

THE INTEGRATION OF INDUSTRIAL ENGINEERING IN SOLIDARY ECONOMY

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ABSTRACT

The self-management firm in the base of cooperative principles could or should obligated rethinking the methods and productive process to attempt establish also in relation to process, democratic forms that consider and are in accord to administrative frameworks and policies of cooperatives. More knowledge about the difficulties in this scope could appoint many important and no doubt necessary courses for reflection of this theme. Meanwhile, the solutions for this claim is not replied satisfactory, and yet are in development stage.

KEYWORDS: Solidary Economy, Democratic Management, Productive Process.

1. INTRODUCTION

The Solidary Economy movement has grown every day, in search to fetching options of attainment of work and income. As a worldwide trend, it has become one of the main forms of population's reorganization. Solidary Economy configures itself as "*a mode of production and alternative (...), created and recreated distribution for that if they find (or they fear to be) kept out of society of the work market. The Solidary Economy marries the principle of unity between ownership and use of the means of production and distribution with the principle of the socialization of these means*". (SINGER, 2000). Synthetizing: it is an economic organization, where solidarity predominates among workers in search of democratic forms to make survival possible.

Inserted in the Solidary Economy, there are organizations on the basis of the self-management companies, cooperatives or associations - for presentation effect, all these forms will be called self-management companies - which are conducted by the principles of cooperativism, having as one of its pillars democratic management, transparency and collective decision. We can see through reports of entities and authors that self-management companies have fortified more and more in Brazil (OCB, 2000; ANTEAG, 2000; SINGER, 2000). However, the problem persists: control the management or control the means of production? Currently the given emphasis is in the control of management, which is correct, therefore has been the problematic greater in the beginning of any company based on self-management. In this transformed environment, the classic forms of management enter in conflict with the democratic process that are the base of the self-management companies.

This paper search to rescue the concepts of functioning of this type of organization and point out the joined difficulties and dilemmas in the present day literature to answer these questionings considered for the associate-workers of the self-management companies

2. INDUSTRIAL ENGINEERING

The necessity of finding standardized methods for the production, took some entrepreneurs and managers to introduce in its plants methods capable to support efficiently a process productive. However, the birth of the Industrial Engineering (IE) gave from the end of XIX century in U.S.A. Its core was *scientific management* proposed by F. W. Taylor.

Some consultants, self-denominated *Industrial Engineers* introduced in companies this new empirical method, based in knowledge of Taylor. With its specialization new sub-areas had been appearing (LEME, 1983):

- I. Production Management (turned for research of times and methods studies and productivity);
- II. Economic Engineering (emphasis in costs and investments);
- III. Operational Research (emerged of military necessities at Second World War, in rationalization of the production for management of insufficient resources)¹.

Moreover the IE presents some peculiarities deriving from this formation and professionalization:

- I. Scope and the limits of the field are not certain, having not clear distinctions between Industrial Engineering and Business administration;
- II. IE is not associated with any sector (agricultural, industrial or services), being used by every area in this productive processes;
- III. Absence of remarkable events, IE is turned to control and production management.

IE is eminently practical area, with direct involvement in the production areas, being its research directed to resolution of practical problems in the companies.

The IE, in Brazil, appeared with the necessity of management and production staff derived from the arrival of transnational companies and the politic called “Desenvolvimentismo (Developmentism)” established by government of Juscelino Kubitschek (1956-1960); fomented for the presence of north americans professors assisting the reorganization of education in the country. These professors had placed the necessity of implementation of Business administration and IE courses.

The new necessities imposed for the structural and economic transformations during the 90’s, worldwide changes (globalization and third industrial revolution of microelectronics), and national changes with the monetary stabilization, brought new demands for the companies and the economy as a whole. The IE searched new approaches to answer to these new requirements:

- I. Search of new forms of organization of work;
- II. Use of new management mechanisms;
- III. Enlargement of the productive process (supply chain, production and commercialization);
- IV. Use of the new technologies.

IE is a technique area, historically turned to the rational management of production, this scope can be appropriate for the management of any company who involves a transformation process. The IE makes use of methods and tools capable to give answers satisfactory to these demands (LEME, 1983).

However its application in self-management companies surpasses for rethink the methodology, refocusing it of the capitalist company for the self-management company. The thought of management for the maximization of profit must be abandoned, and

therefore the exploration of work for maximization of the efforts in collective benefit of the workers.

3. TYPES OF MANAGEMENT SYSTEMS

The management system in the companies not necessarily is become done in the same way. The approach that is used in the text is of the self-management; but as this term may be confused with other systems of management, we will appraise to the meaning of each system (DRULOVIC, 1976; GUILLERM & BOURDET, 1976, MOTTA, 1982; MOTTA et al, 1987):

Self-management: It is the management that comprises the autonomy of the members of the company to decide on the destinations, the processes and the results of work. Its general ideas are:

- End of the engage;
- Organization of the work on the basis of the democratic management;
- Election of self-management commissions;
- Elimination of the hierarchy;
- Participation in decisions that concern surplus.

Hetero-management: The opposite of the self-management, that is, the management is managed by another person, who can be the controlling (Managing, Administrators, Engineers) and/or by owner(s) of the company. The Hetero-management is the most common model found in companies.

Participation: It is not a self-managing, restricting the action to the participation of an existing activity of individual form, where the worker has that to have for in its activities, interest and persistence. This model inside of a company would have to be of spontaneous form, where the worker collaborates freely in the decisions of the company, but in the truth, this participation finishes being imposed for the owner, or directors. The motivation is obtained with the participation of profits, where the company remunerates the contribution and persistence of the worker. Inside in this way of management the Hetero-management prevails.

Co-management: It is a more advanced level of participation, where the participation in the profits is not alone, which the worker must be interested. It can disclose to the level of the organization of the work (in most cases) and/or in the level global politician of the company (co-administration). These types of participation are obtained by motivating the workers to attenuate the task's monotony, mobilizing them in a type of auto-organization in the production's level.

4. THE COOPERATIVISM

The peculiarity of the cooperative company is the end of the hegemony of the capital, is about a company based on the work, in the activity carried through in common, in the

person, who is who carries through the activity. Boarded of this form, the cooperative can be understood as a human company, in contraposition of the traditional company.

The explicitation of the ethical values consists in an excellent fact in the declaration of Manchester, a time that if show oportune to the reference the values such as the transparency of vital importance in the relations between the partners and the social responsibility, tied with the new cooperative principle of interest for the community.

1st Principle: Voluntary and Open Membership

Co-operatives are voluntary organizations, open to all persons able to use their services and willing to accept the responsibilities of membership, without gender, social, racial, political or religious discrimination.

2nd Principle: Democratic Member Control

Co-operatives are democratic organizations controlled by their members, who actively participate in setting their policies and making decisions. Men and women serving as elected representatives are accountable to the membership. In primary co-operatives, members have equal voting rights (one member, one vote) and co-operatives at other levels are organized in a democratic manner.

3rd Principle: Member Economic Participation

Members contribute equitably to, and democratically control, the capital of their co-operative. At least part of that capital is usually the common property of the co-operative. Members usually receive limited compensation, if any, on capital subscribed as a condition of membership. Members allocate surpluses for any or all of the following purposes: developing their co-operative, possibly by setting up reserves, part of which at least would be indivisible; benefiting members in proportion to their transactions with the co-operative; and supporting other activities approved by the membership.

4th Principle: Autonomy and Independence

Co-operatives are autonomous, self-help organizations controlled by their members. If they enter agreements with other organizations, including governments, or raise capital from external sources, they do so on terms that ensure democratic control by their members and maintain their co-operative autonomy.

5th Principle: Education, Training and Information

Co-operatives provide education and training for their members, elected representatives, managers, and employees so they can contribute effectively to the development of their co-operatives. They inform the general public - particularly young people and opinion leaders - about the nature and benefits of co-operation.

6th Principle: Co-operation among Co-operatives

Co-operatives serve their members most effectively and strengthen the co-operative movement by working together through local, national, regional and international structures.

7th Principle: Concern for Community

Co-operatives work for the sustainable development of their communities through policies approved by their members.

5. MODE OF ORGANIZATION IN SELF-MANAGEMENT COMPANIES

The cooperative is configured as an organization in which all the cooperators decide the politics, strategical and productive questions.

One of the great challenges of initiatives in self-management companies is to conciliate and to assure its principles of solidarity with its self-sustainment in the market. This last one demands that these self-management companies are competitive, without having to follow the rules and to reproduce the traditional model, but the quality and the efficiency of the products and services.

Thus, for the cooperatives obtain competitive strategies in the market and preserve its principles will have adopted necessary elements to its sustentation (technique qualification, productivity, conquest of market, enlargement of capital), in mode that the rationalization and optimization of potentialities of each worker and procedure are converted into benefit of all workers and the cooperative.

We could observe through the research carried (GAIGER, 1999; ANTEAG, 2000, HOLZMANN, 2000) that workers initiatives for generation of work and income, included in the Solidary Economy, are articulating both the entrepreneurial logic that targets results by means of a planned action, optimization of productive, human and material factors and the solidary logic, that works as a regulator for the economic rationalization, bringing real benefits to all workers, where rationality and efficiency is based on the cooperation, GroupWare potentialities, in favor of themselves.

The self-management companies have as principles: self-management, democracy, participation, and equality work cooperation, self-sustainment, human development and social responsibility. However, to the market, it does not matter its internal structure of management, but the quality and efficiency of its products and services in competitive terms. Then, for that to occur, the competitive strategies of self-management companies will have to head towards the adoption of the necessary elements to its subsistence (technical qualification, productivity, market conquest and capital increasement), searching the rationality and optimization of the potentialities of each worker to the benefit of all partner-workers. In this context, the following dichotomy will have to be surpassed:

Common Property		Management
Cooperation		Planning
Democracy	X	Qualification
Self-management		Efficiency
		Economic Viability
		Quality

So that this occurs, the self-management will have to be practiced, or either, all the decisions will have to be taken “... *with knowledge. Will not be more the collective who will decide, even if ‘ vote’ formally, if somebody to make use alone of the information and to define the criteria from which a decision is taken. This means that peoples that decide must make use of all the pertinent information*” (CASTORIADIS, 1983).

When rescuing the question: to control the management or to control the means of production? We observe that while giving emphasis only to the control of the means of production the self-management companies lose their identity, because the implementation of management of traditional market operations as a direct and single form, wounds the principles of cooperativism, for this would tend to establish a hierarchic level of subordination and specialization which could exclude the cooperative members of the participate decision environment of the company.

Besides the self-management companies growth during the last years, they still show fragilities related to the organization of their production, because many times they do not have the capital to maintain its activities, or knowledge on the types of management of production operations that exist in the market (ANTEAG, 2000). This results in many difficulties and conflicts to control the production, which many times lead to failure.

6. MODELS OF ENTERPRISE MANAGEMENT: ALTERNATIVES FOR SELF-MANAGEMENT COMPANIES

All company must think for its subsistence, in the questions related to the safe and trustworthy taking of decision that involves financial, commercial, accounting and fiscal questions, human resources, production, supplements and distribution.

The existing models to attend these problems are well known and widely used in the market, sometimes with the aid of software or hardware. However, what is available is made for the use of traditional companies, mainly for medium or large companies, or public institutions.

Apparently there aren't, in the market, solutions to enterprise management directed specifically to the self-management companies, mainly to the self-management companies of production and services, except for the ones in the agricultural sector, for its size and long presence in the Brazilian market, and this last one does not answer the necessities of the two previous ones.

The necessity of having a specific solution for this model of company, with an adaptation of methodology, is because they present organizative, fiscal, legal, accounting, patrimonial peculiarities etc, because self-management companies do not aim at profit.

There are existing organizations (ITCP's, ANTEAG, ADS, UNISOL etc) that are searching for adequacy of methodologies of these models for self-management companies, although still in an exploratory and initial phase, due to lack of professionals studying and searching in this field and aggravated by the lack of formation of university staff in this field (RUFINO, 2001).

The current possible alternative to extend the research of methodology adequacy is to search to broad the space of these problematic in the university in terms of research and development, to enlarge the professional staff who works with management in the self-management companies aid organizations, and it's also necessary that the self-management companies accumulate knowledge in self-management.

In a posterior moment it will be necessary, to integrate the set of acquired background of self-management companies with the knowledge developed by both the aid organizations and the professionals involved. This new methodology also involves rethinking approaches, technologies (information technology, software and hardware equipment), processes, organizational culture, quality, and efficiency (PEIXOTO, 2000).

7. FINAL CONSIDERATIONS

By the showed panorama the questions related to organizational and production management in the self-management company scene still need primordially conceptual solutions which can lead to an effective solution in terms of the daily practice of these companies.

The research, both theoretical and empiric, has not yet reached in the Brazilian ground responses capable of guiding (actions to solve) necessities. In the companies' point of view, the traditional culture of work is an element that makes it difficult, but does not annul that democratic forms can be daily found.

These experiences can be analyzed in the scope of this new paradigm that searches to reorganize the models and adequate technologies, without being impositive and standardized. One of the great challenges of self-management companies is surpass the "*incredulity generalized in the capacity of 'mere workers' manages [the cooperatives] with efficiency*" (SINGER, 2000). The process to be developed passes, then, for 'de-construct' of concepts and posture in relation to self-management administration.

Concerning the initial problematic between controlling the management or controlling the means of production, the more suitable reply is that both controls cannot be carried through in separate or isolated form. A self-management company, which worried only about self-management system questions, risks not to fit market requirements, and not subsisting for much time. On the other hand, by giving emphasis to the management of organization and production, self-management companies run risk not following the principles of the cooperativism and ending up transforming themselves into traditional companies or even in a collapse of the organization.

Thus, what is presented is a false dilemma, for only with full and transparent internal democracy, with an efficient and rational management, will self-management companies have chances, both in marketing possibilities and in developing a full model of self-management.

8. NOTES

1) The war was joined in several fronts, and the allies high commands needed to have men, weapons and supply in some places without loss of the capacity of fight in each of these fronts. If it was necessary to open a new front, the resources would have that to be placed taking in consideration the necessities of each place, keeping the same the power of fire, and also, at the same time supply the new front.

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