Recyclable material pickers cooperative operations

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Abstract
The main objective of this research is the analysis of the division and work organization in recyclable material pickers cooperative. In order to achieve this purpose, authors used sustainability and reverse chain literature concepts. The results allowed author to observe the operation and work relations among pickers inside the cooperative.

Keywords: Work organization, Recyclable materials cooperative, Sustainability.

INTRODUCTION

For the purpose of this study, municipal solid waste (MSW) are those residues from different origins (home or commercial generators) collected and sent to cooperatives of waste collectors. The composition of the MSW is heterogeneous in nature, yet covers products likely to be recycled and that can be reused in some way.

In this context, the reuse, recycling and reduction of waste generation (also called 3R's) are subject to action in public policy as national solid waste policy is regulated by Decree 7404 of 2010 aligned with Agenda 21 that states "*planning instrument for building sustainable societies in different geographic bases, to reconcile environmental protection methods, social justice and economic efficiency*" (MMA 2013).

The focus of this work deals with one "R": recycling. It appears as an alternative to minimize impacts in the environment and has a social dimension, by generating jobs and income – either through formal or informal work (Desen 2011) – for collectors.

In addition, many of the activities inherent to the Rs, in particular recycling in the São Paulo metropolitan region, are held by cooperatives. It is worth noting that in conceptual terms a cooperative has economic purpose in nature, but is not intended to profit from a legal point of view (Magni 2011).

The street population in major cities in Brazil, as in Sao Paulo, have a close relation with the mission of cooperatives of solid residues – since many individuals (members) still have, or have had, their lives connected to this harsh reality of marginalization.

Having this background, the goal is to analyze the main aspects involving the recycling of municipal solid waste with the use of a model of cooperative operation in reverse supply chains.

METHODOLOGY

A qualitative approach based on two parallel fronts has been adopted in this work: a literature review, and an empirical research. A literature review aimed at searching for concepts, and the establishment of a theoretical framework that supports the analysis of the study. And, an empirical research based on the case study method that includes the development of recycling and how it can be linked to the role of education and social inclusion.

We opted for a single case study (Yin 1988), facing the fact that this case can be considered revealing, where there is the opportunity to observe the process of development, and therefore learning, yet inaccessible to scientific research.

The unit of analysis was the cooperative Cooperate-Centre involved and its members, as well as the non-profit organization Gaspar Garcia that has a close relationship with the mentioned cooperative.

Particular attention was given to waste collectors and their role in this reverse chain. At this moment, the study of all other links in the chain was not possible. Data collection was done through interviews, including the non-profit organization that supports the cooperative. Finally, collectors were interviewed (at the time accounted for approximately 30% of the entire workforce), and also the management of the cooperative. For the interviews, we applied an open-question, semi-structured questionnaire.

THE CASE STUDY AND ITS CHALLENGES

The partnership of the non-profit organization and the cooperative can be observed between Center Gaspar Garcia and the cooperative of pickers Cooperate Center. Both organizations are located in the central region of São Paulo. In order to provide the social inclusion of street people and the recyclable materials collectors, the partnership demonstrates significant results, generating job opportunities and, at the same time, promoting a sustainable job. After nine years of operation, none of the members are still at risk on the streets, thus fulfilling its main objectives of social inclusion.

Cooperate Center cooperative started its operations in 2003, after the city of São Paulo implemented a selective waste collection center based in the central region of the city.

Currently, the cooperative has 120 members who work in two shifts. A board of 5 managers are elected every 3 years. Center Gaspar Garcia assists the cooperative on administrative issues, for example, providing staff and resources.

There are interesting elements in this study from both academic and practical points of view, for example, analysis of the organization and division of work among members.

A number of challenges associated with a new proposal for the value chain, particularly regarding social issues (inclusion, education, income and development work), was presented. So,

it was necessary that researchers go further into these issues and identify them to form the basis of this research.

ENVIRONMENTAL CONCERN ON REVERSE LOGISTICS AND THE TRIPLE-BOTTOM-LINE

Today organizations are very concerned with ecological issues. Not only have these concerns generated good results for the environment, and reduced the emission of waste, but also encouraged organizations to make use of their image to increase sales and improve their image in society.

In a survey conducted in the United States, and published in the Cambridge Report (CLM 1993), questions were asked to 1,250 adults in which 70% of them showed willingness to pay higher prices for products that had lower environmental impact.

This is just a sample of how companies can benefit from a more sustainable approach, even though many times the companies are concerned with the high costs involved in sustainable initiatives, therefore not properly investing to put them in practice.

Another example of this behavior change are the changes that have been taking place in the laws of this subject in Brazil, as well as in the rest of the world. Societies have been concerned in developing a legislation to put together economic growth and environmental policies. An example is the use of "green stamps" to identify products that are more environmentally friendly. Sustainable development happens when both economic growth and minimal environment impact occur simultaneously.

Thus, it is possible to say that the laws and fines have been growing and many companies have made changes to comply with these laws and somehow improve their image with these actions. Thus, organizations are working to achieve the ideal of the triple bottom line, which includes: business performance, economic and financial aspects, and social and environmental aspects.

A key concept related to sustainability with great acceptance in companies is the Triple Bottom Line (TBL). The term was coined by John Elkington (Elkington 1988), and discusses how entrepreneurial capitalism can become sustainable capitalism, not only environmentally, but also socially and economically.

The author believes that the circumstances surrounding these issues along with consumer pressure will force the "cannibals" to use "forks" in the 21st century. This more complex scenario leads to the unavoidable integration of sustainability principles into the backbone of the business strategies of companies.

The concept of Triple Bottom Line says that organizations should take into consideration social and environmental bottom lines in addition to the financial bottom line. This refers to the fact that the company should avoid surprises related to social and environmental liabilities that could cause an erosion of their financial results. The conceptual part of the premise says that the sustainability of a project depends on competent management, as well as the ability to build business plans with the legitimate interests of its various stakeholders and the impacts on the environment.

The novelty of the concept is that the obligations of the company towards its stakeholders (community, employees, customers, suppliers, etc.) shall be measured, calculated, audited and reported in the same way companies do with financial information.

ENVIRONMENTAL MANAGEMENT IN ORGANIZATIONS

Organizations can adopt different strategies for environmental management, ranging from a reactive to a strategic posture, where the environmental issue is no longer seen as a burden but as an opportunity for the company to obtain competitive advantage. Despite the importance that the topic has been gaining in recent years, we still see in most companies the predominance of reactive strategies (CNI 2004).

However, it is important to understand, even for the "youth" of the theme, that companies must evolve, over time, to a more strategic approach of environmental issues (WBCSD 2012). You can realize the most advanced approach (Barbieri 2004) is the one that considers the environmental management as a competitive advantage for the organization. The actions of these organizations are not only preventive and corrective, but also anticipatory in nature. The idea is to anticipate the problems and generate opportunities through new clean technologies. The vision should not be only in the short, but also in the medium and long terms (Marconsin and Rosa, 2013).

Following are the results of the present research.

RESULTS

The model of management of the Cooperate is not exclusive, but a common model which emerged in the early 1990s. The partnership of the cooperative and the Government of the City of Sao Paulo includes the provision of geographic space for material handling and equipment.

Currently the cooperative has 120 members who develop various functions, from the collection of the waste from collection points, to the preparation and allocation of material for sale. While the majority of the team participate effectively within the cooperative, a small part with only 18 members accompanies the collection trucks in the pre-established points for picking up recyclables. In this way, all the work is divided into several phases in pursuit of greater gains.

Another relevant point is the way organization and the division of labor have been made. Five coordinators, formed by cooperative members, are responsible for the following areas: general and administrative; commercial and accounting; secretarial; relations between nuclei; and production operations. The coordinators are also responsible for the activities and assignments for the division of work such as reception of the material activities, screening and selection of material in the conveyor belt, presses and preparation for sale. Besides the coordinators, there is a supervisory board composed of three members who help oversee the financial statement together with the NPO staff who take care of the administration.

The cooperative currently has an area of 5,000 square meters. The actual layout can be seen in Figure 1.

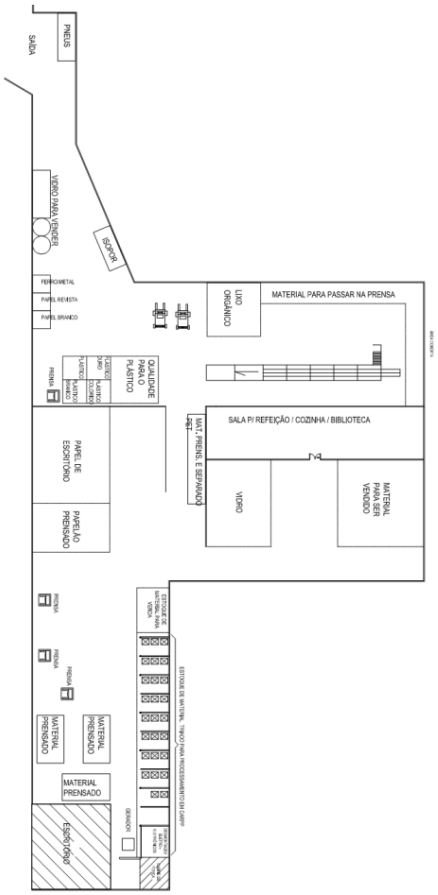

Figure 1 – Cooperative layout

Figure 1 shows the equipment and material arrangement for the waste separation processes. The layout is constantly modified due to the series of challenges associated with the value chain.

There are several variables that influence the disposition, especially those related to finished materials which rely heavily on buyers ' deadlines.

The personnel roles and the division of work are linked with the actual layout, identifying the work centers and the way the division is made. For example, allocation of personnel in the equipment, waste handling within the cooperative, area optimization, and detailed identification of the material flows throughout the process. See Figure 2.

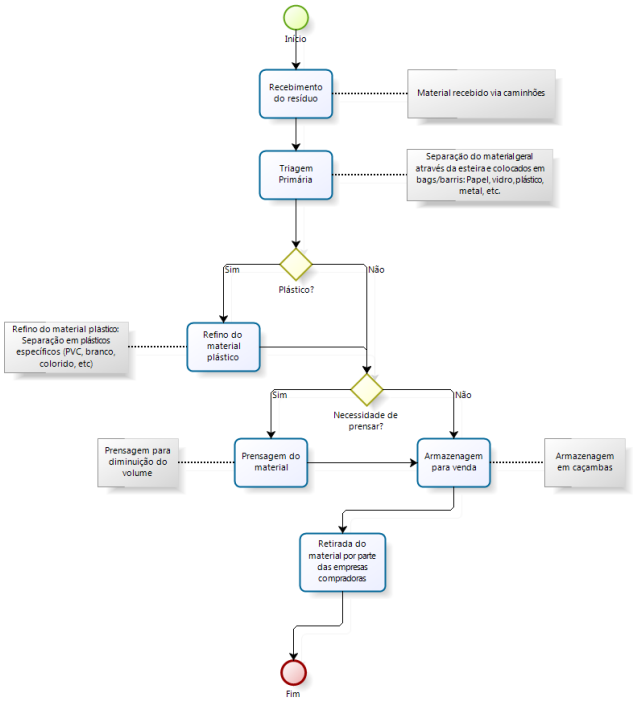

Figure 2 – Workflow and relations

The actual layout along with the data gathered seek to propose an arrangement that reduces, or even eliminates, the process line bottlenecks, and thus improve efficiency. A flowchart has been drawn based on the layout and insights generated. It shows the material handling processes.

The flowchart shows that the material first goes through the conveyor belt. At this time, the material is selected and sent to different processes depending on the personnel decision: it is sent straight to be stored (finished goods), it is sorted out in small pieces, or it is re-sent to the beginning of the conveyor belt to be re-analyzed.

The flowchart gives a broad view of the cooperative functioning, and helps to identify bottlenecks in the production process. Other aspects such as cooperative infrastructure, facilities, working conditions, material flow, organization and division of work could also be studied.

The partnership of NGO and the cooperative have provided positive results so far, motivating further studies and investments in that value chain. Among these investments are the acquisition of conveyor belts and modern presses, which would provide a more efficient material flow along the chain.

The cooperative currently has a conveyor belt where the material is sorted out, and five presses of which only three are in full operation. There are also nine collection trucks available for removal of material on pre-defined locations. A lot of the equipment used in the cooperative is donated by the Government of São Paulo, as for example IPEs (individual protection equipment) which is annually provided. Some expenses are also paid by the Government such as utilities.

The revenue generated from sales is used to provide personnel with literacy courses, periodic lectures about work processes and citizenship, and investments in infrastructure such as new bathrooms and a kitchen.

IDENTITY: ANOTHER DIMENSION OF SOCIAL INCLUSION

The cooperative developed programs for social inclusion of its members by providing courses on production processes (e.g. screening, selection, operation of machinery, etc.), or supporting them to overcome alcohol and drugs addiction.

One of the most important program is called Basic Core - BC which includes many efforts that aim to recover the citizenship of street people and improve their quality of life. Among the efforts, one can see training in communication practices, basics in language and mathematics, etc. Although these efforts are for all people who join the cooperative, some of them still live on the street, but depend on the cooperative infrastructure and support for bathing and dining.

CONCLUSIONS AND FINAL NOTES

The analysis and discussion of the operations and division of work, shows the importance of the partnership between Cooperativa and NGO. Data collected so far lead to a very interesting and relevant analysis in both academic and practical points of view. Members face big challenges in managing and operating the whole value chain, especially those related to division of work and processes. In this work, improvements in the operations and purchase of more efficient equipment are encouraged. Citizenship and social inclusion should be practiced along the chain, resulting in better work conditions and better results to be shared among all members.

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