather one of exercising repression through violence on the behalf of employers. During the military regime (from 1964 to 1984), unions and unions' leaders were regarded as the state's most dangerous enemies,

and they became a key target for repression. Left-wing union leaders were outlawed, and the model of union organisation was kept under tight state control.

Workers' participation in the structure of labour relations, influencing such basic questions as wages, working conditions and work rules, was denied and/or distorted. An important facet of this system was the absence of trade unions on the shop floor, and consequently less organized resistance to experimenting with imported concepts and models of management.

It is no surprise that, under these conditions of deeply adversarial relations, the development and retention of employees was not perceived to be of strategic importance to Brazilian employers. Brazilian firms considered human resources to be abundant, easily obtained and replaceable (Fleury, 1993), meaning that firms did not generally invest in the qualifications and development of a "disposable" workforce. Human resources policies have not been very anticipatory (Fleury, 1993), changing more as an adaptation to external factors. At the same time, the Brazilian model of capitalism permitted one of the most unequal distributions of income in the world.

The shift towards democratisation at the beginning of the 1980s was crucial in opening up opportunities for organised labour in the political arena. The so-called "new unionism" emerged during this phase, shaping new strategies for the labour movement. The 1980s became a period of extreme confrontation between organized labour on the one hand and employers and the state on the other. Violent clashes occurred between workers and the armed forces. The unions organized several strikes and actions, while companies reinforced their anti-union strategies.

Only after democratization, and with the election of a civilian government in 1985, did a revision of the labour laws begin to be discussed. A new labour law made strikes legal and strengthened trade unions. Making strikes easier shifted the focus from police repression (or its threat) to the real issues at stake between employers and unions, and a new basis for bargaining was created. This has had an impact on relations on the shop floor. Workers could start feeling more confident in expressing disagreements and demanding the creation of negotiating forums. Companies began creating channels of communication and using new concepts of work organization (Ferro et al., 1997). It has

been argued that a new framework for employee relations has emerged. Unions are changing their methods to replace the old confrontational strategies with more negotiating with companies.

Since the liberalization of the internal market, Brazilian industry has been struggling to learn from imported models. The emulation of foreign practices has led to progress in waste reduction, quality and assembly lead time in most industries. Gitahy (2000) showed that Japanese management techniques were largely adopted and imitated in Brazil, involving a complex process of social change, reversing hitherto dominant norms and modes of behaviour. Humphrey (1989) originally argued that Brazilian firms would find it difficult to make the transition towards 'Japanese management', though he later (1994) reviewed his own writings and modified his assessment of the transformations taking place in Brazil: "Enormous changes have taken place, in no small way due to the opening up of the economy to external competition" (ibid.: 334).

At the macro-level, there has been a reduction in the degree of inequality in labour remuneration and per capita income, and almost all forms of discrimination and segmentation have declined during the last decade. The degree of income inequality in Brazil declined sharply and continuously, reaching its lowest level in the last thirty years in 2005. The Gini coefficient declined by almost 5%, and the ratio between the richest 20% and the poorest 20% declined by more than 20%. Changes in labour income explain around a third of the observed decline in inequality (Barros et al., 2007).

The de-regulation of the national market, the democratization of the country and the emergence of the new unionism synergistically contributed to triggering a process of irreversible change in the Brazilian industrial landscape. The incredible transformation of the institutional landscape for a significant if restricted period from the end of the 1980s towards the mid-1990s makes the case of Brazil a quasi-natural experiment for examining the possibilities for institutional transformations and how different social actors act upon and shape these transformations.

5 - The case

CBE¹ is a public company with headquarters in southern Brazil. CBE also owns plants in Italy, Slovakia and China. When the company was founded in 1971, its objective was to become a supplier of the Brazilian refrigeration industry, which at that time was dependent on imports. The first products were manufactured under the license of an international firm. In 1987 the first products using the company's own technology arrived on the market. In the early 1990s, the company decided to install production plants overseas and in few years became a major global competitor. Currently, it has more than 5000 employees in Brazil (10,000 employees worldwide). In 1993, the board of directors decided to implement a pilot project in order to develop a factory using the most modern technology and "best practices". Japanese management systems with higher spans of control and flatter structures were used to organize the factory. In 1994, it was named "Company of the Year" in Brazil, out of two thousand companies. In 1996, the evaluation of the results of the pilot project by the board of directors was positive.

¹ The name of the company was changed to keep it anonymous.

The company decided to restructure an older factory on the same site, using the same management principles and introducing new technologies, such as greater automatization of production lines and a greater number of robots, thus: reducing the amount of workspace devoted to repetitive tasks.

5.1 - A new recipe: the restructuring of the technical organization of work

Until 1993, the factory's work system was virtually one of orthodox Fordism. As is usual in the Fordist system, the emphasis in manufacturing was on obtaining economies of scale to achieve competitive advantage. It was considered necessary to produce large batch sizes in order to minimize costs. The functional production layout was divided by processes. The control system underlying this traditional system had several characteristics that supported the maximization of production output and that focused primarily on the notion of individual performance: individual machines, individual operators, individual functions.

The new system was based on a new concept rooted in continuous-flow, cellular production, replacing the previous inflexible dedicated machine layouts associated with Tayloristic principles of organization. The new concept embraced three basic principles: flexibility in the use of facilities, minimizing quality problems even before they occur and minimizing "buffers" (material, human resources and time). Cell-based production was introduced, allowing different machines and tasks to be grouped together by product family rather than single function.

One important point was the change in the span of control. The old way of controlling work, with a supervisor on the backs of the workers all the time, had disappeared, and the latter now almost never saw the supervisor, who actually had received another denomination – "facilitator". As the name suggests, the facilitator is someone who tries to make things easier and helps to solve problems. In former times, workers told, the pressure and the control were continuous. Workers refer to it as the "time of the cane": supervisors and managers used an invisible cane to touch people to call their attention, and the invisible cane was also used to keep the correct distance between distinct hierarchical levels. One worker stated that:

“It was terrible before, there were so many supervisors and foremen; they were on your neck all the time. It was a stressful environment. If someone could not achieve the right amount of pieces, they would call her to have a talk. If the worker could not improve, she could easily be fired. They knew we were afraid for them. It changed very much.”

Along with the technical restructuring, the intention was also to change the nature of the labour process. In order to support the factory being restructured to cell-based team working, with different machines and tasks being grouped together by product family, workers were expected to become more personally involved and responsible for the quality of their work, as well as more responsive to the “just-in-time” supply requirements. The managerial expectation was that, as a reward for their involvement, workers would obtain greater satisfaction at work, which was expected to lead to greater commitment, and in its turn to less control.

The implementation of new practices involved substantial changes when compared to the prevailing traditions. In the first years after its restructuring, the company faced enormous difficulties in changing its original methods. The reduced number of supervisors made CBE unable to keep up production, and productivity in some departments fell. Supervisors who had been made redundant were called back. During the first years after restructuring, established industrial relations traditions proved quite difficult to overcome. The organizational restructuring occurred at various paces. Changes went back and forth over several months and even years. The transformation took much more time than the management had originally anticipated.

The factories underwent a quite rich process of change during the last decade, and converted slowly to a high performance organization. But for most of time changes were immersed in contradiction and ambiguity. In the next section, an important part of the restructuring plans – the continuous improvement system through the use of quality circles – is described. Changes occurred all over the factories, at different levels, but the focus here is related to the system of continuous improvement, a central concept in the new work system. The intention is to show the responses of different actors to the new system over time, to illustrate the struggles involved in constructing the new organizational model. The example of the continuous improvement system shows three different aspects of the changing process which are quite interrelated: the increasing

dependence of the company on contributions from workers; the creation of new negotiation channels; and changes in the reward system. The new system gave rise to new tensions between workers and managers, creating the potential to change the balance of power between these groups.

5.2 - The two sides of the Continuous Improvement system

The word “team” applies to many different types of group, ranging from problem-solving teams (quality circles or QCs; quality improvement teams or QITs) to production personnel reporting to a supervisor. The semi-autonomous cells at CBE are also work teams. The population of and network among teams represents the organizational structure on the shop floor. Inside the cells, the quality circles (QCs) form other cells. Actually, the QCs have greater autonomy and levels of skills development than the semi-autonomous cells. QCs are small groups of employees who meet regularly to identify, analyze and solve a wide variety of problems. The intention is that they can also identify and exploit opportunities with a view to improving their immediate work situations and, more generally, their enterprise. QCs are also formed by volunteers, and their activities take place outside regular working hours.

The introduction of quality circles was a major change in this factory. Workers were for the first time explicitly asked to contribute to the improvement of production processes and were supported in doing so. There was a certain freedom in the QC to expose ideas, discuss problems, look for solutions and ask for support. Even a theatre group received support from the company to present a play, and the company hired a well-known theatre director to help with it. With QCs, workers started to experience two new conditions, one being the ability to escape the stricter and more predictable arrangements at work, as they were given a new experience parallel to their work on the assembly lines, namely influencing the technology used on the shop floor and having their say. The second condition, also linked to this, was their ability to control their own work, to work in groups, not only as in cellular production, but in teams able to search for joint solutions and improvements. In the QCs they were free of hierarchical supervision. They could decide what to improve and how to improve it, as well as who should be invited to contribute to their objectives. However, they showed a great deal of dissatisfaction with the reward system.

In the beginning workers were highly committed to the QCs, since for most workers they represented the first opportunity they had had to develop and use new skills through participation in continuous improvement. After one year the results were impressive, the number of workers involved, the number of proposals and the number of changes which resulted in improvements exceeding initial expectations. As one worker put it:

“I like participating in the QCs very much; I enjoy thinking about what I can do to improve my working environment. I have been with CBE for the last eleven years, and this is the first time that we in production can say something, and if we say something that can improve production, they listen. I like that very much. I think we benefit from that. There are a lot of small things that seem like nothing, but altogether improve our workplace and our working conditions.”

“We had a lot of problems with one of the robots in the line, and the engineers could not solve the problems. Our QC (formed of unskilled workers) decided to work on it...we started thinking how we could change it...our group designed a new arm to the robot. It saves the company more than U\$ 50,000 a year.”

If, on the one hand, workers were very satisfied by the new possibilities in the QCs, on the other hand, the interviewees revealed widespread dissatisfaction with the reward systems. During the first phase of implementing HPWS, workers felt that the changes did not reward them in financial terms. Not seeing any change in the reward system and no other advantages in participating, they withdraw from the QCs and even tried to subvert the existing ones. Workers highlighted the problem:

“The only problem with QCs is that we need to use the time outside our eight-hour shift. Many times we would like to have a meeting during the shift, but the supervisor does not permit it.” (line feeder)

“I know that there is a problem in my line that I could solve within my QC group. However, I was calculating how much money CBE could save, and it's a lot of money, so I gave up presenting it...I will receive nothing for that...I come here because I need a salary, not for pleasure.” (maintenance worker)

After one and a half years of good results, the number of teams involved with QCs started to decrease sharply, and further improvements in the production processes became very few. As a production manager noted:

“Actually, we are facing problems to sustain the number of workers involved in the quality circles, and the projects being presented are not as good as they were before. We do not really know what to do. We will ask for help from the consulting firm. People are always unsatisfied.”

It was hardly surprising that employees were not willing to contribute to the fortunes of the company if they did not benefit from it. CBE was repeatedly reporting large profits. Workers interpreted this as a result of their own hard work and their commitment to the continuous improvement processes. However, discontent emerged when the company asked for participation in order to achieve improvements in the production processes and cut costs, while at the same time reporting increased profits and providing rewards only for managers at higher hierarchical levels. Workers interpreted this as if they themselves were paying the bill. They had been given the opportunity to use and develop their skills as never before, yet the way the results were distributed remained unchanged.

The distribution of rewards was a clear problem, but uneven distribution has always been a general problem in Brazilian organizations. During the first years after the restructuring, the management resisted changing its rewards and salary systems. Negotiations between workers and management achieved two partial solutions: to increase the number of hours and the range of choice for courses, thus introducing the ability to participate in the design of new tools; and to create new career possibilities, thus reducing substantially the gaps between maintenance workers, technicians and engineers, and creating opportunities for unskilled workers to attend training to become skilled workers. But the rewards system was not revised. Management were insistent that QCs should not be rewarded:

“QCs are voluntary; workers just need to be involved if they like to do so, they are not forced. Thus the company will not pay for these activities. QCs take place outside normal working hours. Workers are rewarded with the satisfaction of doing a good and interesting job.” (Production manager)

This kind of statement was interpreted as unfair and illegitimate by workers. Most of them would like to participate in QCs, but very few wish to contribute to enriching the company and its managers still further.

5.3 - Consultative channels and changes in the rewards system

As part of the new managerial model, the company had opened up new channels of communication between the top management and its blue-collar workers. The CEO would meet regularly with the workers to open discussions in which the latter had the freedom to decide most of the topics being discussed. Workers could participate in an almost anonymous way, since middle management and supervisors could not participate in these meetings, which protected blue-collar workers from retaliation.

“These meetings were a great thing happening here: we (blue-collar workers) can really talk to Dr Herman (the CEO) and be very frank about our dissatisfactions. People who have been here for many years could not even dream that this kind of openness would take place. And because we are so many, Dr Herman cannot know people by name, so we really say and ask and criticize as we like.” (line worker)

The creation of a deliberative forum in which workers and management could discuss problems and solutions involving the organization face to face was an impressive innovation, given organizational history in Brazil. It was an impressive departure from formerly adversarial relations between management and workers which represented a path-breaking act, since for the first time workers acquired a voice in the organization, without having to fear retaliation.

During these meetings, the dissatisfaction of the workforce was evident. The problem of the reward system was always a hot topic. But no change occurred until the continuous improvement system began failing to work as expected. In 1994, CBE developed a new system for salary compensations related to seniority and skills, which was a partial solution in improving salaries, but without direct link with QCs.

Facing unremitting pressures, in 2000 the company decided to introduce an annual bonus, linked to results, by which the whole workforce would equally receive a percentage of annual profits. QCs would continue not to be rewarded, but the annual bonus changed the situation from the perspective of workers. The continuous improvement system would generate a better production process, saving resources and consequently money, which in the end would be paid back in the annual bonus. With the introduction of the bonus, the company could on the one hand see that workers would be more committed to the continuous improvement system, and on the other hand, as the bonus was equally divided between all employees, they would put pressure on their own colleagues to collaborate in the continuous improvement system.

In the next section, the links between the continuous improvement system at CBE and the regional training institutions is presented. The intention is to show how the continuous improvement system generated a dynamic for the continuous upgrading of skills, which had important spill-over effects for surrounding firms.

5.4 - Continuous improvement and the transformation of the local training institutions

In the past, knowledge in the factory was concentrated among technicians and engineers. In addition, the Brazilian vocational system was structured so as to generate a highly specialized workforce to suit Tayloristic organizations. The first experiences with QCs showed that, even when workers wanted to contribute, they lacked the most basic skills. Workers and management agreed that changes in the process of workforce formation were necessary to support the intended changes to its work system.

“Twenty years ago, a new worker needed few hours to learn her job, now it takes several months, in some cases more than a year to educate a new unskilled worker; for more qualified people, it is a never ending process” (production manager)

“In the old days, even an illiterate person could get a job here. My parents worked here for many years – my mom had just two years of education, and my father came as an illiterate. Now the most common thing here is to start with a high-school diploma, and sometimes computer skills are also necessary.” (line worker)

However, one clear problem the company faced locally was who should provide the necessary training. The way the established national vocational system was structured made it difficult to educate a workforce that was able to cope with the new organizational demands, besides the fact that there was no a system for the continuous upgrading of skills.

In the face of these institutional constraints, in 1993 the company decided to support the establishment of private vocational institutions – quite an innovative change at the time, since companies are obliged to contribute financially to the national vocational training system, whether they make use of it or not. There was no institution in the region which could provide the necessary skills to the workforce. With the help of the local university, CBE established an educational program for teachers and specialized personnel to educate the workforce through newly established and privately owned training schools, providing workers with the qualifications CBE needed, which were rather general skills, applicable in other firms. The new schools were primarily intended to re-educate CBE workers, but soon these private schools started offering their services to other companies in the region.

As a result of internal negotiations, CBE decided to provide educational allowances to its workforce, not only to improve their basic education, but also to permit them to pursue technical education and university degrees, which created a new market for skills formation in the region. The schools belonging to the national system were soon trying to catch up with the new demands. The Tabel 1 shows company's internal reports show the investment in training in recent years. Insert Tabel 1 HERE

Annually, throughout the factory, U\$ 1500.00 per employee were spent on training for frontline workers. In the first years of the scheme, nearly a hundred percent of the production workforce participated in training. For the workers taking these courses, this was a strategy to improve their opportunities in the job market by increasing their employability. Workers whose employers do not pay for upgrading courses must pay for them themselves, something that is very difficult for a blue-collar worker, given the typically low salaries in Brazil.

5.6 - The external impact of internal restructuring

The new system for upgrading skills at CBE started impacting on other companies in the region, initially firms linked to CBE as suppliers, but later on other firms without direct links to CBE. There were two main drivers through which the new skills that were developed to support the continuous improvement at CBE became a common good locally: the upgrading of the whole vocational system in the region, and a new dynamic mobility in the labour market.

In recent years, the successful international expansion of CBE, its impressive growth and its accumulation of national and international awards gave the company an exceptionally good image at the local and national levels. CBE became an interesting company to work for, attracting unskilled and skilled workers, as well as engineers and administrators from other cities and regions. Even workers in well-known international firms began playing more interest in the new vacancies at CBE. Most of the candidates saw a job in the company as providing an opportunity for a career which could go beyond CBE. Working for a few years at CBE was felt to give workers greater opportunities in the local labour market because of the company's focus on continuous education and training.

On the one hand, CBE was able to harvest from its system of continually upgrading skills. On the other hand, various companies in the region became quite interested in attracting CBE workers. These companies started offering higher salaries and better positions than those enjoyed by employees at CBE. Thus, the labour market developed a new dynamic: workers were moving within it, having CBE as the most important node in the network of firms, a necessary goal to improve their future opportunities. Workers from other firms valued a job at CBE as making it possible for them to advance their skills and consequently increase their employability, while other firms saw in CBE's employees a cheaper way to gain new knowledge. CBE had become the main source of skilled manpower to free-riders in the region, which was not the best position to occupy.

CBE had two main responses to this situation. Internally, it developed a new system for salary compensations related to seniority and skills, intended to reduce turnover immediately. A salary bonus linked to profit-sharing was created, which benefited the whole labour force, being paid gradually during the following year. This was another way

for CBE to keep its employees, because those leaving the company would lose their share of the annual bonus. Externally, it used the employers association to put pressure on free-riders in the region, setting agreements to at least reduce free-riders' strategies to attract CBE's work force. At the same time, several programs to upgrade its own supply chain were created which involved more than twenty firms in the locality. The result was a totally new dynamic of skills formation and upgrading in the region.

Changes in the different areas did not occur simultaneously but overlapped during different periods, and many times contradictory concepts were used. In the first years after the restructuring according to cellular production, some production lines were still organized along Tayloristic principles. Table 2 shows the changes in the features in CBE's work system over time.

Table 2. Organizational changes over time

6 - Discussion and Conclusions

This study shows that Brazil's period of economic liberalization, starting in 1989, was a difficult one for many of the country's manufacturers. Reorganizing production in search of HPWS was the most important way in which many companies coped with the transformations. The article has sought to analyze the different managerial strategies adopted to implement a new work system, how the workforce responded to it and the impacts of this organizational process on the institutional landscape. There were five main changes at the organizational level: the organization of work was based on teams; the span of control was substantially enlarged; the reward system incorporated profit-sharing; new human resources practices were created to retain the workforce; and a consultative forum was established.

The diffusion of new work practices from CBE to other firms occurred at three levels: first, the creation of new vocational institutions independently of the well-established national institutions, which in turn triggered a renovation of the whole system; secondly, the diffusion of new practices to other firms which were suppliers of CBE, through direct supervision and training; and thirdly, the mobility of the CBE work force attracted by other firms outside its supply chain.

The prevailing institutional environment represented a barrier when the organization started experimenting with new organizational templates. However, institutional changes did take place. As Hyman (2001) has argued, institutions are not only frameworks that condition action, but also 'objects of contest'. The implementation of a new work system brought about several organizational changes, most of them being intentionally pursued by management, while others emerged entirely unintended. Workers contested management attempts to transform the organization and were able to create legitimacy gaps, forcing management's to bring new offerings to the table. The argument that, as long as labor is cheap, management should not invest significant amounts of time and resources in training and improvements in working conditions cannot be supported in CBE's case.

Most strikingly, a key distinguishing characteristic of the new managerial model – the intense and ongoing collaboration needed by the firm from its labour force at different levels – has become essential. The ability of the workforce to perform a variety of roles and its commitment to the continuous improvement system has become an indispensable competitive competence. In the previous work system, this collaboration was not as necessary as it later became, and the workforce was well aware of that. The balance of power then changed. Workers had gained the capacity to create uncertainty within management, which could be translated into favourable terms of trade in their negotiations with management.

One choice that the workers made was to struggle collectively to be able to influence the changes that were taking place in the organization of work. Knowing that managers were interested in supporting the new organizational arrangements, some workers chose not to participate in the continuous improvement system and in QCs, thus leveraging their bargaining power. Workers strongly criticized the idea of participation, as it prescribed a democratic and egalitarian process among participants, who were supposed to contribute to the organization but did not share in the benefits of their contributions. They could nonetheless find space in the new organizational contradictions and ambiguities to strategize and construct new forms of organizing and pursue a new reward system.

At the same time, the labour market had gained a new dynamic, since workers were more prompted to move to other firms. As Morrow and James McElroy (2008) showed, high levels of turnover are typically associated with low levels of organizational performance, a condition which CBE would like to avoid.

In the past, the high turnover rates in Brazilian industry were interpreted as management using firing as a disciplinary tool to control their workforces (Leite, 1994). The new competitive strategies and patterns of skills formation changed this radically. Currently, the mobility of the labour force indicates a different dynamic. Workers move from one company to another, creating a trajectory to upgrade their hierarchical positions, consequently enriching their skills and increasing their incomes. Before the restructuring, CBE also used firing as a disciplinary tool. Now, when it began losing its best workers, who had taken advantage of the new opportunities for skills accumulation and development, HR managers at CBE were involved in changing this new strategy. This situation showed that workers could influence the possible destinies of the firm, even more than managers had expected them to do when introducing the new ideas linked to HPWS. New financial incentives were developed. Profit-sharing increased rank and file income, in some cases by more than 25%. In the new organizational arrangements, workers are not easily replaceable as before.

These features of the new work system fragment the division of labour and reduce the power imbalances between capital and labour. As the firm attempts to improve its internal processes, it requires access to internal and external resources and expertise to increase and support this organizational transformation. However, when these resources are not easily found locally, the firm needs to pool and recombine different sources of expertise to succeed in its efforts. At this stage, the balance of power between different stakeholders starts to shift towards greater mutual dependence. Changes in the national conditions for competition among economic actors are likely to alter actors' calculations of the returns they can obtain from continuing to reinforce traditional patterns of action (Morgan, 2005). In the case of CBE, both management and workers were able to construct new patterns of action modifying the institutional environment and its traditional constraints.

There are a number of avenues of further research that stem from this article. First, all the new organizational arrangements and practices introduced by CBE required substantial investments. As such, smaller companies will face difficulties even in starting similar projects. As the benefits and costs of the process of transformation can vary considerably, the total adoption of HPWS may only make sense for a few companies. Secondly, it would be useful to replicate this study in another emerging market context so that cross-national variations of organizational processes could be assessed. Thirdly, further research will show how institutional complementarities affect industrial upgrading in different sectors of the same country.

Tabel 1

Year	Hour per Employee	Number of employees	Total Investment U\$
1994	53	6,714	2,490,000
1995	61	6,782	3,048,000
1996	63	6,000	2,172,000
1997	76	5,202	2,750,529
1998	55	4,928	2,278,689
1999	59	4,643	1,905,766
2000	68	4,869	3,873,921

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