

Comparative Mapping of Production Processes



TIE-Brasil

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**Workers' Knowledge as
an Instrument of Union Action**

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“COMPARATIVE MAPPING OF PRODUCTION PROCESSES - Workers' Knowledge as an Instrument of Union Action” is TIE-Brasil's publication qualified for discussions in groups at the seminars of workers and union activists.

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Comparative Mapping of Production Processes

To the reader

Being intelligent and knowledge-holding person you are going to understand easily theoretical issues we present in this publication. The problem forever is how to join the theory and the practice.

To be able to make a step towards the change, to make possible to accept a new way of making things you are going to need personal commitment of all the people struggling by your side. As far as things suggested here require considerable adjustment of the union practice and replacement of important human and material resources.

It will be necessary to keep process going, fostering formation of various grass-root groups committed with debate, carrying on the policy of communication and horizontal distribution of information in the permanent and continuing way.

You will realize that it is not easy at all, but that the hard work will be compensated in a long term.

If you want to make your union organization become an example of action, coherence and efficiency, take full advantage of the material we are presenting to you and divulge it.

Comparative Mapping of Production Processes

Introduction

Since 2002 TIE-Brazil and various Brazilian unions are taking part of the activities promoted by **PLA – Project for Latin America**, developed by similar and friendly organizations from Argentina, Brazil, Chile, Mexico and Uruguai.

The PLA project started a process of bringing together union activists and grass-root workers either at the one-country or at the regional level.

We are frequently asked about what do we mean by this project and what is the purpose of it?

It is unnecessary and even unfruitfully to repeat here that we are striving for radical transformation and democracy for the societies we are living in. Probably by reaffirming it we would make good for our “revolutionary” aspirations but in practice it won't solve the core problem of our countries.

The aim of our work is to create communication and cooperation ties between workers and their union organizations, chiefly at the grass-root level. So we do believe that it will impulse democratization process in the unions, debates about new union strategies and building of action capacity at the workplaces.

Democracy, Transparency and Promotion of Grass-root Activism are the principles we stand for, as we consider them to be essentials for the structure changing process yearned by the society. For this end we collaborate with every union and social organization minded to stand for the principles of Pluralism, Internationalism, Democracy, Autonomy and Mutual Respect as a base of consequent advocacy of the worker's rights and interests.

Our events are planned in such a way that they become a place where workers can discuss in the autonomous and independent way their dear issues from the political, economic or social point of view.

We do believe that the Democracy is essential in the process of education and retrieve of knowledge, because we understand it as a system of social agents organized for advocacy of their personal and common rights and interests, as well as for the respect of the interests of the others. Thence, Democracy is a social-political system where the diversity and plurality "govern" in harmony with the individualities and collectivities, where the respect for being different and for being organized exists. Under Democracy the individual and the collective complete each other, on the contrary of today's practice of the concealed authoritarianism, when one suffocates and suppresses another, and there is no chance to proceed in the pacific and civilized way, especially when the economic power is used for political and social justification.

But if we take Democracy in this way we risk to remain at the ideology field of the Utopian idealism, never transform it into reality. Being worried to not to fall into this historical and fatal mistake we have sought to concrete the concepts, to bring them life, to make them real, reflexions of the objective reality.

Union Movement, the priority field of our work, is one of the sectors of civil society with the greatest potential of organizing, multiplying and, we would say, encouraging capacity. It came to be necessary to work for democratizing union structure, for organizing Workers at the places where they pass the most part of their life time – at their working places, that is, to create OLT (WPO) – Working Place Organization.

For the new political-union practice

Whatsoever we do in this life we need to know where do we start, what is our point of reference, where do we want to arrive at and how are we going to reach targeted goals.

We believe that the paths gone over by the most part of the local, regional and international Left in order to transform society demonstrated its errancy, as all of them were oriented to take over the political power at the social-cultural super-structure level, with no intentions to transform the economic infrastructure before or along with it. It was common point ever that political power, when it is taken over, will facilitate the process of economic transformation.

However the history shows that groups conquered political power without taking over economic power became a slaves of the last one and once they submitted themselves to the heavy economic interests they have been kicked out from the political power by even more reactionary groups than those previously defeated by the Left.

In order to avoid this kind of social-economic disaster it is necessary to secure that there are well organized forces in the society, from button to top, ready to secure that the economy goes on, enable to generate and to distribute resources according to the new conditions. In other words, it is necessary to build an economic power and the workers have to take a lead of it.

If we do want that something happens in our poor societies we have to work in order to transform our waged half-slaved or slaved workers into free producers aware of their economic, social, political and environmental importance.

We must work to make real transformation happen in the core of production of the knowledge and wealth. That is, the transformation at the working place that will allow working class retrieve its knowledge about organization of work and production, about distribution of wealth, and to take over the knowledge produced in there.

In order to attend these matters the **MCPP (CMPP – Comparative Mapping of Production Process)** was developed in cooperation and under participation of different people in collective way. It is an instrument that permits workers to retrieve knowledge about their working place at first, in order to use it afterwards as a tool for organization of work production process, and distribution of wealth. The MCPP helps to understand in the more effective way than the old rhetorical left slogans how is the production process organized and who is benefited by it?

The MCPP is a real tool that constantly enforces union and political activity at the working place and in the society.

Why?

Because it helps worker to:

- 1) understand internal and external life of the factory;
- 2) take over the knowledge produced by themselves;
- 3) take part of the auto-educational process;
- 4) be able to interfere into the decision-making process;
- 5) assume their citizenship.

In order to bring it to the light there were organized various courses of so-called continuing education (CFC),

publications, gatherings and seminars. In conjunction with the Union Movement there were created the true open events allowing workers, grass-root unionists and union leaders to:

- retrieve accumulated knowledge;
- exchange information and experience;
- deepen the knowledge;
- keep up capacity of auto-organization and mobilizing.

The events met the requirements of flexibility, freedom and discipline.

When we have democratized events, carrying on transversal and comprehensive debates, trying to include new topics, people and ideas, to avoid any type of paternalism, discrimination and segregation, the possibilities to transform words and practices that our union midst is addicted to appeared; the new forms of worker's organizations began to be built; the new priorities started to be discussed.

No doubts we are living the period of the important transition of the world history. The old concepts are being substituted at an incredible speed. Some years ago all the countries were divided into the developed and undeveloped, the First, the Second and the Third Worlds,

the capitalists and the socialists. Today we can see the world cleft into Submerging and Emerging countries, the old powers that don't want to lose the rains and the new ones eager to take part of the banquet of socio-economic welfare.

The new period brings to us the new challenges. You cannot build union movement as one did it in 70ties or 80ties. You cannot just live on memories of the past or on the same litany of the struggle of the good against the evil, where the workers are seen as victims but not as agents of the social and economic changes.

We need to create new ideas, new practices, new concepts that can let us to build the new world, beginning with the new power relations, starting with the economic sphere, permeating all the social tissue and creating the new humanity.

Naturally, we don't suggest to reinvent a wheel, to destroy everything and to start from zero or from the ruins, but we do suggest to use the accumulated human knowledge to create the new, developing the principles and the agreements that allow us to act according to a new requirements and in a coherent way.

This publication doesn't bring made solutions for all the problems faced by the workers, but it runs through the instruments that can help us to find the necessary answers by mean of permanent organization and mobilizing of

workers at their working places. It is perfectly possible, if we understand, that:

1. The greatest capital of every union organization is its members;

2. Everyone has some kind of knowledge. One needs opportunity to express it and to apply it.

3. The good sense is as good as the knowledge. The simple always is better than the complicated;

4. The transparency and the flow of information make easier the decision-making and minimize conflicts;

5. The great and challenging goals make everybody row to the same direction (that means unity on practice);

6. It is necessary to join good people, members of the unions, and make them play in one team;

7. The leadership is of vital importance and is better expressed in the day-by-day small gestures than in the heroic or mass media acts;

8. The main goal of the leadership is to choose people better than themselves, train them, challenge them and support them;

9. Good people, education and planning secure functioning of the organization;

10. Results and achievements draw up more members, fortifying the union organization;

11. Responsibility is essential: debates are desirable and necessary, but decisions must be made and must be implemented. Consequences must be assumed by everybody. Don't be afraid of to assume and to analyze it when it is negative;

12. It is impossible to be perfect in all the points, we have to have a focus and be able to identify capacity of each one, concentrating on what is essential;

13. The good luck is always a result of a hard, serious and well-planned work;

14. To be in a bad mood doesn't mean to be serious. So, function and don't lose a joy and a humor;

15. "If you know how to use it, it'll be sufficient" - Don't be paranoiac with the expenses, because it is the only thing we do can control;

16. "Don't want to reinvent a wheel" - Stimulate constantly innovations using the concrete experiences that have brought positive results and that can be adapted to our life and necessities;

17. Organizational and personal modesty are essential. You want to show up? Just if it goes along with the concrete goals of the organization of workers;

18. Self improvement, continuing education are the constant efforts that must be integrated to our day-by-day life;

19. The name, reputation and coherence are invaluable “marks” built during decades but can be destroyed in days, hours or even in minutes;

20. The so-called smartness as well as any kind of informal or even illegal problem-solving ways destroys organization from within, because it corrupts interpersonal and inter-organizational relations. Ethic brings fruits in a long terms.

Intention of the present publication “**Comparative Mapping of the Productive Process**” is to contribute to debates that strengthen Union and Working Movement by socializing knowledge produced and accumulated at this field. It will make possible that the past experience associated to the critic analysis of the urgent necessities can help us to develop innovating union ideas and actions that we need so much today.

The “Comparative Mapping of the Production Process” consists of two books. The first one is about development and evolution of so-called administrative schools and deals with the theoretical part of MPP – Mapping of Production Process. The second book is written in a light and schematic form and deals with the development of MPP till the nowadays state of MCPP – Comparative

Mapping of Production Process, passing through the very important issue of Calculation of Working Power, that in connection with the MPP and Comparison of the Process constitutes the instrument of union actions known as MSPP.

Materials of present publication will be available to serve as a support for activities either of educational or of union action character, they can be used together or in separate, as a material or as a source for day-by-day consulting.

Decision of how to use present materials in a better way belongs to the worker and unionists interested in building of a new better world where the working class won't be any more just an executer of the orders elaborated by the others, but a protagonist and a subject of its own existence.

TIE-Brasil

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Mapping of Production Process

Introduction

“The bourgeoisie cannot exist without constantly revolutionizing the instruments of production, and thereby the relations of production, and with them the whole relations of society.”

Karl Marx e Frederich Engels
Communist Manifest, 1848

“It should be comprehended that there is no freedom without equality, and that realization of full freedom in the most perfect equality de facto and de jure, politically, economically and socially at the same time, is a justice.”

Mikhail Aleksandrovitch Bakunin

“If I'm rich in something, then I'm rich in doubts, not in certainties.”

Jorge Luis Borges

Rationalization and flexibility of production, automatized factories with a few workers, sophisticated mechanisms of work-controlling, such as CCQ, KAN-BAN, JUST-IN-TIME, out-sourcing, modular systems, work in groups, nano-technology, computerization, communication and globalization are the words and the concepts all days long unceasingly repeated by those in power and by the mass media.

With time the form of how to think and how to organize the work was modified more than once, and

being analyzed, these modifications reveal a tendency of the capitalist production process. The modifications occurred so quickly and affected various countries and sectors, have drawn into the light a necessity to make a deep research of organization of work and production strategies.

In order to understand where the work is going to, today, after the break down of “soviet socialism” and after the attacks and excesses of current neo-liberal or neo-conservative capitalism, the analysis of work as a part of all the production system has to be done. If we want to understand how can be possible that work brings disastrous consequences for the workers, for environment and for union movement, then we need to think about its function and role in the capitalist wwproduction process.

From the beginning of the phenomenon known as the Industrial revolution, since the steam machine had been discovered (about 1760), the world entered into a deep and continuing social transformations.

Production of the consumer goods that until that moment had been made by a craftsmen, individually or in families, existed in a small scale.

The tools used in that time were manual and in many cases built by workers themselves, work was thought and done by the same person. When the machine had been introduced, production was gradually transformed into a flow production, seeking for a bigger and bigger market. Work, its realization and a form of its execution, as well as a form of how to think and how to organize production process, suffered transformations that should be made in order to attend goals of the new growing class: factory owners (businessmen), whose interest is to extract greatest profit from work in as shortest as possible time in exchange for wage.

Logic of the wealth accumulation has been established. It doesn't permit in the most of cases such a romantic thoughts like protection of nature or the more human work. Inside the capitalist system everything, including a worker, the forests, the rivers, the beaches, the mineral or animal resources, the machines, health, education, etc. are treated as commodities.

When the worker accepts to exchange his productive capacity for wage, becoming somebody's employee, he starts executing work in accordance to the employer's logic (owner's logic). He is submitted,

then, to the working conditions (rhythm, working hour, turns, wages, etc.), to the new forms of organization of production and proper work determined by owner.

As an answer to the business necessities the “schools of thought” appear, aimed to improve more and more the forms and the methods of extraction of profit out of work.

In XX-th century various Schools of Administration as Taylorism and Japanese Administration Philosophies, for instance, grew up and developed, as well as production systems based on them or applied by them in practice, like Fordism (Mass Production) and Toyotism (Lean Production), respectively.

These capitalist production systems aimed, on one side, to increase productivity and to decrease production costs and, on another side, to bring a worker on side and minimize union movement activity or in some cases use the union as a conductor for introduction of the new methods and business techniques.

1.The Third Industrial Revolution is application of informatic, robotic and mechatronic concepts into productive processes, automatizing them, leveling them and decreasing the working power obtaining at the same time constant increase of productivity.

Present model of development dictated by neo-liberalism and by so-called “Third Industrial Revolution” has created various strategies aimed to achieve a high level of efficiency.

Enterprises are re-structured, modern production systems are introduced, automatization and out-sourcing decrease the number of workers, increase the rhythm of work and the consequences can be seen in different aspects: in wages, working hour, turns, professional qualification, organization of workers, accidents, occupational diseases and environment.

Today we have production process characterized by:

- standardization yields place to extend variety of commodities (different things attract attention);
- quality control is present at every rhythm and every sequence of the process, because when the competition is growing the winner is that who conquered ISO (quality certificate of International Organization of Standardization);
- there aren't a great stocks any more, because new consumer necessities are generated every day by marketers and mass media.

In the world of work the multi-functional professional occupies the place of that one who has a command of only one occupation; training is overestimated; creative capacity of worker is stimulated and participative leadership breaks down authoritarian command.

In order to make this reorganization be possible, the structure of labor market is being adapted to the new production and technological paradigm, its slogan is productivity, competitiveness and profitability. This adaptation is made at a very high social costs. These changes bring about the market where the regular job (the full-time job), stable, secure, with real wage, social advantages is becoming scant for majority of people. It is being replaced by temporary job, partial, casual job and other sorts of job that in fact represent so-called "disguised employment" or "precarious work". These conditions are much worse than the acceptable standards, and it restores the period preceding Fordism. Besides, the so-called "structural unemployment" (or technological) is pushing a great number of people aside of the labor market. It becomes global practice and tends to grow up at the same rate that technological properties do. The enterprises are really obsessed with the reduction of costs and increasing of productivity aiming the augmentation of their competitiveness.

Thus, reorganization of the world of work in globalized economy is paradoxical; it generates uncertainty in all the aspects (market, employment, rent and representation), and in fact consists of disorganization that, paraphrasing Gramsci, is reflected upon the way that one lives, thinks and feels life today. If the Second Industrial Revolution brought transformation of labor into a wage labor, the Third one is bringing the end of it, transforming science and technology into a producing forces, the fact that represents a great challenge.

If workers have no solid class vision and don't start seeing struggle in general not corporative way, they'll have to compete between each other, between the factories and occupations.

It is extremely important to understand that it should seriously invest into the Work Place Organization, aiming to build the power in fact, taking over the knowledge and interfering into the production process. Because there is a risk of repetition of Constantinople, where the Turkish occupied the town as the "illuminated" westerners were discussing sex of angels.

We can see today that the Representation of workers cannot tear away from the old structures that tie and

gag it, being deeply vertical and horizontal in the least. Using the Marxists concepts in a wrong way, they lose the time for fruitless debates and discussions about the appointments inside the established structures, there are no investments into working democracy at the production areas.

It should start, then, to build our own worker's logic, and to develop the instruments for actions that allow us to interfere and put under control production process by means of taking over the knowledge or retrieving the working knowledge and elaborating proposals by workers themselves.

Before we pass to the Mapping of Production Process itself, the instrument that allows us to retrieve the knowledge and to build effective power, it is important to study a bit of history of development of so-called "Schools of Administration". It is important to understand how did capitalists gradually change the forms of organization of workers and production in order to maximize their profits and exploitation of human capital for their own benefit.

Knowledge of Workers

A precious secret: our professional knowledge

Every enterprise has a list of norms, procedures and rules determining how the work must be done. There are tasks, quality and quantity standards, means (machines, tools, equipments, etc.) prescribed to each worker or a group of workers. It is called a prescribed work, that is, the way that the enterprise organizes the work, the manner that we, the workers, must work. In other words, it is the **Organization of Work** that the enterprises make us carry out.

However, this organization of work has never corresponded in details to the work done by us in fact. Why does it happen? Because at the moment when operation has to be done various unforeseen circumstances appear.

We call those acts that weren't previewed by the enterprise "informal work". Something that hasn't been described or formalized. That is, we, the workers, know that if we keep strictly to the chief's orders, production doesn't go on, because when something happens, it is us who finds the solution to make things go on, aren't we? Yes, we are. We, the workers,

can do it thanks to the fact that we are the only one who knows how to make things work: tricks, manners, modes, tactics, adaptations, our own instruments among the other million of things. The intellectual activities that we, the workers, do, while execute our tasks.

What happens when we follow chief's orders and don't use our practical knowledge?

Workers transform the life of the enterprise into a hell if limit themselves just to carry out the established rules: delays, bad quality, etc. begin to appear. If there is no efficient participation of workers, no "something else", no informal communication between the workers, that is, co-operation, production cannot go on, products aren't made, there is no transformation.

For example, one of the most traditional forms of struggle of airplane pilots is called "operation standard". It means that all the norms, procedures and recommendations established by the enterprise must be carried out strictly to the letter. What are the results? Delays, canceled flights, enormous cues at the airports and reduction of incomes of the enterprise.

The bus drivers refuse to provide their informal knowledge to the enterprise when want to require something, as a form of struggle.

In Belo Horizonte city, the capital of the state of Minas Gerais, some years ago there was organized so-called “big sausage operation”: the norm prescribed 40 km/h speed limit and traffic on special line just for buses was strictly observed. It caused a terrible chaos in the city traffic.

Radio of Plodder

Besides there is so-called “Radio of Plodder”, that is informal communication network between the workers inside the enterprise. It is a real network of the informal relations, that makes production flow speedily.

Radio of Plodder or the informal relations happen when:

- One maquila worker, for instance, notes that certain product has a problem, and directly contacts the raw materials reception and checking-out sector.

- One worker from the caramel factory saw the machine operating with defect. She doesn't communicate chief, she calls directly Maintenance sector or if it is possible fix it by herself.

- One automobile worker notes that the part comes to his hands in a wrong position. Immediately he warns his colleague to solve to problem and by this avoid loss of time.

Thus, informal communication is not previewed by enterprises, but the proper enterprises obtain advantages from it, as far as it is so useful to make production flow. Without our day-by-day knowledge belonging to us only and that no chief knows, the owners couldn't produce even a half of that they get profit out with us. An enterprise and a chief know a theory, while we, the workers, have got the practice. A thing doesn't work without it.

That's why significant part of the efforts of studies at the area of management, organization of work and production is directed to control workers knowledge and to use it in a better way for the enterprise's interests benefit. We'll see it further.

Administration Schools

Scientific methods of organization of work and production or the techniques of social domination?

It is impossible to live in our society if you don't control totally your time, if you don't frequently spy watch even when you have nothing to do.

When we attribute an extreme value to the time-market and to the time-money relations, we leave aside determination of time measured by nature. Nobody says any more that water boils in a less time than a prayer is pronounced or that somebody died before the next harvest. It sounds ridiculous in our society. We define everything in hours, minutes, seconds.

We've transformed time into a commodity and to stay idle or "to do nothing" is seen as a problem. To stay idle means an "idle time" opposite to "time of work", it shows how far does the work stay away from life.

We've accepted a game imposed to us and became slaves not of the other human beings as it used to be earlier, but of the commodities produced by means of

techniques of management of time and resources. Our working power was transformed into commodity too, and into one of the resources subjected to be controlled, dominated and organized from up to down in accordance with a certain standards of time and administration of resources.

All well-going work and production organization needs workers to reckon upon. It should make them believe that what is good for owner is good for worker. Otherwise things don't work.

The owners know that it is necessary to create new values in order to make things work in a proper way. The enterprise calls these values "organizational culture".

It is clear that the enterprises didn't take so-called "organizational culture" out of nothing. It is a result of different knowledge accumulated by owners during long period of time.

At the beginning the necessity to add scientific character to the administration of resources at the enterprises gave the origin to the Classic School of Administration and its multiple versions.

After the decades of application of Taylorism, the prime mover of classic management, owners started questioning it as it became improper for practice: it instigated a conflict between capital and labor.

After the Second World War owners realized that the new culture should be created. It should guarantee in a “soft” way that workers would believe in new enterprise’s promises.

Today there are policies of human relations at certain enterprises that, for instance, use industrial psychology, techniques and methods, to enlist workers substituting working values (brotherhood, solidarity, mutual help, friendship) by competitiveness between them, and at the same time they accept to negotiate almost everything under the pretext of modernization of relations between capital and labor.

Taylorism

Taylorism is a sum of studies developed by Frederick Winslow Taylor (1856-1915) and used by industries of all over the world, determining organization of labor and production as we know it since XX-th century.

Taylor in his studies tried to discover scientific method of operation of industries: how to operate it efficiently, getting the maximum incomes. His goal, then, was to increase profitability and productivity with no time losses in production. Concentration and centralization of capitals happening at this monopolistic period of capitalism (end of XIX-th century), are manifested in growth of factories, joining thousands of workers at the same working area.

Taylor thinks and bases his system on idea that every worker practices "systematic indolence", that means, he produces less than he could and does it purposely. Economic depression of the end of XIX-th century and an avalanche of immigrants arriving to the United States seeking for job were making people believe that the less they would work the more jobs would be. According to this vision the "to do nothing" was the way to manifest class solidarity as well as attempt to

keep the job. This political position of north-American workers shocked with the Taylor's theories of productivity.

Taylorism showed up thanks to this confrontation as well as to the fact that it showed that according to the owners' vision there is a certain form of “anarchy” in the forms of production. In spite of the factory system had already implemented division between manual and intellectual work in the production process, specific tasks still belonged to the workers. Workers taught the work to each other orally.

Taylor would say that every movement and every task executed by workers have a science, a “professional knowledge” born from the worker's creativity. So, as each worker has got a science, the attitudes cannot be taken upon by workers themselves but should be classified, studied and systematize by Scientific management.

The intention, thereby, is to separate the stages of planning, conception and direction of executing tasks.

Looking for “A man, the ox”

According to Taylor, all the problems were caused by “soldiering” practiced by workers that should, by Taylor, increase working rhythm and production. This position resulted in menaces of death that Taylor received from workers he used to work with, but he went on in implementing his ideas regardless over-exploitation of working power.

A classic example used by him is that of handling pig-irons. Thanks to a proper use of methods developed by him, handlers started handling almost four times more pig-irons than they had handled before.

For obtain these results, Taylor contracted one worker that he denominated as “type ox”, a strong and phlegmatic one. Taylor paid him a better wage for realization of his working program. The words used by Taylor about this worker show clearly the disdain for working class.

“As to the scientific selection of the men, it is a fact that in this gang of 75 pig-iron handlers only about one man in eight was physically capable of handling 47 1/2 tons per day... Now the one man in eight who

was able to do this work was in no sense superior to the other men who were working on the gang. He merely happened to be a man of the type of the ox, no rare specimen of humanity, difficult to find and therefore very highly prized. On the contrary, he was a man so STUPID (*TIE*) that he was unfitted to do most kinds of laboring work, even." (F.W.Taylor, "The principles of Science Management", 1911, e-document)

The basic principles of Scientific Management or Taylorism widely spread at the industrial area and from 1960 extended upon the third economic sectors, centralize the decision-making power in the direction hands, excluding the direct producers from the conception and production planning. The worker has merely to execute the instructions, that means to subject himself to the despotic hierarchy of the factory. Direction is qualified to direct, control and watch the workers, at any costs preventing horizontal communication and articulation between them.

Expropriation of the Working Knowledge

By developing individual work for each element, a science to substitute rules of thumb, Taylorism is trying, as something necessary for owners, to reduce complete **WORKER'S KNOWLEDGE** into its simple elements,

to study time for each work in order to find a necessary time to do each operation. Introduction of chronometer for diary tasks made it possible.

Having this information in hands manager has to compile all the INFORMAL KNOWLEDGE acquired by workers and classify, systematize and register them in form of rules, laws and formulas, giving them back as the only best way. This is the way that the owners appropriate the Worker's KNOWLEDGE to elaborate the most profitable method. The only thing remained to a worker is to fulfill instructions about how should the work be done and what is the period of time for it. By means of implementation of hierarchic and despotic relations at the factory the new field of knowledge was constituted. It represents a reinforcement of domination over the worker.

Thus, Taylorism, being understood as a method of "scientific" organization of production is in fact more than a production technique, it is a **social technique of domination**.

Under this context the system of Taylor is seen as the Owner's strategy seeking to transform a worker into someone politically phlegmatic and economically profitable. Its aims go a lot farther

than just to economize the time, the aim is to transform a worker into a **Solder of Work**, militant of production. It is an owner's strategy to intensify exploitation.

Taylorism also tries to carry a face of neutrality and efficiency, as if the techniques would have its proper laws that one cannot and shouldn't resist to.

All of it shows that the technique is not more than consolidation of specific knowledge, that cannot be separated from political context, that is, from the social form of its utilization.

Taylor comes to conclusion that **Worker's Knowledge** is an extremely powerful arm in worker's hands and therefore it should be expropriated by the owners in order to be transferred, systematized and classified by Scientific Direction.

Fayol and industrial and general administration

Henry Fayol (1841-1925), civil engineer dedicated his life to Commentutry Join-Stock Company – Fourchambault et Decazeville. He began as an engineer and then he moved to the general management and became a Managing Director form 1888 to 1918 when he had retired.

Fayol, basing on Taylor's minutes, using a positive philosophy, consistent cartesian method to observe and classify facts and to interpret them, to experience and to extract rules , if there is correspondence, developed a kind of theory of management and administrative model that was warmly received at his time.

Fayol's administrative model is based of three fundamental aspects: specialization of labor, application of administrative process and formulation of technical criteria to orient administrative function.

Fayol divides operations of the companies in:

- **Administrative or managing ones:** preview, command, organization, co-ordination and control.

- **Techniques of production:** fabrication, transformation of raw materials
- **Commercial:** buying and marketing, search for markets.
- **Financial:** search for capitals and administration of capitals.
- **Accountancy:** registration of inputs and outputs, inventory, balances, statistics, prices.
- **Security:** Protection of goods and people.

Fayol's General Principles of Management

According to Fayol, management function relates in all parts to the social matter. Though the other functions lead with the raw materials and equipments, the management function deals with people only.

The Fayol's most used principles of management were:

- **Specialization of labor:** It is a natural order. The worker who make the same piece day after day or a foreman who constantly deals with the same issues acquires ability, security and accuracy that increases

his efficiency and output. Every change of occupation or task implies an adaptation effort that reduces production.

- **Authority:** The right to give orders and the power to expect obedience. There is a difference between the legal authority proper to the function and the personal authority consisted of smartness, knowledge, experience, ethic values, aptitude to give commands, etc.

- **Discipline:** consists of bending of rules, in the first place, as well as of activity, presence, external signs of respect abode by according to the convention established between the enterprise and its agents. Fayol considered that this concept has its expression in a military world, and in order to achieve harmony in organization and exact carrying out of norms, the concept of convention should take in consideration.

- **Unity of command:** Each worker should have only one boss with no other conflicting lines of command. Fayol considered this principle to be at least of the same influence over the run of business as any other principle is.

- **Unity of direction:** Only one boss and only one program for one group of workers with the same task.

- **Subordination of individual interests to the general interests:** The interest of one person or a group of people shouldn't outdo the interests of the enterprise.

If there is an agreement, the mostly observed interests can get results among all the others.

The ways to achieve it are:

- A firmness and good example of bosses.
- As fair-minded as possible agreements.
- Incessant vigilance.

- **Remuneration:** Constitutes prices for services. It must be fair and satisfy as far as possible both the enterprise and the person, the employer and the employee.

The employees can be paid by hour, by task or by piece.

- **Centralization:** as well as 'specialization of labor', it is an issue of natural order. It can be explain in the following way: as every animal or social organism has a brain for the center where all the feelings converge and where the orders moving all the organism's parts come from.

- **Hierarchy:** Formal chain of commands running from top to button. The way that communication flows, passing by all the echelons from superior one to inferior one.

- **Order:** All the materials and personnel have the prescribed place and they have to remain there.

- **Equity:** Justice is an implementation of established agreements; equality and equity understood as a way of treatment of personnel

- **Personnel Tenure:** The new employee needs time to start with the new function and execute it well, under the condition of being apt to do it. If the employee is moved right after conclusion of training stage, there is no time for work to bring fruits.

- **Initiative:** One of the mostly vivid feelings experienced by a smart person is to take out a plan

and to make it happen. It is also one of the strongest stimulations for human activity.

- **Unity of people:** Unity constitutes power...

Fayol introduced the hierarchic scheme and deepened the issue of specialization of labor. He emphasized by this the issue of structure that the organization has to possess in order to be efficient.

The most part of Fayol's theory is dedicated to precepts for authorities, creating thereby a "School of management" for bosses.

Countries like Brazil that were strongly influenced by French culture at the beginning of XX- the century positively received Fayol's theory. Different institution and the old Railway Sorocabana are still keeping reminiscences of this management culture.

Elton Mayo: the social man

“Human Relations” is the frequently used expression to designate the ways how do managers treat and work with their employees. When the “management of personnel” stimulates the more and the better work, the human relations of the organization are “good”. When the efficiency and a spirit of things begin deteriorating, human relations turn “deficient”. To maintain a good pattern of human relations the managers have to know why do the employees act, how do they do it and what are the social and psychological factors that move them.

Mayo is considered to be a founder of Movement of Human Relations in Industrial Sociology.

Experiences of Hawthorne

One of the famous studies about human behavior in situations of work was led by Mayo and was carried out from 1927 to 1932 at the Western Electric Hawthorne Work, near Chicago. In course of time these studies became known as “The Hawthorne Studies”

At the beginning the goal was to study fatigue, accidents, turn-over on work and the effects of physical conditions on productivity.

During some of the first studies the researchers of Western Electric separated people in the groups of experience subjected to deliberate change of illumination, and the control group with the constant illumination during the experiences.

The results were ambiguous. When illumination was improved in the experimental group, productivity was growing as it was expected although the augmentation wasn't uniform. However productivity kept growing when the illumination went down. Moreover, production of control groups was growing too, whereas there were no changes of illumination in the control groups. It was evident that something more than just illumination was influencing worker's performance.

During the new sequence of experiences the small group of workers was put into a separate room and some changes were made; the wages were increased, the rest periods of different duration were introduced; the working hours were reduced. The researchers pretended to be a foremen. And the groups were allowed to choose their rest periods and to show their opinion on the other suggested changes. Once again the results were ambiguous. Performance was growing with time but it was growing and going down in a

non-uniform way. Elton Mayo (1880-1949) and some of his colleagues from Harvard University, like Fritz J. Roethlisberger and William J. Dickson took part in the experiences.

They have concluded that the financial incentives offered to the workers weren't a cause of augmentation of productivity. They thought that there were a series of attitudes drawn out these augmentations. As the groups of experience and the control groups were selected to receive a special attention, they developed a kind of a proud of group, that stimulated them to improve their work performance. Benevolent supervision reinforced their motivation too. The researchers came to the conclusion that the employees improve their work performance if they think that the employers are interested in their welfare, if the foremen pay special attention. This phenomenon was later called a Hawthorne effect.

The researchers have concluded as well that the informal working groups (social environment of a person) have a big influence on production. Many of the employees considered their job senseless and boring. But their relations and friendship with the other workers, sometimes originated from a common antagonism against "bosses", brought a bit of sense

to their working life, giving them a partial meaning of protection against management. For these reasons the group's pressure, not the orders, has gradually influenced personal productivity achieving maximum.

Thus, for Mayo the concept of "social man", motivated by social necessities such as to stay by one's side, to be recognized, to identify oneself as a part of the group, to be well-treated and to get a good communication, was opposite to an old concept of "Homo economicus", motivated by personal economic necessities, the concept maintained by Classic School of Management.

Mayo introduced a drastic modification into a Classic Theory of Management and opened spaces for uprising of different branches of School of Human Relations, such as: study of motivation and satisfaction on work; group dynamics; formation of democratic leadership and study of communication.

Industrial Psychology: Pyramid of needs of Maslow

Human needs have got two particular points of a great economic importance:

a) they can be smoothed or satisfied by the objects different of those initially wanted;

b) it is impossible to satisfy all of them in a global and definitive way as far as they are multiple, are able to reproduce and the new ones constantly appear.

Existence of the unsatisfied needs, from one side, is a reason of individual and social malaise, but, from the other side, it is a stimulation of material progress, that is, of production of the new means that would satisfy the needs. It doesn't mean that the economic production goal is satisfaction of one's needs directly and exclusively. In our societies the system of free enterprise stimulates production offering benefits to the employers, to the individuals who decide what to produce and how to produce. The employer who was able to satisfy one unsatisfied need of someone who is ready and is able to pay for it, will be successful.

There is an explanation of why a great part of world population cannot meet a form to satisfy its basic needs, although the greatest production forces are dedicated to satisfy social needs of the part of population of major purchasing power.

Specialists of marketing pay a special attention to the pyramid of needs drawn by American psychologist Abraham H. Maslow. He thought that the human needs have an hierarchy and are scaled, that means that the higher needs come into focus only when the lower needs of the pyramid are met.

Maslow's Pyramid



According to Maslow, the basic needs are the body needs, food and water. When the basic needs are satisfied, one becomes concerned about security of the future and security against any possible damage. Once the individual feels physically secure, one starts seeking social acceptance; wants to identify oneself and to share one's tastes with the social group and wants to be accepted by this group as its member. Once the individual is integrated into the social groups, needs of success and status come out. Finally the individuals that have satisfied all these stages of needs come to the edge and, feeling that they give out everything they can, want to create.

In the developed countries the physiological needs and needs of security are met by majority of members. That is why the enterprises produce and offer means to satisfy the needs to belong to the social status group. Coca-Cola doesn't satisfy thirst, but it satisfies the need to belong to the group of young cool people. Mercedes Benz seeks to satisfy the need of social success and status.

A beauty of Labor in fascist Germany

“There will be only one nobility in the future,
the nobility of Labor”

Adolf Hitler

Fascist regimes climaxed glorification of technique, productivity and rationalization of process of work and sought to create an aesthetic symbols for justify the power. Aesthetics and policy were strictly linked to fascism that sought to beautify production space and to transform a worker into somebody phlegmatic by means of multiple strategies.

The movement of renovation of the world of Labor emphasizing transformation power of technique was started in 1934 and it was directed by the Department of Beauty of Labor, which was established one year before as a part of fascist organization “Force for Joy”. Its core goal was to transform working relations and to attract worker's support by means of beautifying inside and outside views of industrial and office premises in Germany.

Toward 1939 almost 80 000 factories were reformed both, inside and outside, according to the projects of the Department of Beauty of Labor. German industry gained a new image thanks to ostentatious improvement of working conditions: better ventilation, better light system, canteens and wc's were opened, walls were reformed and painted, uniforms were repaired and parks and gardens with flowers around factories were built. All these things were aimed to create illusion of social harmony in worker's hearts. In order to compensate growing of exploitation of workers caused by vertiginous intensification of production rhythm, Department of beauty promoted building of "common" rest places outside the enterprise in addition of the entertainment areas. That was the way the Department of beauty of Labor promoted a new dimension of fascist ideology fostering the idea of dedication to productivity and efficiency, the idea that invaded either aesthetic or political domain.

During these years there were several convincing campaigns such as: "GOOD LIGHT – GOOD WORK", "CLEAR MEN IN CLEAR FACTORIES", "HOT MEAL AT FACTORIES", etc. The Department intended to put down the image that the factory was a space of selfish exploitation, seeking to dissolve any form of

working class consciousness and to inhibit any type of reorganization of working movement defeated at previous decade.

The growth of the Department was so significant that since 1939 it had had five divisions: Administration, Project of Artistic Factories, Technique Projects, Researches and Innovations and a Beautiful City. The second division was responsible either for the inside reform of the factories, or for the “model factories”, thought and built by the Department annually. The third one was occupied by scientific researches about light, ventilation, noise, dust elimination and its practical application. The fourth one promoted a different Department's projects and approved initiatives of industrial representatives that wanted to follow its ideas. The last one, as the name says, was responsible for the beauty of German cities.

The greatest challenge of the Department of Beauty of Labor was to make a worker to be phlegmatic, suppressing traditional conflict between the capital and the labor by means of improvement of working conditions. Fascist ideology believed that the physical purity at the factories would simultaneously bring a “moral purity” of the forms of dissatisfaction in worker's spirit.

From the workers' point of view, however, situation was different. Abolishment of Unions, prohibition against working organizations, political leaders imprisoned as well as reduction of wages during fascist regime confirm the merely discipline functions of these measures.

The silence of workers when using a new establishments was something inadequate to the Department's declarations. In fact, it would be very difficult to make workers become phlegmatic as the proper realization of the projects depended on the execution of "additional beneficent hours", that is, not paid.

Department's campaigns strove to convince workers in their "anti-capitalist" character, building the myth about factory "without proletarians", with the "team of collaborators", realizing the same tasks as they had a common national goal.

Although the conceptions and realizations of the Department of beauty of Labor can be seen till nowadays, its success was not total. From 1938 to 1939 dissatisfaction of German workers with the low wages and restrictions originated by state intervention into job market characterized by lack of working power, made productivity go down.

The new image of factory and beautifying of the production space didn't achieve expected victorious results in the struggle for enlisting German workers, that were subjected to the excessive charge of work and humiliated by denial of their potential.

Japanese Administration Philosophies

The so called Japanese Administration Philosophies were applied first by Toyota Motor Corporation. That's why many people mistakenly use the name Toyotism as a synonym of JAP.

With the help of north-American theoreticians such as W.Edward Deming that worked in 1920s at Hawthorne plant of Western Electric with Elton Mayo, the so-called Japanese Philosophies started developing at the end of 1940s, at the beginning of 1950s. It was a result of integrating initiatives led by north-American technicians and administrators and Japanese engineers and scientists.

Deming was enlisted in 1947 by Occupational Forces to prepare Japanese sense in 1951. Japan was paying a high price for its participation in the Second World War. Its industrial base was ruined, 668 thousands civilians were dead (according to official data) and the agricultural production corresponded only 1/3 of that before the war. The Occupational Forces commanded by American general Douglas MacArthur made a little during two years of control over the Japanese territory. From the other side, one unknown group had established

a Union of Japanese Engineers and Scientists – UJES – having as a goal country's reconstruction. This group was gathering every night to discuss and to exchange ideas. It was the “meeting” of Deming with UJES and with Statistic Quality Control – SQC – developed by W.A.Shewart, initiated debates that had been transformed into the basic concepts of Japanese Administration Philosophies.

From the side of practice, there was an interest of employers to regain their enterprises as after the Second World War Japanese workers occupied the factories in order to rebuild them. The employers afraid of the growing rank-and-file workers organization and sought the strategy to put the end to this power of worker. This strategy consists of tactics oriented to divide movement, fostering establishment of Unions at the enterprise level allegiant to the employer. It was possible during so-called “red purge”, open repressions against communist leadership at the post-war period.

At the recession period in 1965 the employers saw them ought to increase their organic composition and introduced package of measures including among the other issues the point of intense rationalization seeking the economy of scale and elevated organic composition, as well as intensification of job.

Rationalization was a strong point of the package necessary to achieve another ones. The methods of administration were still changing. The Goryka, a kind of Japanese Taylorism, implemented by proper workers, from button to top, sprang up.

There was a strong feeling of collectivism in Japan, very traditional for its culture. In the first place Japanese worker belongs to the working group, in the second place, as a part of the group, he belongs to the enterprise, and being a member of enterprise, he is a member of society, a kind of outsourced citizenship... This feeling of collectivism came down with the introduction of Taylorism, when the difference between manual and intellectual work was established. But it is revived with the implementation of the Circles of Quality Control (CQC).

The employers won the battle at the rank-and-file level. They could substitute worker's organization by their own rank-and-file, up to down controlled organization, the Circles of Quality Control. It was one of the first steps of the employer's strategy toward the regain of production control. They knew clearly that they would be able to re-establish their power just if they retrieve controle of the production process.

Japanese union movement went through a hard defeat deepened by employment of the new working forces. The new graduated workers with the north-American individualist world vision have been recruited.

More and more Japanese enterprises adopted JAPs and were turning more and more competitive not only at the local market. They gradually occupied a remarkable space in the “developed” markets like USA and Europe, drawing attention of directors of occidental enterprises.

As a result of changes occurred in the world post-war market, Occident adopts the new administration conception: until 60s everything that was produced was sold, because the demand overcame the offer, and the consuming population was growing continuously. But from 1970 the picture has been changed. The consuming population of the main richest markets stops growing, the petroleum crisis inflates all prices and the wages haven't followed the same expansion of the previous decades. Besides, the competition between the international oligopolies increased and, as a consequence, the offer in comparison with the demand increased too.

The Goals

The Japanese Administration Philosophies – JAP – rise and grow up in the context of urge necessity to reply the new market reality; where the enterprise to survive has to corresponde three points:

- Low costs;
- Flexibility of the offer, that means diversification and agility;
- Guaranteed quality.

Production is being conversed. Instead of going through the cycle production-storage-selling-delivery, it starts with the sells department (cycle selling-production-delivery) in order to be able to attend much more exigent and always mutating market. The things are produced if they are already sold.

The core and the basic idea is that the costs are drastically reduced when production is made at the exact scale, at the exact time and with the desired quality.

There are four essential ideas of the JAPs:

- Just-in-time (JIT)
- Automatization
- Flexibility of working power
- Creativity of ideas and thoughts

JIT in its ideal point means no storage, the components (produced by out-sourced suppliers) to be assembled into the certain equipment (a car, a computer, a fridge, a TVset, etc.) come to the assembling line at the very moment to be fixed to the final product. Reduction of costs happens grace to the annihilation of costs for administration, maintenance and movement of storages (warehouses, packaging, machinery, factory's spaces, etc.) and to the liberation of fixed capital and circulating capital, that can be applied into other productive or not operations.

There is another core concept of JAPs, the Total Quality Management (TQM). It is a production management technique seeking the absolute quality.

Minimum loss

From the employer's point of view, everything that doesn't add value to the final product, like indirect working power costs, re-work and corrections of finished product, is considered to be a waste and therefore should be cancel out. It means that operations like preventing maintenance, factory cleaning and components transportation pass to the workers, to the outsourced enterprises or to the sub-contracted workers. In this way, the employers cut up drastically indirect working power. By introducing so-called polyvalent jobs they also annihilate direct working power on the production itself.

Kaizen: the employer's philosophy to appropriate the working knowledge

The word **Kaizen** is a fusion of two japanese characters 'kai' that means change and 'zen' that means better. So, Kaizen means change for better.

The new market conditions help to seed the idea that all the employers want their enterprises to improve continuously their products, services and processes. One of the core concepts of JAPs is the continuous improvement. It brings a reduction

of costs, better capacity to keep delivery time, better service quality and more sells.

What is Kaizen?

Kaizen is a philosophy of continuous change aimed to evolve to the better practices, what is normally known as “continuous improvement”. Kaizen is not only a program to avoid the wastes and to reduce the costs. If we understand it in such a narrow way, we would limit its truth span and would not let it fulfill its truth potential. **Kaizen is an employer's technique that seeks to appropriate the worker's knowledge.**

The employers want the continuous improvement to become a philosophy transcended onto all aspects of life, not only in the enterprise framework. According to the employer's vision, this philosophy should transform the continuous improvement into the “culture how to be better for all”, that overcomes the economic sphere and in this sense becomes an ethic and behavior issue.

The employers maintain that Kaizen in difference with the other “enterprise philosophies” doesn't mean to reach a great changes, but substantial ones, because it fixes on getting small but continuous improvements in all activities with small implementation costs and with

the result of reduction of costs, better quality and higher productivity, changes that continuously bring more benefits than costs.

Implementation of the continuous improvement

However the continuous improvement is considered to be not a armchair issue, Kaizen from the very beginning of its implementation needs great concern and involvement of top direction of the enterprise. It must incorporate Kaizen concept as the corporative strategy and make a strategical planning starting with the classic analysis consisted of four points; Forces, Opportunities, Challenges and Dangers, that foster to identify clearly the enterprise's way.

After having clear the idea of “where” the enterprise goes to, the work at the working areas begins. The 5 statistic instruments of problems solution and work in groups are used. The goal is to increase productivity by means of controle of the processes, standardizing quality criteria and using methods of work per operation.

“The inhabit of Continuous Improvement is required at the all-organization level and with the commitment to reach the Total Quality” .

There are four basic steps of Kaizen application that form the structured process:

- Verifying of the mission: strategic planning
- Diagnosis of the root: identification and diagnosis of the problems
- Solution of the root cause
- Maintenance of the results

Once the four steps are made and the satisfaction of the client is improved, the new goals must be sought allowing the process to be restart, making it in fluent and continuous manner at every working area. Every time the process is finalized and the step of results maintenance is achieved the group involved into the improvement process is awarded. The award should be proportional to the achieved development.

The constant search for the new goals by the working groups keep them motivated and can bring beneficent consequences to the employers in terms of know-hows and quality of production.

To be able to obtain a positive results from Kaizen it should create possibilities to foster and secure

participation of workers, in other words to see the enterprise from bottom to top, to put people from the shop-floor to the first places once they do know what can be improved and how it can be made. It implies that either directors or the employees have to change their way of thinking, the first ones have to slacken the reins and the second ones have to assume a larger responsibilities.

The continuing improvement allows to identify the problems and to work for to solve them with the sensation of well-being not only at the enterprise but at home too, because the worker feels like to be somebody important, somebody who can contribute with something valuable, getting a perspective of growth even if it is still a theory.

The employer's definition of what is Kaizen as well as its philosophy, the way it should be implemented and the way the workers should be enlisted make clear that Kaizen is a technique of appropriation of worker's knowledge, originated from the shop floor or from the heart of production.

Rationalization and flexibility of working power

TPM: polyvalence at the maintenance

TPM is a **Total Preventive Maintenance**, promotion of the maintenance of productive system under participation of all the elements of organization.

Originally TPM was shaped in Japan in conjunction with the other philosophies constituting Japanese Model of production. Its goal is to achieve five basic points:

- Maximize operational global feedback of equipments;
- Globalized focus, taking in account a life circle of the next equipment;
- Participation and integration of all involved department of the enterprise, such as Programming, Production and Maintenance;
- Involve and make everybody take part of, from top management to workers;

- Collaboration of voluntarily developed activities by small groups, as well as creation of proper conditions for this kind of work to be conducted.

There are three factors that distinguish TPM:

- Seeking for economy;
- Integrated system;
- Spontaneous maintenance made by the worker (activities of the small groups);

According to these definitions, economy seeking is the core goal of TPM.

The goals

According to the employer's view, TPM seeks to achieve effectiveness of the proper organic structure of the enterprise by means of improvements that have to be introduced and absorbed either by people or by the groups.

In other words it means to create, to prepare and to develop people and organizations that will be able to conduct factories of the future, the automatized ones.

Training programs should be developed in order to board the following workers :

- **Operator:** must be able to make maintenance spontaneously ;
- **Fettler:** must be able to manage mechatronic (mechanic + electronic) activities;
- **Engineer of maintenance:** must be able to project and develop equipments that don't need any intervention of maintenance.

That is, the employer thinks that once the "man is changed", the machinery can be changed too. Improvement of equipment will result in:

- Improvement of global yield;
- Projects of new equipment taking in consideration costs of the life time and of its normal production regime beginning.

By these improvements of both, people and equipment, employer seeks to improve organic system of the enterprise, increase productivity and maximize benefit-cost relation.

In order to achieve global yield of the enterprise the “6 big losses” appointed by TPM have to be eliminated:

- Loss because of equipment breaking;
- Loss because of interruption for change of lines and adjustments;
- Loss because of the reduction of production nominal speed;
- Loss because of defects occurred in the process
- Loss because of momentary interruptions and operation standby;
- Loss to reach normal production regime.

Outsourcing

Outsourcing means transferring of responsibilities of service or a certain production or commercializing stage from one enterprise to another, and the last one, as a result, is called "the third".

Although many employers deny it, outsourcing also means sub-contracting of the internal services by workers for determined period of time, etc.

The process of transferring of activities to the thirds is not something new. It was happening along the whole history as a part of the social division of Work. For instance, the so-called putting-out system was very popular a little before appearance of the big factories in XVIII-th and XIX-th centuries.

Another clear and more recent example is the constitution of the supplying industry for proper car's producers, especially in the past century.

Finally, a range of attendant services (especially cleaning, inner canteen and guard) are administrated by the enterprises of the thirds and by the big corporations since some time ago.

In the last years the transferring of the activities get sped and became wider used. The outsourcing process is an international tendency associated with the goal of to “focus” the enterprise's activity and to review the role of the factory, leaving behind the more complex productive systems that co-exist at the same physical space under that same administration.

Besides, the outsourcing as a process can affect industrial structure and the economy conjunction of the society, it is associated with the range of technological and organizational changes and thanks to it is considered one of the basic elements of so-called Japanese Administrative Philosophies, although the contrary opinions exist (see Hirata, H. and Zarifian, P.).

In the world

In Japan flexible specialization is one of the typical industrial models based on the new forms of organization of job and on the decentralization of production by means of arrangements between the enterprises. The wage difference and the statute of dependency and loyalty subscribed with the big enterprises are preserved in name of relation stability and of the support that “mother-enterprises” offer to the sub-suppliers.

In Italy flexible specialization can be seen in so-called “Third Italy” (in the north-center of the country, in the cities like Rimini and Bologna), there are highly qualified enterprises established mainly by union activists and left politicians fired during the conflicts of 1950s.

In this case these enterprises form an enterprise's network based on historical struggle for co-operation defense, small enterprise's incentives and professional training.

Other interpretations indicate that during 1970s IT penetration into Italian economy sped up. The cause was not only economical but also political, seeking to break down union power in the big factories, such as, for instance, FIAT Group.

In Brazil

In Brazil the process of co-operation between the enterprises, from one side, is running shyly, the results, from the other side, are poor and instable because of low inversion made in the country and of the entrepreneurial culture strongly characterized by up-to-the-minute interest for elevated profits, for constant devaluation of the Work and Worker. It

reflects on social-economic results showed by so-called “Brazilian outsourcing”.

In majority of cases the employer pretends that the outsourcing is the history of success, hiding the negative experience, such as from Perdigão, Brassinter, Xerox and others.

In 1960s and 1970s Brazilian military government initiated a great up-to-down reconstruction of the enterprises which was especially strong during so-called “economic miracle” period. The situation began to change in 1980s when the need for the greater openness of the economy emerged.

Elimination of restrictions for import made the enterprises gradually reduce its national-faced, up-to-down activities. Since 1994 Brazilian enterprises have been exposed to the international competition.

Mercosul and FTAA brought deep transformations to the process.

In global scale it can be seen that outsourcing when applied in the situation of recession, hardly maintains general employment level.

Besides, outsourcing becomes one more element of the restructuring/modernizing/productivity increasing process running in the Brazilian industry. It is running under no negotiations with the Workers representatives or Unions and, as it has been said, in the periods of recession.

The impacts springing out of it in relation with Work conditions, Health and Environment are frightening, if there is no worker's control of the process.

Political issue

Meanwhile, there is another goal that is not appointed neither by employers nor by the management, which is to fight against union organizations; destruction of identity and unity of Workers; activity depression and promotion of major difficulties for strike and requirement movements development. In other words, control of production and of Work by means of the wide network of co-operation between the enterprises.

Jeronimo Leiria, the Riocel, a very big Brazilian cellulose enterprise's lawyer maintains that among the advantages of outsourcing there are reduction of number of employees, activity depression for strikes and difficulties imposed to the union organization.

Franck Davis, enterprise's manager, maintains that outsourcing has to be used to eliminate conflicts and standbys provoked at the strategical sectors of the enterprises.

Finally, Carlos Queiroz also says that enterprises get the reduction of wage costs and depression and diffusion of union activity.

Union fighting experiences

Big enterprises in Brazil use Kaizen. The others use more simple techniques like “To have a coffee with a manager”, “Policie of opened doors”, etc. All of them are not more than the moments, place and time created by the enterprise to talk to the workers, to make them pass their knowledge. Naturally, the mentioned techniques can never be compared to Kaizen, as far as the last is a philosophy of work and, therefore, should be accepted by those who work as a “way of being and life”.

Kaizen on Maxion

Maxion (former Perkins Motors) enterprise, placed in São Bernardo do Campo, São Paulo's suburb, implemented Kaizen but in a wrong manner. They created a hangar with the excellent working conditions to make possible that workers have “creative ideas”, can build machinery, tools or materials that they considered to be necessary for production improvement.

For example, a worker discovered in his day-by-day work that if one installs a lever in a certain point of the

line, production would go quicker. He communicated his master who sent him to the department called Kaizen. The point is that as the working conditions in Kaizen were much better than at the rest of the factory, a worker with time didn't want any more to be back to his sector or started inventing a heap of "new ideas" just to be send again to Kaizen. The mistake of the enterprise was to confuse a philosophy of work with the physical space.

The enterprise even offered money in exchange of the ideas. Worker's Representation of Maxion disclosed at the meeting the goal of enterprise to monopolize worker's knowledge. With the help of data of mapping made by the workers themselves it was possible to show that the difference between the payment offered by the enterprise and the profit that the enterprise will get with their idas was enormous (surplus value).

During the gatherings it was established a form of struggle by the workers themselves. It was decided that all of them will present many ideas, not the good ones, but those of no importance, in order to overcharge Kaizen department. It was also decided that among the suggestions presented by workers there should be those of improvement of wage,

working and life conditions. The idea was to show contradiction between the philosophical conception of Kaizen and its practical application.

It should be underlined that this union action was based on Mapping of Production, that made possible to obtain information gathered by workers, in order to prove the increase of production rhythm, reduction of wages, professional deskilling, flexibility of production and working power, accidents and professional diseases.

Outsourcing at VW in Brazil

Facing a big working organization and its pressure expressed by standby actions and manifestations, in 1991 Volkswagen of Brazil signed the agreement with the Working Representation and with the Metal Workers Union of ABC region about outsourcing. Since then no outsourcing project can be implemented unless and until it has been discussed, analyzed and evaluated by all sides.

There is a text of the inform of Gathering that took place in October 28, 1991. It says:

Outsourcing Issue

Company develops studies about outsourcing according to its working routine.

Studies related to the Anchieta Factory (São Bernardo do Campo/SP) are not valid any more.

The eventual implementation of outsourcing at the Anchieta Factory will take place only if it's been communicated, discussed, analyzed and evaluated together with the members of Internal Representation of the Employees (Factory Commission) and the Union.

*October 28, 1991
São Bernardo do Campo.*

Signatures: Representatives of Factory Commission, Union Leadership and Representatives of the Enterprise.

Other Experiences

The more recent experiences of struggle against decline of wage, working and life conditions of workers were registered in various Brazilian unions.

This is one of them. Workers of outsourced enterprise were brought together and at the general meeting decided that their union will be the same one that represents workers of the employer enterprise and not that one determined by current legislation. For example, the employer enterprise belongs to the Food branch and the outsourced enterprise is related to the sector of cleaning. Legally the outsourced workers that clean the food enterprise should be represented by the union of cleaning workers. But unions argue that in fact these outsourced workers work at the food sector as they clean the areas of food enterprise maintaining the level of hygiene binding by law upon the food enterprise and not upon the cleaning one.

Another form of action is to use so-called Behavior Codes or those of Social-Environmental Responsibility assumed by many Transnationals, or even the Macro International Agreements signed between

Transnationals and International Union Federations to press the outsourced enterprise keep determined general conditions of wages and work. Many outsourced enterprises have lost their contracts with the employer enterprises because they didn't keep the rules established in the above-mentioned documents. However the workers haven't lost neither their jobs nor working rights they managed to achieve, because they were contracted by the enterprise that assumed the functions of the previous one. In some cases it can be the new outsourced, in the others the proper employer enterprise can de-outsource that job.

The goal is to create a political acts that will check up in practice outsourcing and the other forms of flexibility of the contracts.

Fordism and Toyotism

Mass Production and Lean Production

Under the restructuring of production happened in the last decades many people, inclusively us, used some terms and concepts in a wrong way, for example, treating Fordism and Toyotism as opposites, and Fordism and Taylorism as well as Toyotism and Japanese Administration Philosophies as synonyms.

However, we would like to present here some considerations in order to foster debates under a new point of view.

To begin with, Taylorism and JAP are Schools of Administration of theoretical character, streams of thought about how to manage enterprises and business.

Fordism and Toyotism are the results of practical application of various concepts elaborated by different schools of management, specifically those of Taylorism and JAP, respectively. Fordism and Toyotism are the social-technical forms, real historical stages of developments of the certain productive cultures.

In general lines Fordism is a result of the association of practical application of Taylorism and of use of the assembling lines, that made mass production be possible. As the production volumes jumped up since this form of production and organization of productive process had been introduced. Fordism as a social-technical form evolved with time and incorporated concepts elaborated by other management schools, using them and adapting them in accordance with the necessities of the production process seeking to maintain production at the never seen before level of profits.

Once the Fordism is adopted, industry is transformed not only into the center of accumulation and concentration of capital, but into the base of formation of the new social model characterized, from one side, by workers subordination to technological process, limited application of individual capacities, indemnification of losses caused by production process and by development of that features of workers only that are interesting for the production process; from the other side, all the system of values, time and lifestyle not only on job, but also during free time are subordinated to the interests of production. For example, transport timetable or public institution's working hours are organized in such a way that

guarantees that workers come to working place in time and don't leave it to deal with other “non-productive” issues. Till today it is common to hear from people that there are less buses circulating during the weekends.

As we've said before, Fordism and Mass production were a perfect model for the market where the demand for industrial products was growing up, but it stopped working when the market conditions changed.

Under the conditions of super-production or drastic reduction of consumption capacity, it is extremely wasteful to produce in a big quantities to try to sell it afterwards, especially under competition with the other enterprises already adapted to the new conditions.

Application of Japanese Administrative Philosophies together with Fordism practiced at Toyota plant leads to appearance of Toyotism or Adjust Production. The new stage of development of production culture is a result of evolution and adaptation of Fordism through the practice application of JAPs.

We prefer the concept of Adjust Production to the generally used Lean Production or Toyotism, as we

believe that the term 'Adjust' reflects more precisely the features of concrete historical stage of production culture development. We want to say that **Adjust Production** is a type of production that can adapt itself to the concrete market conditions and to existing balance of forces. Thus, if the certain product doesn't achieve a workable level of sells, its production is reduced drastically as well as resources used for it (either materials or human). If there is an evidence that the sells are dropping, the enterprise can develop another products to substitute those ones that the market doesn't want any more, using available resources. If it is possible to increase production and it won't mean general costs increase (with personnel, materials, etc.), it will be increased. But if it is impossible to increase production without fueling stuff, people are contracted though for time. So, in practice Production adjusts to the necessities of the market and adapts itself. From the other side, the new type of production adapts to avid consumption and at the same time foster it, providing new or made up products in a shorter and shorter periods, creating desire of consumption in population in general. In this way, dialectically, production is adjusted to the market and at the same time adjusts the market to its necessities too.

Adjust Production is the evolution of Mass Production, generated inside it and adapted to the new market conditions. Adjust Production guarantees to Mass Production quality jump that the latter couldn't do alone, and is able to attend expectations of more exigent consumer market.

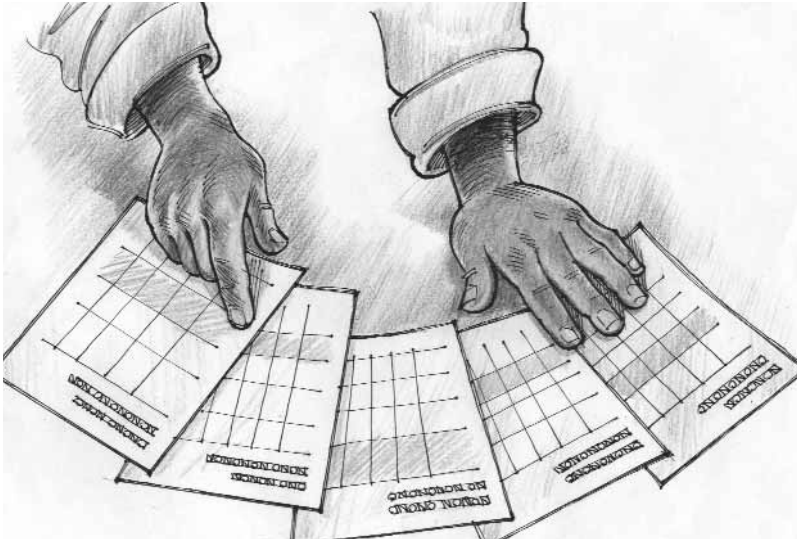
Besides, Adjust production will present some differences in comparison with its generator. The enterprises were smart to understand that in order to be able to answer quickly and in a proper way the market and the clients demands, it should increase workers involvement and dedication with the production process. This is the difference between creature and creator.

The concept "to wear enterprise's T-shirt" comes up. It is nothing else but a new form to make working knowledge be passed to the enterprise without additional costs. Instead of to "take away" or appropriate knowledge, enterprises create "democratic" places, giving a chance to the workers to make suggestions and willingly deliver, in this way, their knowledge, being happy to help the enterprise grow up.

The role of workers changes too, hierarchic levels are reduced, autonomous and semi-autonomous

groups arise, however well-controlled by a new decision-making system. Under the new context it is not that sour-eyed chief who demands production, diligence, commitment and dedication, but the group of workers themselves, one brother starts keeping a wary eye on another. Even repression inside the plant is outsourced...

We could follow to recite here the differences appeared during the evolution of Fordism and its transformation into Adjust Production. But we believe that the differences should be "discovered" by workers themselves at the shop-floor. It is possible to do applying Comparative Mapping of Production Processes as an instrument of Union action at Working Place and in the World.



Mapping of Production Processes

What is Mapping?

To construct and elaborate a map of something.

What kind of Mapping techniques have to be used?

The great advantage of Mapping of Production Processes is that there is no a rigid rule for identification and mapping of the processes, a point that makes it to be extremely flexible and adaptable to diverse conditions and using.

The core object of Mapping is identification of clue processes that determine or influence all the production and working relations. Once the processes are established, it is possible to understand a manner that this or that sector fulfills a certain task and the way it influences (or not) the other sectors. The problems will come out to the light as far as the operational mode as a hole is questioned.

It should be underlined the importance of the Base Groups. Its formation is the first step, essential for the success of the hole process.

How to do it?

The Base Groups are nothing more than a groups of workers joining for to play soccer at the weekend, to drink some bear time to time, to play domino during lunch-time, etc. It's our union work to convince people, the famous ant's work, friendly and persevering, that with time will make these workers start discussing issues like what to do and how to do Mapping. That's why it is so necessary to create democratic spaces for workers gatherings to debate openly and freely the more important and dear issues.

We have to make a fierce efforts on it, as the Base Groups contribute to democratization and horizontalisation of decision making, creating the new inside the old. By fostering the Base Groups, its members feel proud and valued being a part of the new process. They begin to see their brothers and sisters discuss and systematize information and knowledge in collective way, not disconnectedly as it used to happen before. It creates a power of base, because all the decisions become treated and implanted by Base Group.

Members of the Base Group are protagonists of MPP and there is no way to substitute them by technicians and assistants, however they take part of the Group and help to develop the work.

It is naturally that one feels free manipulating familiar instruments, accustomed to work with. But, use of various instruments and techniques can show us things that we weren't able to see in our day-by-day working life.

There are some suggestions of techniques for identification of the processes. It is important to remember that they can be used together or separately.

It must be remind too that they are not the unique at the “market”. Be creative.

- 1. Description of working place.**
- 2. Map of working or enterprise's sector.**
- 3. Performance and procedures.**
- 4. Flowchart**
- 5. Diagram of arrows or Mental Mapping.**
- 6. Cause and effect.**
- 7. Production Chain.**
- 8. Matrix.**

Remember that these suggestions are only the instruments permitting us to get vision of general situation of the processes. They can be applied to the collective process of systematization or not. But, nevertheless, at the beginning it is necessary to:

- identify in a collective way relevant processes;
- establish, what will be mapped;
- pick up data;
- systematize together.



1. Working Place Description

It is an issue that worker likes to speak about as knows it well. Even one who hates own job can describe with ability place where works and functions that performs.

This “technique” can be used as an icebreaker or initial stage to involve workers into Mapping process. It works because lets the worker speak about one of the mostly well-known things of life, and at the same time gives a chance for Union and workers themselves to perceive how many things do they know and what kind of knowledge they have and manage with.



2. Map of Working or Enterprise's Sector

It is referred to ask workers to draft how the enterprise works, its working sectors, production sequences, flows of work and of products, HR allocation, etc. To make a map of the “mine” where the treasure is produced.

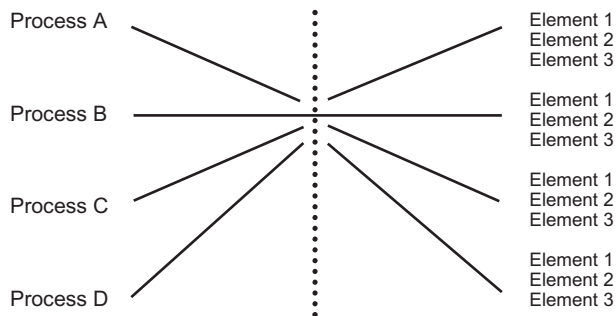
If the workers have made already Working place Description, to draft a map is a natural consequence. It is enough to join collected information, represent it at the plant's drawing, at the map, systematizing them together. Don't try to make it alone. Make systematizing and a Map together with the workers of Base Group.

If the Working place Description hasn't been made yet, you can begin right away to draw the map of enterprise, since the workers of the base group can be free to describe production processes and their participation in it.

Once the map is ready, we can use it as a base for further analyses, such as to find out where there's throats of production, where the rhythm of work is more intensive, where the work is more charged, where there is lack of stuff, where there is excess of stuff and what are the consequences of all these points for the workers.

3. Performance and Procedures

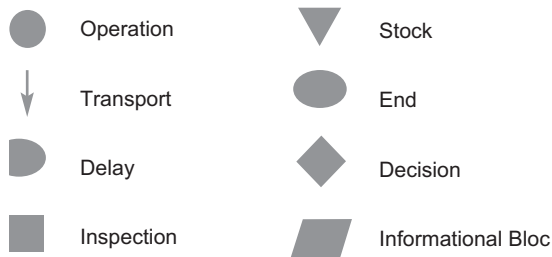
It should try to relate collected data to the certain elements of the process in question.



We draw something that looks like a felled tree. A head: its leaves are at the left side and represent Processes. Roots are at the right side and represent elements and sub-elements compounding process. Depending on complexity of the process we can detect and realize excess or lack of elements and sub-elements of each process.

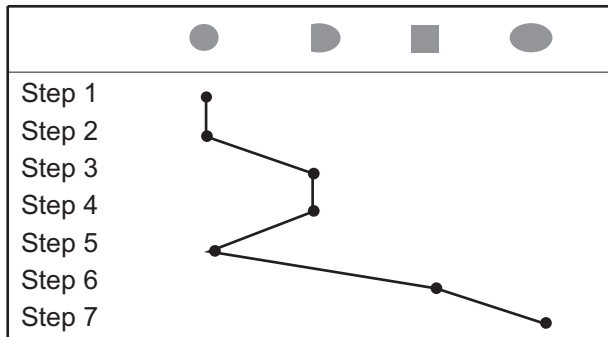
4. Flowchart

Flowchart is a graphic representation by geometric symbols that represents the algorithmic solution of the problem.



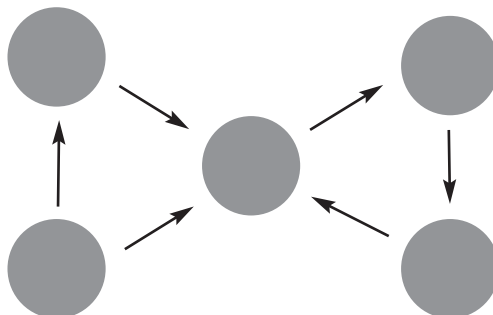
It should be established one symbol for each sector to be analyzed. Flowchart should be built in a vertical line ordering symbols in such a way that one can see which parts of operation dominate one particular process.

One simple exercise is to draw flowchart of preparing breakfast at home. You can see that there is a point in the process that doesn't work exactly as it was planned or desired and needs to be observed and improved.



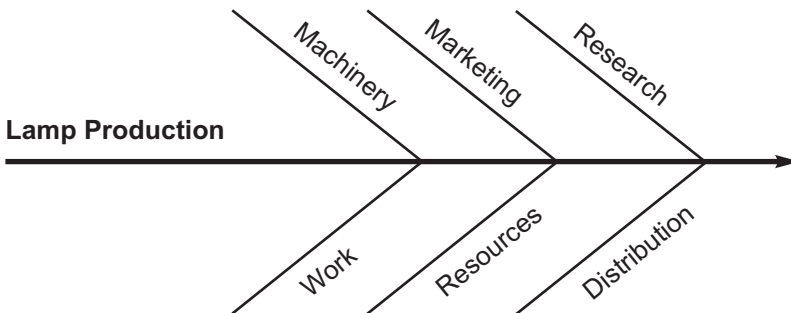
5. Diagram of arrows or Mental Mapping

It is a version of flowchart that gives us more general view of inter-relations between the elements of the process.



6. Cause and effect

It is also known as fishbone diagram or Ishikawa diagram named after its creator Kaoru Ishikawa.



Trace a horizontal line of certain time sequence and draw the “branches” form above and from below that represent processes as far as they chronologically appear. It helps us to identify existence of inter-departmental and inter-organizational centers that cannot be seen at first sight.

By means of this diagram, for instance, it is possible to identify bottlenecks of production process as a hole and its consequences for one or more than one elements of the process.



7. Production chain

It describes a process as a chain or a line of nodes form beginning to the end. There is always internal or external supplier and a client that makes possible all the production processes. By this technique it is possible to detect the interdependencies of the essential elements of the studied chain, as well as the points of bottleneck of the supplier-client relations.

Please, observe that supplier and client may be even two workers at the distinct workplaces. For example, a die maker making a moving die is a supplier of heat-treating man who makes a metal of die to become more strong and resistant trough the heat-treatment. Once the die is treated, it is passed to the tool maker who fits it out and adjusts to its proper place at stamp or a tool.

In the above mentioned example the heat-treating man is a client and a supplier at the same time. He is a client of die maker and a supplier of tool maker. A die maker, in his turn, is his supplier and a tool maker is his client.

8. Matrix

Many processes includes vertical and horizontal components and matrices help us to find a pattern in such a way that the quantity differences can show a cause of discrepancies.

When studying two or more production sectors, one simple matrix for each one of them can help us identify, for instance, that one where the lack of man power is chronic, demanding more detailed and attentive mapping.

Criteria					
Process	Number of Workers	Production per day	Norm of Job	Suspensions for medial reasons	Real Norm of Job
A	10	50	5	1	5,55
B	10	20	2	1	2,22
C	30	40	1,33	1	1,38
D	30	10	0,33	0	0,33
E	40	20	0,5	0	0,5
F	10	30	3	5	6
G	30	20	0,66	2	0,71
H	50	10	0,2	0	0,2

The example showed above suggests to put more attention to the processes A and F. The norm of job is high at these point and situation can worsen because

of the growth of number of absences for medical reasons or because of vacations, making a real norm of job per worker lift up even more. So, it should be studied why it happens, mapping the processes in question and understand the differences discovered (for ex., why in the F sector, where the norm of job is lower than in the others, there are more absences) and then elaborate solutions that will attend workers interests.

Comparative Mapping of Production Processes

Mapping from the union point of view. Why do we make mapping?

Job cannot be seen as an individual issue disconnected from the society. To begin with, job is a human and social activity. Thus, it represents features built historically, related to the evolution of the society itself and with the forms of control and distribution of power.

That's why job today should be analyzed together and at the same time with the capitalist production system, seeking to understand progress and recoils of capitalism as well as the situation of workers as a social class, that by selling its working power accepts to lose the power to control it, as far as it's a boss who organizes and conceives production.

Under this context, working power is understood as a product acquired by boss and as a consequence is seen as an object for exploitation permitting the buyer to extract a maximum of possible and impossible productivity.

Since the economic and production crises at the beginning of 80-s, some Brazilian unions understood that it was necessary to "give priority to picking up,

systematizing and evaluation of information collected by workers at their workplaces as a form of intervention into the organization of job". Besides, became clear that "working conditions" must be a starting point of any union action, as well as of those promoted by Factory Commissions (Internal Worker's Committees), Internal Commissions for Health and Safety on Work (CIPA), Union delegates and directors.

Goals of Mapping

In the different countries Union movement tried to develop forms of analyses and intervention into the Organization of Production Process (that is, into Organization of Job and Production) having as a goal neutralization of its negative consequences for the workers and for the union organizations.

The first thing to be done is to understand the way that work is organized in the society and since then try to elaborate alternative from the working class point of view to embrace it from the intervention to the possible and necessary control of work and production. In other words, we have to retrieve the thinking capacity, capacity to organize production and work, determine conditions we want to get when achieve it.



So, we can affirm that education, skillfulness, technical knowledge and information access are our main instruments of struggle. We need, then, to retrieve knowledge generated during material production process and to widen our knowledge about different models of organization of production and work in order to overcome superficial character of our knowledge and poverty of information acquired through traditional bourgeois media of education and information.

Information obtained by the movement of recovery of knowledge is essential for negotiations and can bring concrete results for the requirements of the sector and for the hole union movement. Basically, it can guarantee wideness of political and organizational consciousness of workers and their capacity to intervene into national policy life. To be able to change conditions of work we have to, then, improve quality of our organization and capacity to intervene into the form of organization of Work and Production, setting the changes of organization according to the worker's interests as one of the goals. It is necessary to elaborate method of research that will permit to widen information spectrum about work and its performing, about production process and concept of production chain.

About importance of Data Gathering

“By gathering” as more as possible information about production process, systematizing and analyzing it collectively we can reconstruct reality of Work, establish consequent and planned strategy and actions that will make possible, to begin or to strengthen WPO, as well as help with negotiations and contracts, that it will modify our reality.

If we analyze the enterprise, for example, an automobile assembling plant, we can see that the enterprise buys raw material, transforms it into vehicles and sells the vehicles at the consumer market.

Assembling plant represents production sector of the society, establishes various political and social relations and acts in accordance with its goal: to make vehicles for sale, to make more and more profit and to accumulate wealth. In order to reach its goals, it determines through the lobbies who will be elected, what kind of industrial, financial, wage and external commerce policies will be carried out. It intervenes in this way directly or not into power relations of the country where it is placed in.

It is its role as a capitalist enterprise, vehicle producer owner of plants in different countries that determines the way that the work inside of the factories will be organized: the flowchart, how many sectors and what kind of sectors will be, how many workers will work, how many turns, what the rhythm will be, what kind of products will be used in the production process and many other issues.

A worker entering to the enterprise in exchange of previously established wage will execute work that was thought and organized in such a way that it can attend interests determined by the enterprise.

Whether the workers can think about new different forms of organization of work and production and intervene into the power relations inside and outside of the factory?

The answer is positive. In order to make it happen gathering of data and permanent systematizing of it are fundamentally important. It is going to make us understand how and why the things are organized at working places.

Mapping when organize and to organize when mapping

Mapping of Production Process is used by union movement in different countries for the following purposes: to know Productive Process as a whole, to understand logic of production and organization of work and after that be able to intervene into its organization, changing them according to the historical and immediate interests of workers.

Mapping itself is carried out by worker's representatives, Base Groups (Factory Groups) and activists in general and orients negotiations, especially those concerning to the new technologies and organization, as well as represents a subsidy for wider political actions.

Mapping of Production Process has to give priority to analysis of working conditions, taking in account the fact that we are discussing work process thought and organized form the capitalist point of view.

In this way Mapping of Production Process can give us following possibilities

- Opening perspectives for the working class of production control, building of union freedom and autonomy and, the mostly important, of the way to

represent and organize work, production and the society itself on the basis of workers interests.

- Building continuing system of information gathering in the workers interest, that can serve as a support during negotiations and wide hiring.

- Thinking practice that permits us to improve workers skills and capacities from the union education point of view.

- Information exchange with other workers and with other sectors that permits a greater unity and ruptures corporative dependence in practice, as well as rebuilds class identity.

- Evolution of union action from the stage of temporary mobilization to the stage of permanent organization.

- Fostering active union practices that draw up discussions and organization at working place.

- Understanding of historical evolution of certain working processes, how they appeared and were modified with the course of time.

- Understanding of strategy established or could be established by enterprise for certain sector or production area.

- Observation of introduction of know-how and modifications into the working process, possible outsourcing, cells formation, automatization, etc.

- To establish map of the factory or of one certain sector, its production flows and understand its role in the production process.

- To analyze different processes realized in certain sector, detecting the reference of its content

- To identify working rhythm alterations and to be aware of time it happens or will happen, as well as permitting to formulate suggestions to prevent so-called social-environmental impacts (worker's health and environment).

- To qualify our discussions about participation in enterprise' s techniques of wage flexibility, as, for example, is the case of the projects intended to implement system of payment according to the results and target marks.

In many cases workers feel difficulties to suggest any changes because accept pacifically the idea that the existing form of organization of work is untouchable. Mapping of Production Process rises up necessary data to rupture of this and other concepts imposed by those who control nowadays production process.

How to do Mapping

Creativity is extremely important point in each and any process of Mapping. Each factory, each sector, each economy branch has its peculiarities. Only workers involved into determined processes have got a deep knowledge about them, and if they don' t know, they perceive at least that it should be mapped and discovered. Intuition and creativity allied to the instruments of gathering and systematizing of data elaborated according to the determined reality constitute power and flexibility of Mapping of Production Process.

Something simple and easy that can be done is a calendar for one month, asking workers to full it day by day with the number of worked hours and produced unities. These data will be systematized and discussed at the gathering with the union representatives, activists and workers

who collected data. During the gathering workers present information picked up by them.

To make the research go on, one can, for example, ask how many women and men work at the sector, what kind of operation they realize, what kind of movements, tools are there in the sector, what kind of lay-out, suppliers exist, what kind of raw materials are used, are there closed stock, what kind of fixed costs the enterprise has in this area and so on.

Having this simple information it is possible to discover, for example:

- Index of productivity of the enterprise in the sector.
- Make a diagram of number of workers and daily evaluation of production.
- Where are there constriction points of production.
- Calculate, even approximately, how much each worker produces and what part of it he or she receives in money at the end of the month (as a wage), and how much stays with the enterprise (as a surplus value). In order to get these data, take the price of final product, multiply it by daily and/or monthly

production and sum to the total wage of worker. Don't be surprised if find out that the month wage of worker corresponds to one day or even less of work.

- Refer the index of productivity to the index of professional diseases and accidents.

In the first gathering the next gatherings should be appointed, making clear the fact that Mapping is a continuing process that should be made always. It is important that workers bring other information at the following meetings.

The most important point of the process is to understand that Mapping of Production Process is neither a technical work, nor a paper or a spreadsheet work, but a union action concept directed to reconstruction of worker's knowledge and check up mode of capitalist production.

It is important to understand that it is workers who pick up information and systematize it together with the union representatives in order to make everybody understand, how exploitation works, as well as the fact that the situation change is a responsibility of each one together with the other brothers and sisters. It is a process of collective construction, so it's better

to get home together. But, if a mistake is inevitable, it is better “to mistake together than to get home alone”.

It should be taken in account that all these things are part of the process of management and inclusion. All the steps must be followed promptly.

If there isn't any organization at the workplace in the area of action of certain union, it is necessary, for instance, to:

- Hold a meeting with the Union Leadership.
- Call a seminar about planning to establish collectively axes, objectives and actions at short, medium and long terms, time limits and people responsible for co-ordination of this work.
- Establish Workplace organization's (WPO) building as a primordial axe of the entity
- Define Mapping of Production Process as a method of union action to be done.
- Create Work Commissions, promoting this discussion right at the seminar.

- One of the commissions must be the WPO's one.
- Organize meeting of WPO' s commission and determine calendar and dates for the beginning of the work, as well as for all necessary infrastructure. Elaborate agenda for periodical meetings of the commission.
- Close with the proposal of Mapping at the meeting of Leadership, so everybody becomes responsible for the work and understands it completely.
- Put Mapping on practice.
- Establish a date for the meeting with workers that made Mapping.
- Discuss, debate and systematize information at the meeting and choose further information to be gathered for the next meeting.
- Widen Mapping with help of the workers themselves, asking them to point new brothers and sisters to develop work together with them.

These simple preliminary steps are the embryo of Base Groups and WPOs.

At almost all meetings, seminars and expositions TIE-Brazil affirms that the Right today, in front of the mental apoplexy of the Left, is more dialectic than all of us and uses our historical battle-cries duly adopted to their interests, as, for instance, administration techniques.

Let's see some examples:

- Horizontal communication is parallel to democracy deepening.
- Reduction of vertical hierarchy levels is parallel to the proletarian democracy.
- Work in groups is the way we organize our activities. Smaller number of bosses and less authoritarian supervision have been obligatory points of the workers requirements always.

That's why we need to politicize our words and our actions, being fully alive to our class perspective, and assume that reconstruction of "workers' knowledge"

is the only manner to begin to build power by WPOs and to set our own logic.

We can start establishing Base Groups by application of Mapping of Production Process, or in other words, we can seed a new form of horizontally oriented organization and democracy that will permit us to accumulate forces for building of a concrete alternatives of social, political and economic organization, checked up by practice and understood by the main characters of production system, the Workers.

Summary

1. MPP is not a method in academic sense of the word.

2. MPP is a philosophy of continuing and permanent Work.

3. MPP is flexible, democratic, inclusive and adaptable for concrete necessities.

4. It is a kind of activity that every worker has to assume as daily and constant practice.

5. Don't ever forget that it is workers organized in Base Groups who carry on process of Mapping and systematizing, and that technicians and assistants have to merely support and respect Work developed by true protagonists from the shop-floor.

6. MPP should be the main and central issue of every meeting of leaders or the base groups.

7. By MPP we can appropriate knowledge (workers' knowledge) originated from material production; we give birth to class consciousness.

8. Practice of Mapping will be inevitably followed by Organization of Workers, if the strategic aim of necessity to build working power in order to tactically democratize decision-making power inside the enterprise and control production is clear.

9. When the Base Groups are created, we are seeking for the new perspective of political-union organization of Workers and unchain a new type of ideology dispute at the shop-floor, the core of capitalist production.

10. Method of chaos creation in order to release “creative force” and to canalize it into building of working power cannot be confused with the “happen what may” attitude.

11. Activists and leaders have to orient the process as a facilitators in order to avoid a mass. It doesn't mean that the new advance-guard must be created, but we must understand clearly that all of us are a part of the Base Group, its equal participants.

12. Every process of Mapping is made collectively and shouldn't be confused with the formal education offered in classes and schools.

13. Process of Mapping generates a new type of education and consciousness upgrade that happens naturally, at the factories and at the meetings, as well as at the streets, in the clubs and bars and so on, in other words in every place and during any activity that permits integration and exchange of experience between the people.

14. The so-called Quality Control Circles, semi-autonomous groups and similar enterprise techniques are bosses' base groups used to disseminate their ideology at the factory's shop-floor.

15. Supervisors are the activists of capital at the shop-floor level.

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*- **DEESE documents** (Inter-union Department of Social-economic Studies), Sao Bernardo unit and Department of Health and Environment, both from Metal Workers Union of ABC region.*