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Ergonomics and Work Organization: The Relationship Between Tayloristic Design and Workers' Health in Banks and Credit Cards Companies

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The discussion developed in this paper is based on the results of an ergonomic work analysis carried out with attendants at call centers. Some critical issues and difficulties, like working pace, inadequate tools and workstations, and software inadequacies were detected in working situations. Operator-customer interactions are presented, attempting to put in evidence working constraints, working conditions, and their connection with health problems.

The main conclusion is that serving clients, especially when the job is to provide information, is not a simple task, as information is not always available in the computerized system and is completely fragmented. The scope of workers' actions is very restricted and complicated and recurrent requests are redirected to others. Workers (individually or as groups) have limited possibilities to make adjustments to be able to give more adequate and personalized treatment to clients and, at the same time, to work in a less stressful environment. In periods of increased workload and work intensification, the situation is very much favorable to the incidence of health disorders, such as work related musculoskeletal disorders (WMSD) and others. Some suggestions to improve the work situation are discussed.

call centers ergonomic work analysis
work related musculoskeletal disorders taylorism computerized systems

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1. INTRODUCTION

The implementation of call centers has increased in many Brazilian companies in the last 20 years. Nowadays, we can find customer services in many industries and public services. This phenomenon is particularly intense in banks and credit companies. A large number of operations can be done by telephone and customers can have access to the company by calling one of these centers and asking for the services they need. This is possible because of the massive introduction of new information and telecommunications technologies. The introduction of automation in these companies has brought several changes in production processes, work organization, and work content.

Customer services, and more specifically call centers, are conceived to facilitate the relationship between customers and companies. This communication is mediated by operators and computer systems.

Production at these call centers is strongly influenced by the search for an efficient service, but one with quality. For that, companies look to reduce waiting lines by implementing leading edge systems and fast service. Quality of service is sought through the standardization of tasks, where scripts are used to direct the conversation between operators and customers.

This way, a system is designed in which tasks are considered to be simple, and the production process is divided in subsequent sectors, in a way analogous to the assembly line. However, reality is much more complex. A series of problems can occur in opposition to the simplicity paradigm. In fact, serving a customer is a much more complex task, which requires knowledge of company products, computer applications, and the operators' understanding of the problems presented by customers. The conflict created can result in problems of quality and health problems for operators.

2. METHOD

A diagnosis based on the ergonomic work analysis was the method chosen (Guérin, Laville, Daniellou, Duraffourg, & Kerguelen, 1997; Wisner, 1993). As discussed by Carballeda, Garrigou, and Daniellou (1994), this method is employed in order to understand the work activity through the behavior, strategies, and know-how of operators, and their interactions in an actual work situation.

Is this case, the basis of ergonomic work analysis is focused on the comprehension of the work as it is actually performed—the “actual work”—and then, its comparison with what is designed by management. The main steps of the method are

- problems stated by the company;
- points of view expressed by different “actors” in the company;
- company strategies, organizational structure, and production processes;
- production and health problems;
- relationship between tasks and activities performed by workers.

Interviews and meetings were used to guide the collection and analysis of data, including at different hierarchical levels, management, management staff, and operators. Groups of voluntary workers were created and involved in systematic observation, discussions, and meetings used to improve the comprehension of working difficulties, constraints and the possibilities for work improvement.

This methodology is particularly suitable in this case because it puts in evidence (a) the variability of production, (b) the problems generated by the work organization, (c) the differences between workers’ and designers’ mental representations about work, (d) the cognitive aspects of the work activity, and (e) workers’ strategies to deal with the variability.

3. RESULTS

3.1. Company Strategies and Organizational Structure

The companies analyzed are organized into a functional structure, that is, departments specialized in performing specific parts of the production process. Call centers are one of these areas; the only function performed is to receive calls, give information, answer clients’ questions, and refer problems to other areas of the company. There is no follow up of the problems posed by clients’ request. That way, operators do not have feedback information about the resolution of each case.

The task assigned to operators is designed based on the principle that answering calls is a simple activity that can always be standardized and strictly controlled. Worker control and worker initiated direction, as instruments that could improve the quality of the work, including better

customer satisfaction, are not part of the organizational design concerns. Work is fragmented and segmented, limiting the possibility for operators to act and solve problems.

This service includes giving different information concerning the client situation (credits, debits), requests by new clients, cancellations, general claims, and many other problems. Giving other information, like that concerning insurance and additional services (selling tickets for concerts, theater, sports events) offered by the companies is also part of the task. In banks' call centers the task is mainly composed of different types of banking transactions, like account movement, investments, information on interest rates, and payment of bills by phone.

Quality and productivity are considered to be strictly related to the respect of procedures by the workers. The design of the task is based on the logic of absolute control. The worker is constantly controlled in real time, in quantitative terms (average time of call, non-available time, time of connection, delays, pauses, etc.) and qualitative terms, in relation to what she or he says to customers. Control is made directly by supervisors and there is also a system of electronic performance monitoring to control work pace. Supervisors periodically and randomly monitor workers. It is possible to listen to operators while they are in contact with clients to control whether they are respecting the script, using the computers and navigating into the system according to procedures. In some situations, supervisors interfere directly in calls, even while operators are in contact with customers.

3.2. Production and Health Data

Operators work 5 or 6 hrs per day, 5 or 6 days a week, divided in different shifts to provide service 24 hrs a day, 7 days a week. In different companies the time for rest can be from 15 to 30 min during the working day. There are also differences in the time provided for each call; the average used for planning production was 80 or 130 s. Depending on different factors like time of day, day of the week and season, events like holidays and macroeconomic changes in the country, significant variation is observed in the number of calls received.

In one of the companies, production data showed rapid growth in 1996. The average number of calls answered per worker per month increased by 30%: from 1,300 calls to 1,700, from January to Septem-

ber. In the same period, the number of calls received jumped from 1 million to 1.6 million. Minimum time between calls, which had been about 3 s, was abolished. Production capacity problems were one of the consequences of this rapid growth. The technical structure and human resources were not adjusted accordingly. This is shown by the fact that non-answered calls increased 5.7 times and clients' waiting time increased 8.6 times (see Figure 1).

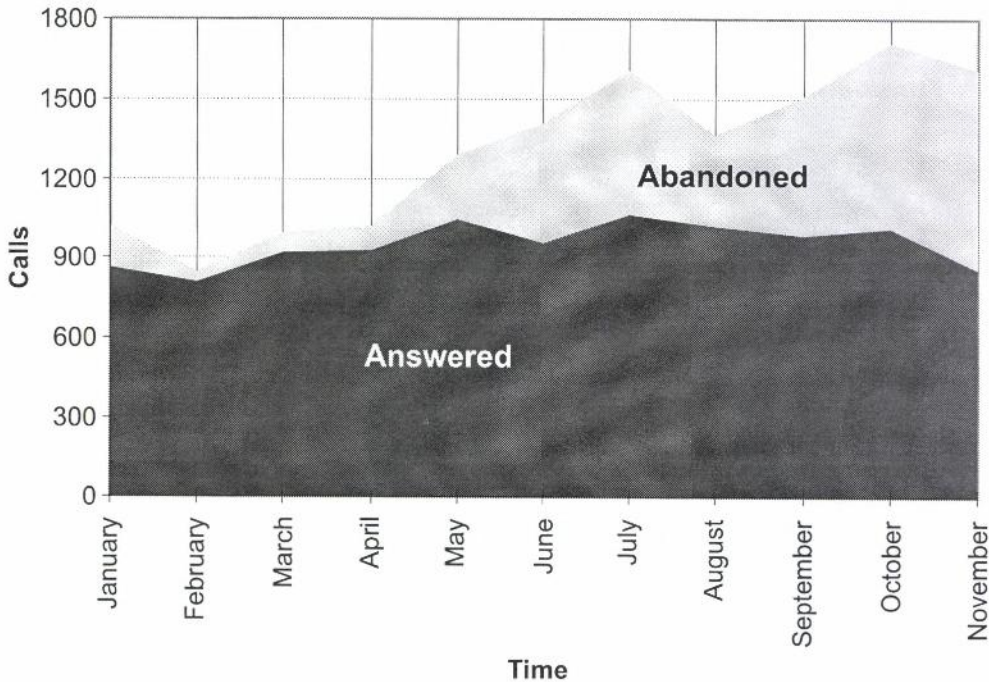


Figure 1. Received, answered, and abandoned calls, in thousands (1996).

In parallel to that situation, health problems arose. In 1989, there were almost no cases of WMSD (work related musculoskeletal disorders); by the end of 1993 new cases began to appear, and in 1995, the proportion of workers on sick leave because of WMSD was 6%. It increased to almost 12% in September and reached 15% in the last quarter of 1996, as shown in Figure 2. Those data refer only to the cases officially recognized as occupational diseases. A similar situation was found in the other company where 11% of the workers were on sick leave.

There is a substantial number of workers with problems related to WMSD who did not stop working. A survey was conducted asking all

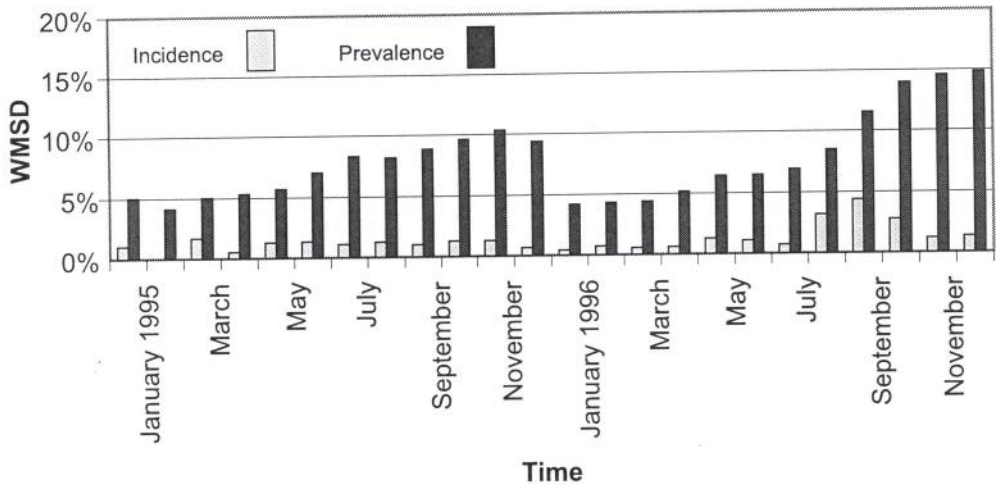


Figure 2. Work related musculoskeletal disorders (WMSD) incidence and prevalence (1995/96).

the workers in the call center about physical and mental problems. About 80% of the workers interviewed referred to some kind of discomfort or pain. It is possible to consider the epidemiological situation to be an epidemic.

3.3. Differences Between Designed Task and Actual Work

The task is conceived to keep workers restricted to answering calls. That way, workers must be objective and rapid, acting strictly according to procedures defined by the company. If there is any problem to solve, they have to refer it to other departments, without sufficient empowerment to take initiatives and follow the process of problem resolution. As long as workers are directly in contact with clients, they are expected to be polite, clear, and objective.

However, in many analyzed situations the results show exactly the opposite. Operators are frequently pressed into rushing in order to reduce waiting time. They have to speak rapidly with the client and try to finish the call as soon as possible to keep their time within the average. If something goes wrong, or a problem is not easily solved, they become anxious. Sometimes, an open conflict with the client is established: A non-satisfied client can be very aggressive and the worker must be polite at all times. At the end of the day they refer to

themselves as answering machines. Even some clients realize that the way their treatment is standardized and not personalized, asking the workers whether they are human beings or robots. Paradoxically, workers are supposed by management to be the first representatives of the company to the customers.

There are many situations where the operator must deal with several different difficulties to accomplish his or her job. There is not enough information about clients' requests and the interfaces with other departments of the company.

Many times, the client has information that does not match with what is registered in the computer. For example, the client complains that a document that was requested has already been sent to the company, but the worker has no information about what happened. Other times the problem arises from different understandings of the language used by the company. Words like "balance" are used by the company as balance of credit and, for the client, this can mean balance to be paid. Workers also state that clients ask them about products launched in the market, about which they have not received any previous information.

The operator is not allowed to delve more deeply into the working process; she or he can only put information into the system, and problem resolution will be done by others. There is no feedback information for call center operators.

4. DISCUSSION

In those companies, the introduction of technological innovations is being carried out based on paradigms molded in the tayloristic tradition (Zarifian, 1990). Tasks are conceived to be repetitive and standardized. The production process is fragmented and the interfaces between different areas responsible for the execution of some operations are, in many situations, the locus of conflicts and loss of productivity.

The gap between conception and execution is evident. There are different points of view defining the strategies of the companies' departments. Many products are conceived without taking into account future operational problems. Sometimes, a new product is launched and operating procedures have not been updated. This is also accompanied by a deficiency in technical and human resources, and many times, there

is a significant time period between the detection of the need and the decisions regarding new resources to manage that need.

For operators, the situation is rather complex. Their task is extremely standardized; they must respect procedures strictly. Nevertheless, the actual situation almost never fits into the procedures and many variables are not taken into account when the process is conceived. In addition, the fact that they are facing different and conflictive logic increases the complexity of their job.

As the production process is fragmented, part of the production is done at least twice. This happens because of difficulties in information flow and communication among departments.

The point of view expressed by management is that the company can be compared to an assembly line in a factory, but actually, those situations are completely different. There is no physical sequence of operations, many operators are doing exactly the same task and they do not have contact with the operator working in the next step of the process.

In a fragmented process like this, productivity gains depend mainly on technological improvements and repetition of working cycles. Reductions in call duration and in intervals between different calls are considered major ways to try to improve productivity. That way, operators must accelerate their work. The intensification of work is a frequent consequence, causing health, quality, and—paradoxically—productivity problems.

Different mechanisms have been conceived to maintain the production system. Productivity campaigns have been implemented to achieve higher levels of production. The best workers, as measured by rapidity and respect for procedures are rewarded; the worst are candidates to be dismissed. Electronically driven systems are developed to control workers, call duration, and how workers use the computers. Discipline of workers becomes increasingly crucial to sustain this logic of respect for procedures.

There is a lot of pressure for increasing the speed of service, and an environment of frustration due to the feeling of not being able to solve clients' problems, as the operators' task is basically restricted to receiving complaints without following up the process for solving them.

It is not astonishing in this situation to find many operators suffering from health problems. The incidence and prevalence of work related musculoskeletal disorders (WMSD) is very common.

As a result of the ergonomic work analysis conducted, it is possible to state that the work performed is complex and requires constant attention. The worker is almost always subjected to situations where there is no clear pre-defined procedure in the conceived task. There are many incongruities in the work process and in the interface between company departments. As a consequence, the worker is obliged in many situations, to equivocate and make excuses to the client because often there are no objective answers to be given.

It is clear that the problem is not to define procedures for every event or situation. As long as it is not possible to "control" and define clients' behavior, workers must have a possibility of dealing with unexpected demands.

There is a contradiction between (a) the logic of the company, (b) customer demands, and (c) the role attributed to workers. In principle, workers are predisposed to solve, or at least, to address the requests they receive. They do indeed have the education and are capable of doing that. Nevertheless, the task, as defined, is oversimplified, fragmented, and involves strong control over gestures and words. This way, the task is contradictory in relation to client demands, as well as in relation to worker predisposition. Under this framework, workers try to finish the call as quickly as possible, even if this can generate another call, as the client is not satisfied.

A rigid design of procedures, in contrast with a complex work situation, with many sources of variability, may generate physical and mental suffering. Studies made by Dejours (1993) indicate that rigid forms of work organization can generate physical and mental suffering. Another study, made by Carayon (1994), indicates that electronic performance monitoring can be considered as an additional stress factor. We should also consider that as production requests grew more rapidly than the structure, based on production figures workers were obliged to accelerate their work pace in order to manage their jobs.

Physical diseases, like WMSD, are more easily recognized than mental suffering. Since 1991, Social Security in Brazil has recognized WMSD as work related diseases, providing additional benefits for workers compared to diseases that are not recognized as having a work related cause.

Even if we cannot establish a direct cause-effect relationship between rigid organization and illness, the contrast itself can justify the search for a new set of principles for organization and work design, such as those proposed by Zarifian (1995).

In Daniellou (1996) we can also find that the conception of a new task must take into account typical working situations, and that we must consider both the intrinsic variability of production processes and human variability.

Proposals for the companies to redesign the work process are

- Call answering is an element that aggregates value to the product, and not only cost. Thus, investment must be evaluated taking into consideration the benefits provided to customers as a competitive weapon in the market.
- Redesign the organization in line with a process management approach (Lorino, 1997), defining the process and reducing the distance between market policies and production processes.
- Quality of service depends on working conditions, task content, and on the capacity of workers to solve clients' problems and requests.
- It is necessary to design a permanent communication process between management and workers. Managerial decisions must have their criteria made clear and understandable to workers, eliminating any element of arbitrariness. Negotiation of targets and procedures are strongly recommended. This tends to reinforce feelings of responsibility and involvement on the part of workers.
- Excessive control of workers can have negative effects on production. The focus of the monitoring systems should be turned to the results of production. Procedures must be seen as a means to obtain results and not something to be strictly followed.
- Management must recognize that the work process is complex and that it cannot be strictly formalized. A space for autonomy is therefore needed, because it helps workers to deal with unexpected situations proposed by clients and by the ensemble of the company.
- Management decisions must take into account that people have physical and emotional limits. Going beyond these limits has consequences for both worker health and company performance. Sometimes they are not visible, or are visible only in the medium and long term. These limits can be overthrown only in very special situations of short duration, after negotiation and worker participation.

The results of this study are an example of how the organization of work and the content of the task could be linked to health, quality, and productivity problems in call centers. Sick leave is becoming an important quality and productivity problem for several reasons. Workers who

continue working must do the job of their colleagues who are in treatment. There are signs that they are overloaded and also suffering.

The implementation of new ways of working must be made carefully and progressively, in order to achieve quality and productivity and to promote workers health. Pilot programs can be developed in order to analyze and confirm the benefits of those propositions.

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