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**KNOWLEDGE MANAGEMENT LINKED TO PERFORMANCE INDICATORS IN A  
FOOD INDUSTRY**

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**ABSTRACT**

Companies concerned with preserving, especially their organizational intelligence, have been taking several actions in the area of knowledge management. However, mostly in an intuitive and empirical way and with no theoretical basis, which jeopardizes the final results and, if not, the success of the program as a whole. This article describes one of these initiatives implemented in a food industry in large scale, with branches all over Latin America. The term “initiative” was considered appropriate to characterize the program implemented in the company because it fits the model of setting up a practice with no or low theoretical basis, and which has suffered some changes in the course according to the performance indicators of the program, during its deployment and maintenance. This article is of particular importance due to several factors: it describes an actual event; it confirms the written theories about the success factors in knowledge management; and, finally, it provides guidance for academic and professional people working in organizations and that are in process of implementing this practice.

**Key-words:** *Performance Indicators; Knowledge Management; Success Factors; Food Industry.*

## **1. Introduction**

Apart from being very important ingredients for your company, creativity and innovation may bring success and competitive advantage. Creativity may be defined as the act of thinking of new ideas for solving problems and opportunities, and the innovation, according to Rogers (2003), may be defined as the attitude of applying these new ideas in a significant manner, providing benefits for society. The most creative and innovative companies are the ones capable of managing the knowledge present in the mind of the employees, adding it to their products and services.

According to Kaplan and Norton (1997), the companies are halfway to a revolutionary transformation. The industrial era competition is being changed into the information era competition. During the industrial era, from 1850 until about 1975, the companies' success was determined by how they took advantage of the benefits of the economies of scale and scope. Technology was important, but the successful companies were always those ones incorporating new technologies to the physical assets allowing the efficient mass production of standardized products.

However, the advent of the information era in the last decades of the 20th Century has rendered obsolete many of the central premises of industrial competition. The companies are no longer capable of getting sustainable competitive advantages only with the fast allocation of new technologies and physical assets. The ability of mobilizing and exploiting intangible or invisible assets has become more decisive than investing and managing the tangible physical assets.

The companies in the industrial era created strong distinctions between two groups of employees. The intellectual elite – managers and engineers (thinking class) - and the workers for manual labor and repetitive actions (performer class). For companies of the information era, the

operators add value for what they know and for the information they can provide. Invest, manage and exploit the knowledge of each employee has become a critical success factor for the companies.

The real challenge for the companies in information age is to understand how to manage and improve their ability to learn, innovate, use their skills and protect their knowledge and their intangible and strategic assets. (AWAD; GHAZIRI, 2004).

From the moment the company develops its organizational memory, it can use those experiences, either good or bad ones, in order to develop new products and services more efficiently.

This article aims to report an initiative of knowledge management deployed by a large company in the food industry, as well as conduct a review of the actions and results obtained by this company, comparing those data with the existing theories.

The article makes sense and it is of particular importance due to several factors: by describing an actual event, by confirming the theories ever written about the success factors on knowledge management and, finally, by providing guidance for professionals working in organizations that are in process of implementing this practice.

The paper is structured as follows: introduction, literature review, methodology, case study and conclusions.

## **2. Literature Review**

Knowledge management is an organizational strategy which enables the transformation of tacit knowledge – in the mind of the company's employees – to explicit knowledge – expressed in documents, reports etc. – allowing the creation of an organizational memory,

available at any time. (AWAD; GHAZIRI, 2004).

According to Terra (2005, p. 8):

“Knowledge management means organizing the major policies, processes and management and technological tools in light of better understanding the processes of generation, identification, validation, dissemination, sharing, use and protection of the strategic knowledge in order to generate (economic) results for the company and benefits for the internal and external employees”.

Polanyi (1966 apud NONAKA; TAKEUCHI, 1995, p. 60) states that the human beings acquire knowledge by actively creating and organizing their own experiences. “Personal tacit knowledge is specific to the context in which it is found and, therefore, it is difficult to formalize and communicate. Explicit or encoded knowledge, on the other hand, refers to the knowledge which is transmitted in formal, systematic language.”

Terra (2005) believes that the companies’ knowledge remains in the individuals, involving experiences, emotions, values and ideals. It is for this reason that tacit knowledge is difficult to be transferred. The task of sharing, making explicit all the acquired knowledge, both externally and internally, is considered of great importance for the company’s growth in the market.

According to the model of Nonaka and Takeuchi (1995), knowledge may be converted from tacit to explicit in the following ways:

- Tacit to tacit (socialization): in meetings or group discussions;
- Tacit to explicit (expression): putting in the “paper” some specific knowledge;

- Explicit to tacit (internalization): learn a procedure by reading the manual;
- Explicit to explicit (communication): when a document is written from information contained in other pre-existing one.

The professional knowledge people have, coming from their experiences and discoveries, is the most valuable intangible asset of the company and the driver of the competitive advantage to face the fierce competition of modern times.

It is very common to encounter situations in which the strategic knowledge of the company is in the mind of one or few people. Thus, in cases of retirement or any other type of leaving, often driven by more attractive wage proposals made by the competitors, the company loses the employee along with all the knowledge accumulated over years of experience.

For the knowledge to be kept in the company, it is necessary the implementation of a clear and objective policy of knowledge management, which is aligned to the organizational culture as well as accepted and internalized by all the hierarchical levels.

Nonaka and Takeuchi (1995) state the importance of the organizations in supporting and motivating the activities related to the knowledge generation by the individuals or providing appropriate contexts for that.

According to Tiwana (2000), information technology is an important tool in Knowledge Management (KM) because it enables the capture, the encoding and the dissemination of the knowledge in a rapid and efficient way.

The success in knowledge management is determined by the willingness of people to cooperate with the process of sharing the knowledge based on trust. The best software will not be enough if there aren't people ready to cooperate. (AWAD; GAZIRI, 2004).

On the other hand, running modern organizations in the midst of a complex competitive environment is at least as complicated as flying a Jet plane through busy airspaces with the aid of a single measurement instrument in the cockpit. (KAPLAN; NORTON, 1997).

Kaplan and Norton (1997) conclude:

“Why should we believe that the executives can make do with an incomplete set of instruments to run their companies? Executives, just like the pilots, need indicators on several aspects of the environment and organizational performance, otherwise they can’t afford to keep the course of business excellence”.

The company reviewed in this case study adopts a model of business management based on the “*Managing through Guidelines*”, defined by Campos (1996, p. 292) as the “management system led by the company’s CEO to help accomplish its guidelines – organizational strategies – of the year through the deployment of targets and measures to be taken in each sector.”

Concerning the planning of this management model, Campos (1996, p. 293) writes:

“The CEO promotes a meeting of Managing through Guidelines with all the directors and staff in order to present their goals for the year. In this meeting, the CEO instructs all directors so that each one develops studies on the acceptance of assigned goals and measures necessary for its implementation. Directors, on receiving the instruction of the CEO, now conduct studies of the goals and measures to be taken and decide to accept or not the targets and the need to budget. ”

The goals must be defined considering the strategical planning of the organization for short, medium and long term. If well planned, the results generated by its achievement will be enough to lead the company to its organizational strategy.

Kaplan and Norton (2008) state that for the development of the corporative strategy it is necessary: to study the external and internal forces that may affect the company in some point, to identify and analyze key issues and the process of the existing strategy, creating argument in favor for changing throughout the organization.

The company reviewed is strongly run by performance indicators that, following the model proposed, corporative goals are deployed into specific goals for each business unit (branches). Market share, for example, is a macro target which unfolds into several other goals, such as sales, publicity, and market share of product A, B etc.

Slack, Chambers and Johnston (2007) state that the market needs and the expectations related to each performance goal always vary.

Kaplan and Norton (2004) stress the need to review, update or create new performance indicators, depending on the strategic management implemented in the company and compared to its competitors’.

Kaplan and Norton (1997) supplement:

“The financial indicators alone are not sufficient to guide and evaluate the organizational trajectory in competitive environment. They are lagging indicators, incapable of collecting major part of the value created or destroyed by the actions of the executives in the last accounting period. The financial measures include some, but not the whole, of the

history of the past actions and do not provide suitable guidelines for the actions that shall be taken currently and in the future in order to create future financial value, leading indicators”.

The company under study has several performance indicators, not including the financial ones, as an index of non-time loss and time loss accidents, employee’s satisfaction concerning the company, index of client’s complaining, among others.

Slack, Chambers and Johnston (2007) argue that in order to identify the performance goals of any operation in the strategic level, one should analyze the stakeholders – people involved or who may have some interest in the transaction, which may influence or be influenced by these activities.

Skinner (1969) warns that when organizations fail to recognize the relationship between production decision and corporative strategy, they may become a non-competitive, expensive and strongly resistant to changes production system.

As an anchor of this kind of management, the company keeps a meritocracy program, scoring according to the accomplished goals. Some of them are qualifying because they are of major importance, such as overcome the financial budget of the unit or lead the organization to a negative exposure in the media.

### **3. Methodology**

Information was collected through semi-structured interviews made with an employee who had just resigned from the company, had a management position in one of the factories, and who experienced the entire process of the program implementation. The interviews were carried out with two more interviewers, in order to avoid the bias of a single interviewer.

Note that in this process the concepts of knowledge management were used to collect the tacit knowledge of the interviewee and change it into explicit knowledge, with the writing production of this article. It is still possible to notice that one of the main tools for capturing knowledge was used: the interview.

#### **4. Case Study**

Analyzing the results of its performance indicators, the company has realized that although its several facilities presented “good practices” being implemented timely, with excellent results, they weren’t shared in a corporative way, and for that reason, the organization failed to improve its global indicators.

Tied to this situation, the company has also realized it was losing employees for the labor market and they carried their experiences along with them; most of the times to the competitors, and worst of all, this knowledge was not registered as intellectual asset of the company.

The organization’s initiatives in the area of knowledge management aimed at minimizing these problems, which are going to be described according to their chronological order. For better understanding, the article was didactically divided into two phases, the first took about three years and the second is currently deployed.

##### **4.1. Phase 1 – Information System**

Initially the company decided to create an information database in an intranet environment, enabling the employees to record their knowledge, at any time and place, and making those records available for other business units. In this first version of the information system, the author of knowledge inserted his personal data, such as plant, industry, job function, e-mail, phone etc. However, the system was not set up to insert any type of file in the registry,

such as photos, spreadsheets, operating procedures, nor could it provide conditions for author and reader interaction. Additional information had to be made by e-mail or phone, outside this computerized environment

The users interacted with the system through logical filters, typing words, subjects, titles, name of equipment or areas, in the current models of search engines. However, they could hardly ever find what they were looking for in a fast and easy way. The slowness of the system and the inefficiency of the classification system in the search process were discouraging factors for the users.

Terra (2005) emphasizes the importance of the knowledge being readily available in time, space and format, facilitating its use.

Given these drawbacks, it was natural that users would no longer interact with the system. As a corrective measure, the company quickly prepared and launched the second version, focusing on the weaknesses of the previous version.

The new version has created an environment in which one can insert files to a certain size limit. The search filters were optimized. It was given the option to print tax return, schedule vacations, request advance of funds for trips and other activities of interest to employees to encourage the use of the system, which was also faster and more efficient.

However, the information system had fallen into discredit of the users, who did not interact with the new version as expected by the organization. As a corrective measure, the company then considered the amount of knowledge records inserted into the system, within a certain time, as one of the many performance indicators of the program for choosing the best units of the group, contextualized in a macro program of meritocracy for the branches with the

highest score.

Given this attitude, the response was immediate: there was a flood of new records, inserted more because of the pressure from the managers aiming at the scoring program of the units than the importance of capturing and disseminating knowledge. As might be expected, the obligation of the inserts reflected in the low quality of those.

The organization realized the need to carry out a correction in the information system, in order to measure not only the quantity, but also the quality of the posted knowledge. However, this request from the corporate management was never implemented due to the lack of resources and classification methods.

In general, the access to the information bank was performed only by the branches that were having trouble reaching certain goals, seeking in this system benchmarking units to exchange experiences and collect good practices. However, the reverse was not absolutely true, i.e., units with excellence in specific results were not sufficient mature and committed to share their knowledge within a corporate organizational vision

#### **4.2. Phase 2 – Knowledge Management**

The results obtained by the organization in those first three years were far from expected, moreover, is not known whether the organization had defined performance indicators for this type of information system. The fact is that the company decided to temporarily abandon this system and direct its efforts to another program, the specialists training program.

If in the first phase the grounds to justify the deployment of the system were the best practices carried out by the branches, which were not corporately shared, and the loss of knowledge by the resignation of its employees, in this second phase it is necessary to add two

more relevant factors:

- a. Units with the same physical layout, same equipment, same production capacities, and producing the same products with very different performance indicators;
- b. Inconsistency in the use of information system.

The implementation of the program for the specialists' training has followed the following steps:

1. Identifying machines and processes that needed expert groups;
2. Identifying experts for machine / process in each branch, in order to build a corporate group;
3. Training specialists;
4. Defining each group's leader, which although continues to work at the origin branch, devoted most of their workday on activities and corporate trips linked to this new program.
5. Setting targets and performance indicators for the group leader (corporate results) and for other specialists (results in their respective units), contextualized in a program of meritocracy by paying bonuses for job performance and achieved results (goals) already existing in the organization.

This program, by its magnitude, has boosted the practice of knowledge management in the organization. The same computerized environment of the first phase received a third version, apart from the options described above, which has provided the User specific areas according to the subject of interest. Experts scheduled virtual meetings, creating discussion forums and increasing the knowledge of practice communities.

Note in this second phase that the computerized environment goes, effectively, from a system of information to a practice of knowledge management, although not named by the company as such.

In this new environment, operational procedures were corporately created and standardized. Cleaning, maintenance, adjustments and troubleshooting in machines were some of the many subjects studied, involving absolutely all units of the group, among other practices.

Dalkia (2005) states that in an environment of knowledge management, the focus is on the generation of new knowledge, transferring the existing knowledge and incorporating it without products, services and processes.

As a result, the computerized environment once forgotten and discredited by users becomes widely and optimally used. The corporate performance indicators had significant improvements with the exchange of information and knowledge transfer. There has been equalization on the overall performance of the company, i.e., the disparity in the values of performance measures among related units has decreased.

Kaplan and Norton (2004) ensure that investment in intellectual capital, or in all the intangible assets, may create unique and sustainable value in the market, and that more than 75% of the market value of the company refers to intangible assets, while the tangible ones represent 25%.

Rezende (2003) argues that one of the purposes of the performance management is the rapid and efficient knowledge transfer, targeting the best way to get to business goals.

The goals, more and more challenging, are reviewed each year and, attached to the corporate program of specialist training, helps to keep the practice of knowledge management

active. With the results, the company has managed to gain the recognition of all hierarchical levels.

The units experts performance and the specialist corporate leader performance is measured by means of a joint assessment: the specialist corporate leader and the managers of the branches evaluate the performance of each one of the branch experts, while the managers of subsidiaries, backed by their respective local experts, evaluate the performance of the specialist corporate leader.

The computerized environment has become the best reference source for those ones who search solutions for their problems or seek improvement of their process, and has remained so until the current days.

A practical knowledge management of the company in the area of occupational safety known as "Security Dialogue" is going to be detailed in order to illustrate:

All non-time loss and time loss accidents occurred throughout the week in various Brazilian organizations or abroad are documented in written. On this document, the accident is defined and classified, the possible root causes are listed and the preventive actions to avoid recurrence are determined.

The document, duly completed, is sent to the corporate engineering safety center, which evaluates the quality and clarity of information. If it complies with the corporate standards, the document is relayed to all plants.

The branches are required to highlight the study of the reported accident. If the accident has correlation with other facilities, they should implement the preventive actions proposed in the document.

## 5. Final Considerations

The company has never used the terminology “knowledge management” to denominate the program internally, it’s unclear whether this was intentional or not, but perhaps, has followed the same footsteps of other companies which had in mind announcing the implementation of knowledge management practices.

It can be concluded that in the first phase, the organization did not have an environment of knowledge management, but an information system. The discredit of the users, characterized by low use of the system at this phase was effectively solved with the program of specialists’ training; the actions that preceded the program were ineffective.

If a specific team for the knowledge management had been created since the first initiative, with well-defined goals and performance indicators and with the entire infrastructure, activities would have been conducted differently.

According to the guidelines of Awad and Ghaziri (2004) the business failed to:

- Measure the value of knowledge throughout the organization;
- Consider the scope and expected results of the project, correlating it with the available budget and with the contributions generated toward the organization's strategy;
- Prioritize by importance the organization knowledge for each area;
- Define how this knowledge would be captured, processed and made available in the organization;
- Identify how to deal with tacit knowledge;
- Define how to adequately prepare the holder's knowledge so that he would support this

practice and share his knowledge;

- Involvement of the top management;
- Enlightenment on the model of knowledge management for the entire organization (concept, importance, form of practice, expected results, etc.);
- The infrastructure of information technology necessary for the practice of knowledge management;
- Create alternatives to avoid or mitigate the resistance;

The model of meritocracy management, linking results to the practice of knowledge management was of great importance for the maintenance of this management model.

Despite all the setbacks, the company moves forward on its initiatives and results.

## **REFERENCES:**

AWAD, E. M., H.M. GHAZIRI. 2004. **Knowledge Managment**. Prentice Hall/Pearson Education.

CAMPOS, V. F. **Gerenciamento pelas diretrizes**. Belo Horizonte: Fundação Christiano Ottoni, Escola de Engenharia da UFMG – Universidade Federal de Minas Gerais. 1996.

DALKIR, K. **Knowledge Managment in Theory and Practice**. Butterworth Heinemann: Hardbound. 2005.

KAPLAN, R. S., D. P. NORTON. **A Execução Premium**. Rio de Janeiro: Elsevier, 2008.

KAPLAN, R.S., D.P. NORTON. **Balanced Scorecard mapas estratégicos convertendo ativos intangíveis em resultados tangíveis**. Rio de Janeiro: Campus. 2004.

KAPLAN, R.S., D.P. NORTON. **A Estratégia em Ação: Balanced Scorecard**. Rio de Janeiro: Elsevier. 1997.

NONAKA, I., H. TAKEUCHI. **The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation**. New York: Oxford University Press. 1995.

REZENDE, J. F. **Balanced Scorecard e a Gestão do Capital Intelectual**. Rio de Janeiro: Campus. 2003.

ROGERS, E. M. **Diffusion Of Innovations**, Fifth Edition. Free Press. 2003.

SKINNER, W. **Manufacturing missing link in corporate strategy**. Havard Business Review.

1969.

SLACK, N., CHAMBERS, S., R. JOHNSTON. Administração da Produção. São Paulo: Atlas. 2007.

TERRA, J. C. Gestão do Conhecimento: O Grande Desafio Empresarial. Rio de Janeiro: Elsevier. 2005.

TIWANA, A. The Knowledge Management Toolkit. NJ: Prentice-Hall. 2000.