

## THE EFFICACY OF INFORMATION USE ON KNOWLEDGE CONSTRUCTION: A CASE STUDY ABOUT THE INFORMATION IMPACT

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### ABSTRACT

Several surveys on Information Science recurrently indicate the existence of a new field of study in economics, named information economy. According to the information impact perspective, observed along with activation procedures of organization development, from the performance, expansion, penetration and consolidation point of view on the referred market, enhancing information as a market product affects the criterion analysis *sine qua non* of its research procedures and use. This study corroborates the hypothesis that these studies enable enlightenment on which information flow leads company managers to appropriate and constructed knowledge. Therefore, reflecting and understanding on how knowledge is constructed entails the main object of current study and specifically, considering the manager work context and the changing nature of organizations, how information use impacts on knowledge construction. From a methodological perspective, it is featured as a longitudinal and contextual study, analyzed regarding the evaluation model of information activity. The study has focused its action on a plastics company located at State of *Pernambuco*, Brazil. The research noticed that the results of informational impact can evaluate the information use and its effect on decision taking, characterizing the informational process legitimacy; however the phenomenon must not be studied apart from its historical and organizational context.

**Keywords:** Knowledge Construction; Informational Impact; Informational Efficacy; Information Use.

### 1 INTRODUCTION

Many studies have pointed a new field for economics studies, named information economy, emphasizing on information and knowledge as needed

resources to economics activities, even transcending economic importance of production traditional factors: land, labor and capital.

The information economy is an interdisciplinary field for studies which treats the information as commodity and production good, and it examines how information (or its lack) affects economic system. However, it does not mean that information is, in the present configuration, being driven purely to a center role, but, on the contrary, it means that it is facing many challenges, and to define its own use and exchange value is one of them.

Information valuation as a market product is also determining an increasing interest for the analysis of its search and use processes. Although, even considered a *sine qua non* condition for the information use as a device to evaluate the efficiency of the enablers processes of growth in organizations, few studies have been undertaken in order to reflect and understand which information flows lead a business manager to take ownership and build knowledge in the organization.

This paper is characterized as an effort to research the company's guidance for the market, through the study of information use as a device for activation of knowledge that ultimately legitimizes the process of consolidating and leveraging the company on the market. It is characterized in what Wilson (2000) calls the *usage behavior of information*, considering that information behavior, according to this author, is human behavior in relation to sources and channels of information in its entirety.

To the author mentioned above, the dimension of human behavior embraces both active and passive search, as well as the use of information, to the time when the behavior of information use consists specifically on mental and physical actions involved in the incorporation of information referenced with knowledge of the subject of the action.

Based on the aforesaid, the construction of knowledge being focused on the consolidation of an organization regarded as a starting point, this research aimed to reflect and understand how knowledge is constructed in this process and, specifically, how information using influences the construction of knowledge in the work context of entrepreneurs and in the organizational change.

Accordingly, Presser and Santos (2011) developed a model in perspective to reflect on the evaluation process of undertaken information activities in an organization. In the model of these authors, the assessment dimensions were identified and organized in a framework of performance indicators of the information process. Among other dimensions of evaluation, the one called informational impact goals to reflect on the changes in the knowledge base of users in individual and organizational level, resulting, among other factors, from the use of information. The indicators of informational impact dimension were formulated from the perspective of evaluating the use of information and measure its effect on the outcome of decisions taken and the performance of decision makers in real situations.

The effective use of information in organizational processes represents, in the perspective of these authors, the legitimacy of the information process. The knowledge, ultimately, is the accumulation and integration of socially constructed information, received and processed by the receiver. Thus, the impact is what happens after a person receives information and somehow acts on it within a given context. The value of information is based on the results and changes deriving from taken decisions.

Based on Presser and Santos model (2011), in this study the informational impact was evaluated having as analysis unit a company on the packaging segment and plastic objects, with innovative features in its products and managing processes, configuring it as an advantage differential.

The investigation of the informational impact was characterized as a longitudinal and contextual study (PETTIGREW, 1987), covering full period of company existence. It has been set up, thereby, a procedural and contextual study in character, to the extent that, for acquiring form and meaning, the episodes were analyzed over time. This allowed the evaluation and the association of the interconnections of events related to the studied phenomenon, such as identification of factors or contextual elements of the organizational environment underlying in the performance of informational activities that supported the decision process.

The primary data were collected through semi-structured interviews with the three owners of the company, recorded and transcribed, modeled by a conversation between respondents and researchers.

Data interpretation was based on method of content analysis (TRIVIÑOS, 1987), allowing a deeper understanding of what is the process of using the information in the organizational context at issue and how knowledge building translated in processes, products and services works, in practice. Data were grouped according to the objectives group they belonged to in order to proceed to their analysis, suggesting the creation of categories related to the research objectives, and were analyzed in the way interviewees presented them in their description, and were investigated the meanings attached on them.

## **2 CONSTRUCTION OF KNOWLEDGE ACCORDING TO SOCIAL EPISTEMOLOGY**

By proposing to help people acquire knowledge, Fallis (2006) defends that it is necessary, first of all, to understand what knowledge is and how people acquire it. Similarly, to evaluate the use of information, it is implied a previous notion of how knowledge is acquired and used. According to this author, the discipline that provides an understanding on how knowledge is acquired and used is social epistemology.

Thus, starting from the assumption that knowledge is socially constructed, social epistemology, according to Fallis (2006), is a branch of epistemology that studies the role that social factors and institutions play in knowledge acquisition. Consequently, social epistemologists focus on understanding how knowledge is constructed within a social context.

By providing registered information, information services facilitate the acquisition of knowledge as they provide the necessary information. But the main objective of these services, according to Fallis (2006), is the construction of knowledge. Therefore, providing the conditions for an engineer to learn how to build a bridge has less meaning if it is not known if he has actually built it.

Nevertheless, the acquisition of knowledge promotes social utility in so many different ways, which is very difficult to measure the impact of this social utility from

information services. It follows from this observation that the final goals of information services are hardly measured and, lastly, their results are rarely managed.

Meadow and Yuan (1997) demonstrated that is not possible to segment or divide the knowledge base of a person and identify the item of information, or even which specific message has contributed to building new knowledge. The construction of knowledge is a process and, probably, it will never be able to measure exactly what impact some particular information has on body of knowledge of a particular person.

Fallis (2006), for its part, recognizes that access to information is certainly a critical pathway by which information services facilitate knowledge acquisition. Even so, according to this author, there are good reasons why the information services focus on knowledge acquisition rather than focusing on access to registered information: access to information is useless if it does not lead to the production of knowledge. Likewise, although recognizing the limits of any evaluation process, Presser and Santos (2011) show the importance of knowing how and what purposes the information is used for and, particularly, its impact on usage.

Fallis (2006), based on considerations of Hamburg *et al.* (1972), notes that it is easier to measure success by accessing information than measuring it regarding the degree of acquired knowledge. Such an assertion requires that the intelligence services identify, specify and maintain their goals and not just those that are easier to be measured.

In theoretical and methodological foundations of Information Science (IS), information is related into three ways. At first, information is considered exclusively as containing a message, as recommended by Shannon and Weaver's (1959) mathematic model of communication by that, in essence, does not consider the meaning or consequences of the reception of a message. In another approach, the information is related to cognition. Information is what affects or changes the basis of knowledge of a person, or what he can learn from a database, document or event. Still further, in a wider sense of information, it is related not only to cognitive structures, but also to motivation or intentionality (SARACEVIC; KANTOR, 1997),

and is therefore related to the social context, such as culture, work or problem in question.

The social epistemology, therefore, is an essential framework to support a reflection on how to characterize the informational behavior of an entrepreneur in accessing and using information in different social contexts of work. Its fundamentals provide a theoretical framework to approach the evaluation of the use of information, i.e.: how knowledge is constructed by interpreting information at individual level and how knowledge is socially constructed on organizational and competitive environment in which this professional acts. In the first case, knowledge is the accumulation and integration of information received and processed by the receiver (PRESSER; SANTOS, 2011) and, in the second case, knowledge is socially affected within dynamic environments, at the core of which the interpretive processes manifest themselves (COURTRIGHT, 2007) in a context represented by motivation and intentionality in relation to some reason, task or problem at hand (SARACEVIC; KANTOR, 1997).

The context, for the purposes of this research, is set the reasons, expectations, motives or tasks that lead a person to search for information within the environment in which it operates. Thus, the value of information is provided in a context of usage, and the evaluation process is an appreciation of its merits.

### **3 THE INFORMATION IMPACT**

From the epistemological point of view, a highlighted problem when evaluating the informational process are the multiple definitions of the terms: data, information and knowledge (MEADOW; YUAN, 1997), closely related to the limit of this scope analysis.

Wilson (2000) argues that data may or may not be information, because it depends of the state of understanding of information user. A data cannot tell the extent that a person does not have a framework of understanding to incorporate this data. Hence, Wilson (2000) concluded that knowledge cannot be transmitted, only the information that, in turn, may be incomplete to create new knowledge.

Following this debate, Meadow and Yuan (1997) have advocated that to be information, the message has to be received and understood. A data is not information until it had been transmitted and understood by the recipient. Likewise, who will consider whether what is being received is data or information is the user, since this understanding of what is one or the other depends solely on your state of knowledge about the subject matter, observed those authors.

In the same logic, Menou (1999) relates the informational impact to changes in people's abilities to meet their needs, depending on the use provided by any information resource. It is based, therefore, on the assumption that people undertake actions for change while they develop skills to meet their informational needs.

Nevertheless, information has its value directly proportional to its practical possibility of activation of knowledge, conclude Presser and Santos (2011). Thus, according to these authors,

[...] In the sphere of organizations, it can be inferred that the informational impact is configured by changing the ability of people to face their problems and also in the ways these changes materialize in organizational space: the new products or services, new strategies, new work and management processes as well as financial and social impacts resulting (PRESSER; SANTOS, 2011)<sup>1</sup>.

According to what is happening in their theoretical model, the dimension of informational impact on organizations points to two aspects: on one hand, intends to evaluate the action of seeking information and the use that is made of the information provided and/or collected, and on the other, which results from its use for an individual, a group or an organization. One of them, explain Presser and Santos (2011) refers to the active role of users who use and act in the context of information systems, with regard to their needs and their informational purposes. The other relates to the resulting organizational performance.

In the model of Presser and Santos (2011), indicators of informational impact dimension are indicators derived and directed to the organizational context, and, in one sense, have to do with the judgment of relevance of organizational managers and, in another sense, how these judgments reflect on organization.

The informational impact dimension contemplates, according to the model, two categories of indicators: indicators of change in the user knowledge base and

indicators of organizational change. In the first case, the indicators of change in the knowledge base of the user are examined by the relationship between the state of knowledge of the user and the retrieved information in two main aspects: decision making and search process. In the second case, the indicators of organizational change proposed by the authors examine the relationship between a perceived situation, task or problem to be solved and the usefulness of the retrieved information and perceived by the user in two main aspects: improvements and/or innovations and financial results.

#### **4 HISTORY AND CONTEXT IN THE PROCESS OF INFORMATION USE**

The object of study of this research has focused its action on a plastics industry located at State of *Pernambuco*, Brazil, which operates in the transformation of thermoplastic resins in polyethylene, polypropylene, polystyrene and others, by injection process. It produces plastic containers, pots, caps, accessories and technical parts, as well as, its own line of housewares.

The company's history is intertwined with the personal struggle of its business founding partner – known, for the purposes of this research, as Interviewee 1 – both for their effort in learning about the plastic industry as an employee of companies in the electronics and glass fields, and for being a businessman and entrepreneur in his challenge of consolidating the industry market.

Graduated in Mechanical Engineering as technical and as bachelor, with MBI in Business Logistics, the business founding associate started his career as a trainee, working at the supply area of electronic parts for computers from 1986 to 1996. It was the experience of ten years in this business that formed the Interviewee 1 in the administrative area and put him in touch with the challenges of an entrepreneur. Likewise, the experience of ten years at the purchasing department of a glass factory, here called Y Company, gave him the opportunity to know the market for housewares. About his identification with the plastic industry, this was motivated during a long work along to a supplier of mold that worked in São Paulo, here called X Supplier,



occasion when this professional used to provide molds and plastic parts for the glass company which he worked at.

Having built a career history of ten years in Y Company, in a proactive decision, in 2007 he has chosen to break out his employment contract. By the time he was looking for employment in the market, he received the X Supplier proposal, which sought a partner to set up a branch office in Recife, by request from a potential customer, which sought to reduce the transportation costs of products manufactured only in São Paulo. Established agreements to society, it was initiated to his experience as entrepreneur, in early 2008.

However, six months later, the potential client (the same that prompted the installation of the factory in Recife) canceled the contract and stopped buying. As soon as this occurred, his partner decided to undo the society and take back their plastic injection machines, because those were his investment share in the business. Facing a big problem to solve, the situation was well described by Interviewee 1: *“I was stranded, had a shed with the facilities, but did not have plastic injection machine, neither had a job. All the financial reserve I had, I invested on the shed, on the installation of the structure of the plant”<sup>2</sup>.*

Motivated to move forward, the Interviewee 1 examined the context taking into account his personal circumstances and the potential market of housewares plastic industry in the realm of action of the State of *Pernambuco*. The identification of this opportunity bring him back to the time he worked in Y Company, when he was faced with the difficulty to obtain some supplier for this type of product.

Demonstrating initiative and courage, assumed the business risk alone. He contacted a manufacturer of plastic injection machine and negotiated the purchase of a unit in September 2008, through a settlement agreement providing its payment term, since this acquisition required high investments.

With the possession of the machine, at its first business initiative with the same customer who had previously canceled the contract, he identified the need to increase the productive potential, because this customer has expressed insecurity to resume business due to the fact that there was only one machine available for production. Aware that this would be an obstacle to new deals he would like to

establish, in December of that year, after intense negotiations, he acquired the second plastic injection machine.

Concerned about the financial commitment, the entrepreneur bet on the potential market for housewares and decided then to manufacture its own line of products. He already knew, from his own experience that set degree of acceptance of a product by consumers is no easy task, since there are numerous factors that influence the behavior and purchasing decision, his challenge was to produce a product with good call sales on an urgent basis.

Aware that his decision revolved around the definition of the product that would initiate its line of housewares; he visited several midsize supermarkets located in the neighborhoods of Recife, in order to collect information such as: top selling products, motives influencing purchase decision, and, especially, the practice of market prices. Through interviews with grocery's professionals, he identified that a product with strong sales should present similarities with the multipurpose pots, or pot with a lid for storing food.

Having decided to sell a product with such features, he designed the work piece and hired a designer to make the shape and, following, arranged the purchase of the mold with a supplier from São Paulo. With the mold installed, along with his only employee, they concentrated effort in learning about the regulation of plastic injection machine from information contained in the equipment manual. So, together, they learned to make the pot, by dominating the process of adjustment of the machine, and started the product selling process in precarious conditions, as can be seen in the story of the Interviewee 1:

*I put the pots in a bag, took the bus as transportation, because even the car I had was already sold to pay expenses of the company, and I would sell in neighborhood supermarkets in Recife. And we managed to sell a lot; there was a shop here in Recife who sold ten thousand pots a month<sup>3</sup>.*

Five months passed between the purchase of both plastic injection machines and the commercialization of the only product of its line, and even achieving a good sales volume, incomes covered only the cost of the factory, without generating income to pay the investment. In the meantime, he was approached by a client who wanted to fabricate a plastic frame for air conditioner. Realizing this demand as an

opportunity to generate income and boost their own line of housewares, he started its operations in two segments: his own line of housewares and the industry segment.

Then in 2009, the Y Company sought him to manufacture plastic parts for glass industry, such products that had been the reason for his contact with X Supplier and the plastic industry, while acting as an employee of that company. After making a deal on the price of product with his new customer to meet that specific demand he negotiated the purchase of that mold with X. Supplier. The purchase transaction required investments, which were made possible through a loan made by financial agency.

Meanwhile, it was nearing the date of payment of the first installment of two plastic injection machines purchased and therefore it was necessary to establish an agreement to extend the grace period for another year, since industry incomes were not sufficient yet for the payment of debts incurred.

Thereby, demonstrating technical skills to produce and entrepreneurial skills to leverage financial resources, the challenge now was formed to increase production. Thus, investing in the growth of their industry and worried about paying the bills, set two machines in operation, working uninterruptedly day and night to meet customers' requests, occasion when he suffered serious health problems as a consequence of this labor regime. It was mid-2009, a period that means – from experience of Interviewee 1, acquired while employed at the Y Company – season to increase sales.

Aware of this, he established as one of his goals the customer service done under the deadline they set, strategy that will guarantee significant sales volume. To do so, he hired more employees to work in production, and with the machines operating twenty-four hours a day, succeeded in early 2010 generating sufficient funds to settle the payment of most of the costs of the factory, as well as installments due with the acquisition of machinery within the terms negotiated with the vendor.

How he had envisioned, both the fabrication of the frame for air conditioner and the parts for glass industry generated financial returns necessary for profitability of the venture and sustainability of the payment of machinery, equipment and operating expenses.

Obstinate and determined not to give up on leverage his own product line, he observed the high growth market of housewares, while his company had minimal share in this segment. And so, even in early 2010, launched his own line of housewares products. To do so, sought the development agencies and negotiated a credit line from the National Bank for Economic and Social Development [*Banco Nacional de Desenvolvimento Econômico e Social (BNDES)*], a strategy that enabled the purchase of equipment for the launch of new products.

However, other challenges needed to be overcome. The first concerned the regulation and therefore sought information for National Agency for Sanitary Vigilance [*Agência Nacional de Vigilância Sanitária (ANVISA)*] and, since then, met the requirements for the use of nontoxic raw materials.

The second challenge concerned the domain of knowledge needed to design products. However, the company's financial condition did not allow, at that time, hiring a design expert. The solution was the use of free software available on the Internet that demanded, on the other hand, many hours learning.

The third challenge was characterized on the lack of information to substantiate the decision for a particular line of products. This challenge was solved by an empirical study, which searched information directly at the point of sale, through interviews with vendors, exhibitors and sales representatives. His search process information was this explained: "*I went to the supermarket and asked the vendors of the industry: about these products that are on the shelf here, which one of them do you sell more? And people pointed a bowl, a cream jug, a snack plate*"<sup>4</sup>.

Then, convinced that this was a line of products with commercial appeal, he focused on the search for a differential aspect for the work pieces. It was necessary to innovate, but it did not mean to make a differentiated product with higher added value to a client also differentiated.

For this entrepreneur, innovation meant to generate some value to the customer by improving the performance of products already available on the market. And so, in view of proposing different ways to use the products already known, inferred that a cap on cream jug and bowl would add value to the product. His reasoning was explained thus:

*If the pot is useful for serving at the table, it can also store food. Using the principle that, from now on, the apartments each day get smaller, the housewife cannot have a bowl to serve soup, another to store the soup. She needs a multipurpose container. For this, the pot needs a lid<sup>6</sup>.*

However, by providing to the market the product line, they got feedback with the public to which they were intended and awoke a great interest from another promising customer segment: the owners of cafeterias and pizzerias.

Seeking information to explain market behavior, he discovered that the pot was used to put the components that make up the pizza and that, further on the convenience of the cap during the process of preparation, foods, properly protected, the product were transferred to the refrigerator after expedient. And other pieces of the line were used to serve meals. And thus, based on that information, he directed his efforts to that particular outlet that had become his main client.

Like always, dominated by an active search for new opportunities in order to expand, build and consolidate the company, searched for information about his product line in supermarkets and other distributors. Through another research directed to the market, found that the customer has a preference for a complete line of housewares. Based on this, he decided to expand the items in your portfolio.

Considering that he should not be limited to his own personal talents and intellectuals bounds to carry out the act of grow and innovate, he realize that he needed to mobilize additional external human resources, enriching the interdisciplinarity of knowledge and experience to archive his goal. For him, design was a consistent way to be differentiated and get products position, and bring the production process of their industry to the end consumer. Thus, in August 2010 hired two interns in design and created a service aimed at the development of new products, with the task to create and develop an expanded line of housewares.

Understanding that the work of the designer is not only providing shape and functionality to the product, these professionals have focused on the market in the process of investigating consumer needs and then materialize this need in products. This principle was well explained by one of the designers: *“It’s how consumers wish and expect to find in a product that ensures their absorption by the market. A product*

*is salable when the technical, practical and aesthetic results present a differential really attractive for the customer*<sup>6</sup>.

These professionals assumed that developing a product is the combination of theoretical knowledge based in design, to information collected in the market from customers' profile and preferences. Such information was collected through interviews with vendors, supermarket owners, exhibitors and sales representatives.

To define colors and shapes, trend studies were conducted through visits to fairs for product launches, researches on sites and magazines, but also at company's well reputable company in the field of housewares. Other sources of information considered to make the trend studies were: suppliers and manufacturers of color, who voluntarily offered new releases of pigments; monitoring of colors adopted by competitors without, however, disregarding the factor of differentiating the product line, feature that the company seeks to preserve.

He developed the product line following the guidelines described above; a pilot batch was made available to collect information on the quality of the pieces in use. The try-out, or test of product, has resulted in the use of pieces by a group of people, to check any possibility of defects to be corrected. The tests consisted of visual analysis and handle up to product usage. After this step, the errors were corrected, the product was tested again and then sent to production and finally to market.

This strategy resulted in the introduction of four items (cereal plate, gravy boat, bowl and cups), consolidating a line of eight items. Named 'Servir', the line now had products with characteristics that differed in relation to its shape and performance quality as regards to customer requirements of home center, distributors and the end customer, characterized in social stratum of higher consumption level.

The development of new products for new markets led to the exclusion of the pot from the portfolio, designed in another context to another company's consumer profile. To handle this new production, the third plastic injection machine was acquired in late 2010, dedicated exclusively to manufacturing its own line of products. Started the production and marketing system, the factory began to show signs of stronger growth.

Still in late 2010, integrated into the portfolio of costumers another outsourced product from the segment industry, which enabled the company to acquire two more plastic injection machines.

Henceforth, with more company order, backlog and production ahead, aware of the need of a better control of production resources usage, joined in his team, professional production engineering, responsible for production planning, in order to ensure manufacturing products in time and in the right quantity, and with the best resources.

The entry of another new client segment from industry, in 2011, matched with the favorable circumstances of the sales of its own product line. The predominance of opportunities coupled with the desire to bring their products to new markets, motivated the choice of growth strategy that, in essence, meant to identify and leverage new customers, increasing production capacity and internal room and also engaged professionalization of company's management.

The recognition that these areas, properly managed, represented a significant impact on the success of the company, pointed out the need to introduce other professionals to work in the business. The concern in aggregating committed experienced professionals and stimulating them to an attitude of initiative motivated the opening of the company for the entry of new members.

The addition of new sets of competences to take place on key areas by opening the partnership, introduced at company's structure two new members in mid-2011. An associate production manager with extensive experience in conducting staff working in the area, which has taken place on the set of management activities of production related to the effective and efficient allocation of production resources, which, in turn, became centralized in a specific department of the factory. Also, was integrated to the company as partner, one of the designers who have worked on product development, while also assuming the role of directing, coordinating and controlling administrative and financial matters. To the founding partner now fit the overall direction of the business and specific performance in the commercial area.

Watching and guiding his first new members into their roles, the joint decision of purchasing new land in the region of Recife focused the actions of the founding

partner of the company in the construction and settlement of the new factory, while the remaining efforts were directed at ongoing operations. Thus, the growth strategy was leveraged bit by bit, to the time when the cash flows generated in the manufacture of products for customers in the industrial segment monetized the business in order to sustain the growth of its own line of housewares.

Maintaining a proactive behavior face to environment, the company currently provided solid results of growth with the opening of the market into other regions of the country, although the goal is to grow in larger proportions, once that the installation of the new facility was going to provide a production capacity of 200% over the current situation.

## **5 THE USE OF INFORMATION INTO KNOWLEDGE CONSTRUCTION**

As its own history indicates, the company has developed through distinct stages of personnel and organizational knowledge construction, in which structured and unstructured information from internal and external sources fostered the decisions, although there is a preponderance of one form over the other in particular moments of the construction company.

The partners took larger contact with sources of unstructured information through trade fairs and conferences, website analysis, observation of the strategies adopted by leading companies in housewares, suppliers, competitors, regulatory agencies, visits to retail outlets and interviews with exhibitors and sales representatives with a view to identifying the needs of customers. On the other hand the structured information, resulting from training courses, university degree courses, reading journals, documents published by regulatory agencies, study of manuals from suppliers of machinery and equipment, and internal financial analyzes substantiated decisions in the field of management, product development and manufacturing operation.

The research pointed that the behavior of information use consists specifically to understand the nature, genesis and effects of actions that materialize



in processes of construction, communication and use of information referenced with the knowledge of the subject of the action.

At the company studied, information is characterized as a resource that contributes to leverage the business and its value is based on the results and changes resulting from taken decisions. From the point of view of decision makers in this study, the value of information is directly related to the ability of these individuals to select the best decision possible with a corresponding result.

In a broader interpretation, the information is not only related to the cognitive structures of the partners, but also is embedded in a social context, represented by motivation and intentionality in relation to a task to do or a problem in question (SARACEVIC; KANTOR, 1997). As the survey indicated, the context of use represents a relevant dimension.

The use of information in the knowledge construction is characterized and presents evidences of an emergent and incremental process, which develops gradually, without a beginning, middle or end clearly defined, as noted in the testimony of designer partner:

Something I've learned in college, but mostly I've learned here, working. I needed to be here in the market in order to develop the product. In college, for example, I learned to do similar analysis, historical analysis of the product, interview techniques with consumers about colors and shapes. But as a professional, I realized that such information needed to fit in with the market reality. Here, internally, I needed to know the manufacturing process, what can and what cannot be done, out there I needed to figure out what the market can absorb, what really sells<sup>7</sup>.

It is observed a process of conjoint knowledge construction between the use of information and action, characterizing a specific type of tacit knowledge, created when people (partners) are involved intrinsically with the objects in a dynamic and interactive process, through the voluntary effort of all in dealing with the business world, solving company problems. The skills developed at university and at work, mainly arising from actions and experiences of members, which are incorporated into the processes of design, production and marketing of products through a conversion process between tacit and explicit knowledge.

## 6 INFORMATIONAL IMPACT AND ORGANIZATIONAL CHANGE

Many evidences point to indicators of organizational change in the outcome of decisions taken as Presser and Santos (2011) model assumes. The informational impact is configured by changing the ability of the partners to face their problems and also in the ways these changes materialize in organizational space: the ability to gather financial resources for the business, the process of new product development, in strategies for identifying and opening new markets, improving production and management processes, as well as the resulting financial impacts.

Many indicators of informational impact dimension allow assessing the effect of the information use on the outcome of taken decisions, characterizing the legitimacy of the information process, as follows:

- Acquisition and use of seven high-tech injection molding machines, aided by peripherals that allow greater control in the production process, and faster cycle times.
- Expansion of the manufacturing plant, increasing by 200% production capacity.
- Increase in the number of employees, from 1 in 2009 to 19 in 2012.
- Considerable rates of expansion: in 2010, an increase of 390% compared to revenue and 50% on production capacity, and in 2011, the percentage of revenue growth and productive capacity were respectively 286% and 133%.
- Development of a line of housewares with higher added value, with features to meet a differentiated customer.
- Penetration into new markets, currently with trade representative in the Southeast Region of Brazil.
- Conquest of recognition by reputable centers such as the Technology Institute of Pernambuco [*Instituto de Tecnologia de Pernambuco (ITEP)*] and the Federal University of Pernambuco [*Universidade Federal de Pernambuco (UFPE)*].

## 7 CONCLUSION

The story of the company construction is associated with founding partner's ability to realize and seize new opportunities arising from the combination of new ways of using information and resources. In a more systemic scope, the research emphasized on the importance of using information in the knowledge construction in a social context (FALLIS, 2006), technological, economic and cultural, in which information and innovation go together.

In addition, this research revealed the efforts of the business partners, not only to obtain and share information, but also to use them, and translate them into products and appropriate management systems, which process was built in small steps while they, on many levels, acquired, processed and interpreted information about their environment.

We conclude that it is possible to evaluate the activities of information, its use and the effects of using it in the activities of people and organizational performance, but the phenomenon should be studied for long periods of time and cannot be separated from history and organizational context. Otherwise, it is difficult to assess the context in which the changes occurred and the events related to the use will say very little about its association with the informational impact.

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## NOTES

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<sup>1</sup> From portuguese: [...] na esfera das organizações, pode-se inferir que o impacto informacional configura-se pela mudança na habilidade das pessoas face aos seus problemas e, também, nas formas como essas mudanças se materializam no espaço organizacional: nos novos produtos ou serviços, novas estratégias, novos processos de trabalho e de gestão, bem como nos impactos financeiros e sociais resultantes (PRESSER; SANTOS, 2011).

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- <sup>2</sup> From portuguese: Eu fiquei na mão, tinha um galpão com as instalações, mas não tinha máquina de injeção plástica, e tampouco eu tinha emprego. Toda minha reserva financeira eu havia investido dentro do galpão, na instalação da estrutura da fábrica.
- <sup>3</sup> From portuguese: Eu colocava os potes dentro de uma sacola, usava o ônibus como meio de transporte, porque até o carro já havia vendido para pagar as despesas da empresa, e ia vender nos supermercados de bairro em Recife. E conseguimos vender bastante, tinha uma loja aqui em Recife que vendia dez mil potes por mês.
- <sup>4</sup> From portuguese: Eu me dirigia até os supermercados e perguntava aos vendedores do setor: desses produtos que estão aqui na prateleira, quais são os que mais vendem? E as pessoas apontavam uma cumbuca, uma cremeira, o prato de lanche.
- <sup>5</sup> From portuguese: Se o pote é útil para servir à mesa, ele também pode armazenar alimento. Usando aquele princípio de que, a partir de agora, os apartamentos a cada dia diminuem mais seu espaço, a dona de casa não pode ter uma vasilha para servir a sopa, outra para armazenar a sopa. Precisa de uma vasilha multiuso. Para isso o pote precisa de uma tampa.
- <sup>6</sup> From portuguese: É a forma que o consumidor deseja e espera encontrar em um produto que garante sua absorção pelo mercado. Um produto é vendável quando o resultado técnico, prático e estético apresenta realmente um diferencial atrativo para o cliente.
- <sup>7</sup> From portuguese: Alguma coisa eu aprendi na universidade, mas a maior parte eu aprendi aqui, atuando. Eu precisei estar aqui no mercado para poder desenvolver o produto. Na universidade, por exemplo, aprendi fazer análise de similares, análise histórica do produto, técnicas de entrevista com consumidor, sobre cores e formas. Mas enquanto profissional eu percebi que aquelas informações precisavam se encaixar com a realidade do mercado. Aqui, internamente, precisei conhecer o processo de fabricação, o que pode e o que não pode ser feito, lá fora precisei descobrir o que o mercado absorve, o que realmente vende.

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