

Knowledge Management in the Brazilian Agribusiness Industry: a Case Study at Centro de Tecnologia Canavieira (Sugarcane Technology Center)

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Abstract: Investigates and analyzes “Knowledge Management” (KM) practices effectively implemented in the Brazilian agribusiness industry. The main objective is to investigate and analyze the conceptions, motivations, practices, metrics and results of a KM process in a genuine Brazilian firm. The qualitative research strategy used was the study of a single case with incorporated units of analysis, and two criteria were observed for the judgment of the quality of the research project: validity of the construct and reliability. Multiple sources of evidence were used and data analysis consisted of three flows of activities: data reduction, data displays and conclusion drawing/verification. The results confirmed the presuppositions and the firm of the study is a benchmark for a KM process in the context of Brazilian organizations. The conclusions suggest that organizational knowledge cannot be managed, it is just promoted or stimulated through the creation of “Ba” or an enabling context. It was also identified that the main challenges facing organizations committed to KM in Brazil have its focus on change management, cultural and behavioral issues and the creation of an enabling context that favors the creation, use and sharing of information and knowledge.

Keywords: knowledge management; strategic information management; enabling context or “Ba”; knowledge management conceptual umbrella metaphor; KM in agribusiness

1. Introduction

The emergence of a technological and economical paradigm based on innovation, information and knowledge, as well as the growing consolidation of technologies such as microelectronics, information technology and computer networks bring complex and multifaceted issues to surface facing contemporary organizations. This transition of the “old rigidity of the atoms to the fluidity of the bits” in organizations lights up many discussions concerning the profusion of new terminologies created in the information era. Therefore, contemporary organizations face new terms such as “knowledge management”, “communities of practice”, “strategic intellectual capital management”, “competitive intelligence”, “organizational learning” and many others. These different perspectives reflect different conceptions of organizational knowledge and organizations themselves, besides a growing need of meticulous analysis about the upcoming opportunities for gaining competitive advantages through strategic use of information and knowledge. In this particular arena, KM arises both as an opportunity and an oxymoron, depending on how it is conceived, analyzed, practiced and measured for its results concerning the organizations’ core-business and readiness to compete. ALVARENGA NETO (2002, 2005, 2008) and MARCHAND & DAVENPORT (2004) suggest that most of what it is called “knowledge management”(KM) is actually information management. They also affirm that KM is more than simply information management due to the fact that it includes and incorporates other concerns such as the creation, use and sharing of information and knowledge in the organizational context, not to mention the creation of the so called “enabling context” or “enabling conditions”, among others. Hence, information management is just one of the components of KM and a starting point for other KM initiatives and approaches.

Debates like these, associated with the lack of a conceptual definition and all the controversy surrounding the term KM, motivated a research study concerning how a Brazilian firm from the agribusiness industry understands, defines, implements, practices, measures and evaluates KM, what motives led it to those initiatives and what it expected to achieve with it. The basic presuppositions were two, respectively: (i) most of what it’s referred to or named “Knowledge Management” is actually “Information Management” and information management is just one of the components of KM. Consequently, KM is more than simply information management due to the fact that it includes and incorporates other aspects, themes, approaches and concerns such as the creation, use and sharing of information and knowledge in the organizational context, not to mention the creation of the so

called “enabling context” or “enabling conditions”, among others; (ii) a conceptual model or map can be formulated based on three basic conceptions: (a) a strategic conception of information and knowledge, factors of competitiveness for organizations and nations; (b) the creation of an organizational space for knowledge or the enabling context – the favorable conditions that should be provided by organizations in order for them to use the best information and knowledge available; (c) the introduction of such strategy in the tactical and operational levels through the several managerial approaches and information technology tools, which are susceptible to communication and orchestration. The results of such study will be presented in this paper.

2. Knowledge management: Models, maps and conceptual trials

A conceptual KM model or map can be formulated based on three basic conceptions: (i) a strategic conception of information and knowledge - as proposed by CHOO (1998) - factors of competitiveness for organizations and nations; (ii) the creation of an organizational space (in the tactical level) for knowledge, the enabling context or “Ba”: the favorable conditions that should be provided by organizations in order for them to use the best information and knowledge available - as suggested by VON KROGH, ICHIO & NONAKA (2001); (iii) the introduction of such strategy in the operational level through the several managerial approaches and information technology tools, which are susceptible to communication and orchestration, metaphorically named here as a “KM conceptual umbrella”;

2.1 A strategic conception for information and knowledge in organizations

CHOO (1998) asserts that the “knowing organizations” are those that use information strategically in the context of three arenas, namely, **(a) sense making, (b) knowledge creation and (c) decision making**. Concerning **(a) sense making**, its immediate goal is to allow the organizations’ members the construction of a mutual and shared understanding of what the organization is and what it does. Strategic reflections must be done concerning the organization’s mission, vision, values and culture, allowing its members to bring meaning to their lives and jobs. An ambitious and challenging vision or state of the future reveals the organization’s intention and it is extremely valuable, contributing to communicate the types of knowledge that are welcomed and will be nurtured. Sense making’s long term goal is the warranty that organizations will adapt and continue to prosper in a dynamic and complex environment through activities of prospect and interpretation of relevant information that allow them to understand changes, trends and scenarios about clients, suppliers, competitors and other external environment actors. Organizations face issues such as the reduction of uncertainty and the management of ambiguity. Competitive, competitor and social intelligences, environmental scanning, marketing research and activities alike are organizational initiatives that aim at constructing meaning about issues for which there are no clear answers. TABLE 1 presents the organizational sense making process through an information perspective:

Table 1: The sense making process (adapted from CHOO, 1998)

Information Needs	Information Seeking	Information Use
What are the new trends in our industry?	Environmental scanning	Reduction of uncertainty and management of ambiguity: collective interpretation
What are the core competences of our competitors?	Information systems	Shared knowledge construction
What do our clients value?	Researches	Decision Making

(b) Knowledge creation is a process that allows an organization to create or acquire, organize and process information in order to generate new knowledge through organizational learning. The new knowledge generated, in its turn, allows the organization to develop new abilities and capabilities, create new products and new services, improve the existing ones and redesign its organizational processes. TABLE 2 supplies an analogy between knowledge creation models and permits inferences between their differences and likenesses.

Table 2: Knowledge creation processes (CHOO, 1998, p.130)

KNOWLEDGE PROCESSES (WIKSTRÖM & NORMANN 1994)	KNOWLEDGE CREATION PHASES (NONAKA & TAKEUCHI 1995)	KNOWLEDGE-BUILDING ACTIVITIES (LEONARD-BARTON 1995)
Generative Processes: Generating new knowledge	Sharing tacit knowledge ----- Creating concepts	Shared problem solving Experimenting and prototyping
KNOWLEDGE PROCESSES (WIKSTRÖM & NORMANN 1994)	KNOWLEDGE CREATION PHASES (NONAKA & TAKEUCHI 1995)	KNOWLEDGE-BUILDING ACTIVITIES (LEONARD-BARTON 1995)
Productive Processes: operationalizing new knowledge	Justifying concepts Building an archetype	Implementing and integrating new processes and tools
Representative Processes: Diffusing and transferring new knowledge	Cross-levelling knowledge	Importing knowledge

The third component of CHOO's (1998) model involves (c) decision-making. The firm must choose the best option among those that are plausible and presented and pursue it based on the organization's strategy. Decision making process in organizations is constrained by the bounded rationality principle, as advocated by MARCH & SIMON (1975). Many inferences can be made upon the decision theory, CHOO (1998) and also MARCH & SIMON (1975) list a few of them:

- the decision making process is driven by the search for alternatives that are satisfactory or good enough, rather than seeking for the optimal solution;
- the choice of one single alternative implies in giving up the remaining ones and concomitantly in the emergence of trade-offs or costs of opportunity;
- a completely rational decision would require information beyond the capability of the organization to collect, and information processing beyond the human capacity to execute.

2.2 The creation of an organizational space for knowledge, the enabling context or “Ba”

The creation of organizational knowledge is, in fact, the augmentation of knowledge created by individuals, once fulfilled the contextual conditions that should be supplied or enabled by the organization. This is what VON KROGH, ICHIJO & NONAKA (2001) call “Ba”, enabling conditions or enabling context. “Ba” is needed in the tactical level in order to bridge the existing gap between strategy and action. In this context, the understanding of the word “management” when associated with the word “knowledge” should not mean control, but promotion of activities of knowledge creation and sharing in the organizational space. Hence, KM assumes a new hermeneutic perspective – from knowledge as a resource to knowledge as a capability, from knowledge management to a management towards knowledge, from knowledge management to a management **from** and **to** knowledge. NONAKA & TAKEUCHI (1995) and VON KROGH, ICHIJO & NONAKA (2001) list the many elements of “Ba”, namely: creative chaos, redundancy, layout, organizational culture and human behaviour, leadership, intention or vision of future and empowerment, not to mention organizational structure and layout, among others.

2.3 The “KM Conceptual Umbrella” metaphor

The “KM Conceptual Umbrella” metaphor assumes that below its boundaries, many themes, ideas, managerial approaches and IT tools concerning information and knowledge in the organizational context are addressed and susceptible to communication and orchestration. It's imperative to highlight a few of them, such as, ‘strategic information management’, ‘intellectual capital’, ‘organizational learning’, ‘competitive intelligence’ and ‘communities of practice’. It's exactly the interrelation and permeability between those many themes that enable and delimitate the upbringing of a possible theoretical framework which can be entitled “knowledge management”. Feedback is achieved by classifying the themes below the “KM conceptual umbrella” in the model proposed by CHOO (1998). Competitive intelligence and environmental scanning are initiatives – managerial approaches and IT tools - that drive the strategic concept sense making into action. That is, sense making is a strategic

conception and, e.g., competitive intelligence, an action-driven managerial approach - a way to turn strategy into action is by using the right managerial approach or IT tool that can be found in the "KM conceptual umbrella". Communities of practice, strategic information management and organizational learning fit into the thematic of knowledge creation and so on.

FIGURE 1 represents and summarizes the integrative conceptual map used both as a theoretical framework and a guide for field research and data collection:

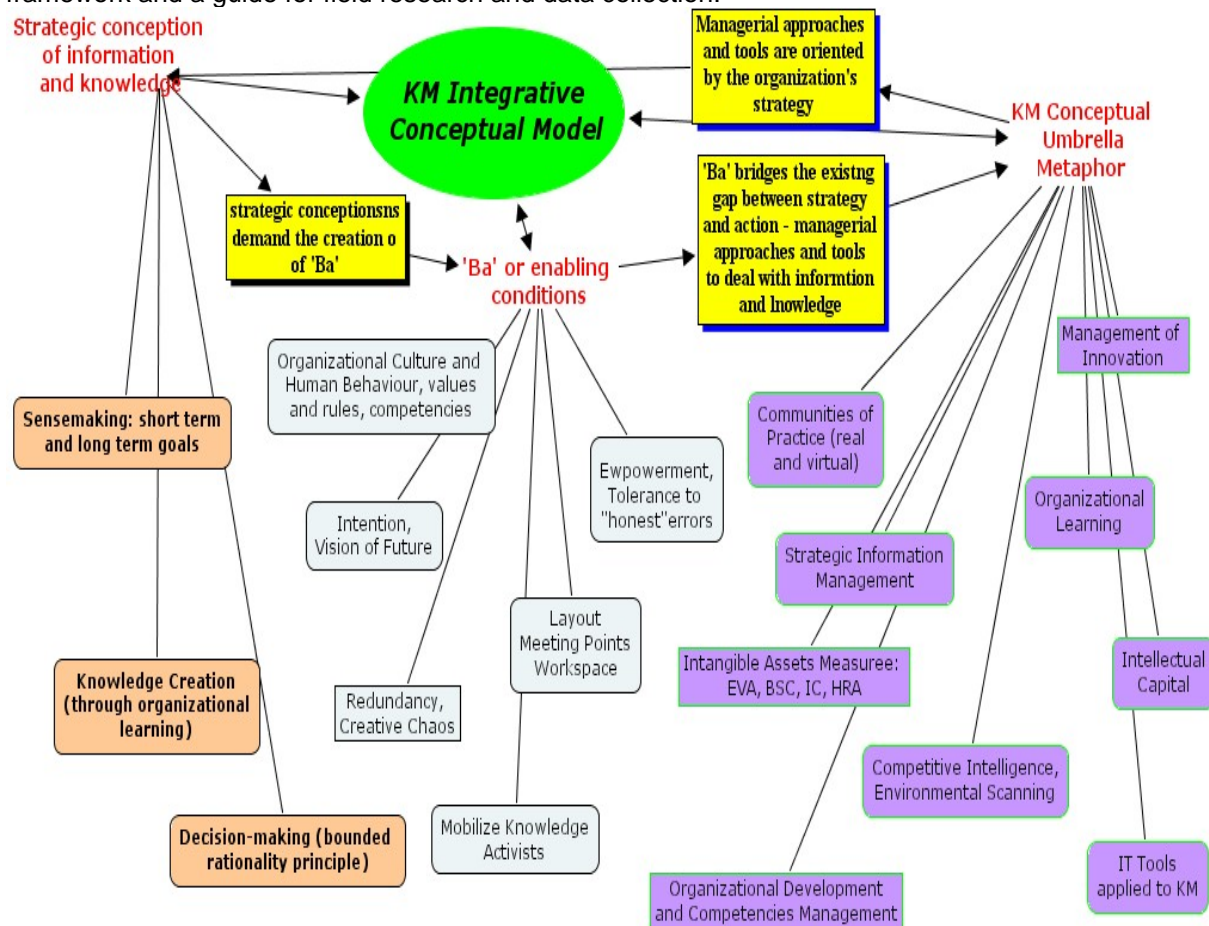


Figure 1: KM: an Integrative Conceptual Model proposition (Alvarenga Neto, 2008).

Last but not least, it's desirable to recur to CHOO (2002) once again for the closing of this section, as he suggests a conceptual framework that could be useful for the comparison of possible information and knowledge management strategies. CHOO's starting point is the "Johari Window", an approach that describes the dynamics of human interaction and communication and has its genesis in the first names of its inventors, namely, Joseph Luft and Harry Ingham. His arriving point is the proposition of the "Windows of Knowledge Management", as shown in TABLE 3:

Table 3: Windows of knowledge management (CHOO, 2002, p.261)

We know what we know	We know what we don't know
Provide Information Access	Directed Information Seeking
Facilitate Knowledge Sharing	Promote Knowledge Creation
Intranets, Portals, Taxonomies, Benchmarking	Competitive Intelligence, R&D, Market Research
We don't know what we know	We don't know what we don't know
Information Auditing	Environmental Scanning
Knowledge Mapping	Knowledge Discovery
Communities of Practice, Knowledge Networks	Scenario Planning, Future Search, Dialogue

3. The method

In order to study the visions and concrete initiatives of Brazilian firms in the knowledge management field, a single case study in a firm of the agribusiness industry was realized, aiming at leaving behind the purely terminological discussion, which is innocuous and naive. The analytical model was divided in five analytical categories as guidelines to field research, namely: (i) reasons or motives that lead the organization to KM initiatives; (ii) the firm's definition or understanding of KM or/and KM's concepts; (iii) aspects, managerial approaches and tools considered under the aegis of the firm's KM area, program or project ("KM Conceptual Umbrella"); (iv) main results related to or generated by KM initiatives.

A *sine qua non* condition in choosing the organizations involved two important aspects, respectively: (i) a genuinely Brazilian firm, with 100% Brazilian capital and (ii) the fact that the firm should already have KM implemented and, for this matter, as a primary target, CTC - Centro de Tecnologia Canavieira (Sugarcane Technology Center) was a perfect fit. The qualitative research strategy used was the study of a single case with incorporated units of analysis and two criteria were observed for the judgment of the quality of the research project: validity of the construct and reliability. Multiple sources of evidence were used – semi-structured interviews, documental research and direct observation – and the proposal of MILES & HUBERMAN (1984) was adopted in order to analyze the data collected in the field. Their proposal consists of three flows of activities: data reduction, data displays and conclusion drawing/verification.

The field research was realized in the city of Piracicaba, São Paulo, Brazil, in the period between March, 19th, 2005 to April, 12th, 2005. The updates to this study were completed in March, 2008. CTC is a non-profit civil association with its headquarters located in the city of Piracicaba, in the Brazilian federative state of São Paulo. Its main objective is to contribute to the growth and economic development of Brazil through research, development and diffusion of (i) new technologies applied to agricultural, logistics and industrial activities of the sugarcane and alcohol industries, (ii) development of new varieties of sugarcane and (iii) pest control. CTC is the market leader in its business in South America and one of the world's leading players.

The results of this single case study will be presented in the lines below.

4. Results' analysis

4.1 Main reason or motives for the adoption of KM initiatives

The main reasons or motives for the adoption of KM in the organization of this study concerned the following aspects:

- Lack of practices of protection and sharing of information and knowledge, leading the organization to a constant reinvention of the wheel and continuous duplication of efforts;
- Problems with data/information collection, treatment, organization and dissemination, indicating lack of strategic information management;
- Recognition that both information and knowledge are the main factors of competitiveness of modern times;
- Need for the creation of an organizational space for knowledge, also known as "Ba" or "enabling conditions", vis-a-vis the need to address cultural and behavioral issues.

Evidences and testimonies collected in field interviews confirm the statements above:

"[...] each part, area or department of our firm had idiosyncratic methods for storing and managing knowledge... [...] nowadays the firm is concerned with knowledge because knowledge is the main factor of competitiveness. [...] there were problems with information retrieval." (CTC's Coordinator of Technology Transfer)

"[...] I think it was a threat: the entrance of new competitors in the market, mainly in the external market. [...] and the need to do faster researches and face the new competitors: Australia, India and South Africa. [...] we had a huge knowledge loss with downsizing and retirements. ." (CTC's Knowledge Manager)

"[...] with turnover and downsizing, we had a huge critical knowledge loss... (CTC's CEO)

"[...] in today's world, changes are a constant and the speed in which they occur is getting faster and faster. [...] a firm's decision about managing its knowledge is not simply about choosing an IT product or service. It requires cultural and behavioural changes of its workers. The tools used for this process are needed, but they are only tools. In order for a firm to succeed, it's imperative that its KM process implementation comes along with programs that stimulate cultural and behavioural changes." (Documental Research, CTC, 2005)

4.2 Organizational definition for KM

There was a lack of consensus concerning a definition for KM in the organization of this study. Nevertheless, a few terms were common in the answers of interviewees (content analysis), namely, process, information, knowledge, innovation, tacit-explicit knowledge conversion, registration, sharing, organizational culture, access and use, among others. Here are a few testimonies of interviewees that confirm this assertion:

"[...] there is no consensus of what KM is or should be in the organization – it's a challenge. [...] there's a delimitation of performance areas: information treatment, tacit knowledge, enabling of sharing... [...] KM is a process, it has phases but no end. [...] process that aims to enable information and knowledge sharing, intangible assets protection, (sic) where knowledge is focused". (CTC's Knowledge Manager)

"[...] it's not very clear, but it's all that is managed for obtaining knowledge, innovation". (CTC's Chief Executive Officer)

In spite of that, the mission, critical success factors and objectives of CTC's KM process were well delineated, as shown through documental research:

"[...] CTC's KM process: (i) Mission: support the acquisition of competitive advantage through identificatrion, capture, storage, protection, organization and sharing of critical knowledge to CTC's business [...] (FIGURE 2) (ii) Critical Success Factors: (a) clear definition of the strategy and scope of CTC's KM process, (b) definition of performance indicators, goals and metrics, (c) identification of critical knowledge' relevant to CTC's business, (d) corporate commitment in the stimulus and continuous use of knowledge, (e) definition of IT infrastructure for storage and dissemination." (Documental Research, CTC, 2005)

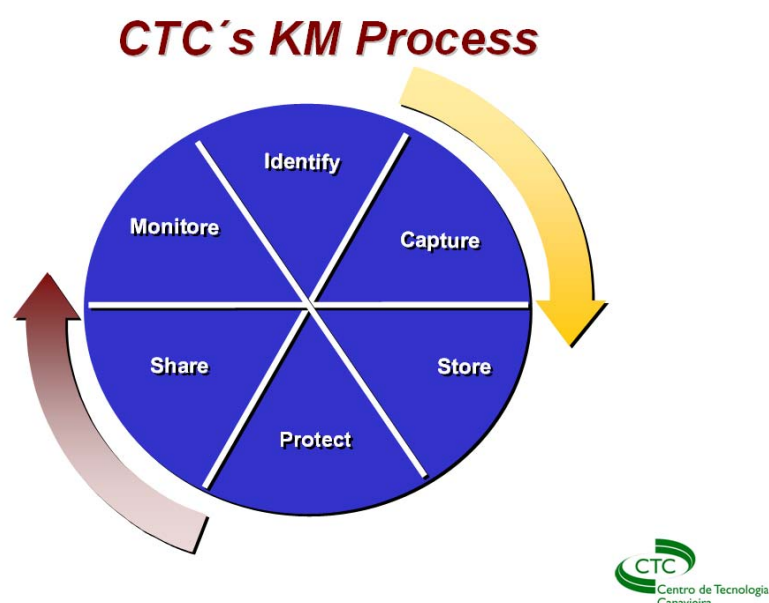


Figure 2: CTC's KM process (Alvarenga Neto, 2008)

4.3 Managerial approaches and tools considered under the "KM Conceptual Umbrella"

The next step was to investigate the theoretical proposal entitled "KM conceptual umbrella". Henceforth, the interviewees were asked to answer which aspects, managerial approaches and tools were considered under the aegis of the KM area, program or project in their firm. Here's a comprehensive summary of the answers: (a) environmental scanning, competitive intelligence, market research, (b) strategic information management, electronic document management, process mapping, (c) intellectual capital management, competencies and people management, intangible assets, (d) communities of practice – both real and virtual, (e) organizational learning, including e-learning, (f) decision making support and (f) creation of the enabling conditions or "Ba".

"[...] KM is an strategic area hooked to the directorship, providing information to support decision making processes, it's directorship's advisory". (CTC's Knowledge Manager)

"[...]to implement a rigorous taxonomy for all the organizational content." (Documental Research, CTC, Alvarenga Neto, 2005)

The interviewees were also inquired about the emphasis or priority aspects of KM in their organization. Data analysis revealed that the starting point for KM initiatives – strategic information management – was reaching a stage of concept maturity, with consciousness that it is a permanent process. The organization of this study was putting its efforts at advancing in aspects related to sharing, organizational culture and the creation of "Ba" or the enabling conditions. It's imperative to highlight the existence of many initiatives that are genuinely Brazilian initiatives, adopted to address the creation of "Ba", such as the "Cultural Moment" at CTC. CTC's Cultural Moment is one of the main activities promoted for the creation of "Ba". It's simply a meeting invited by top managers with the purpose of discussing critical issues in the productive chain of the agribusiness industry. Everyone is invited and FIGURE 3 brings an example of one of the many invitations for the "Cultural Moment":

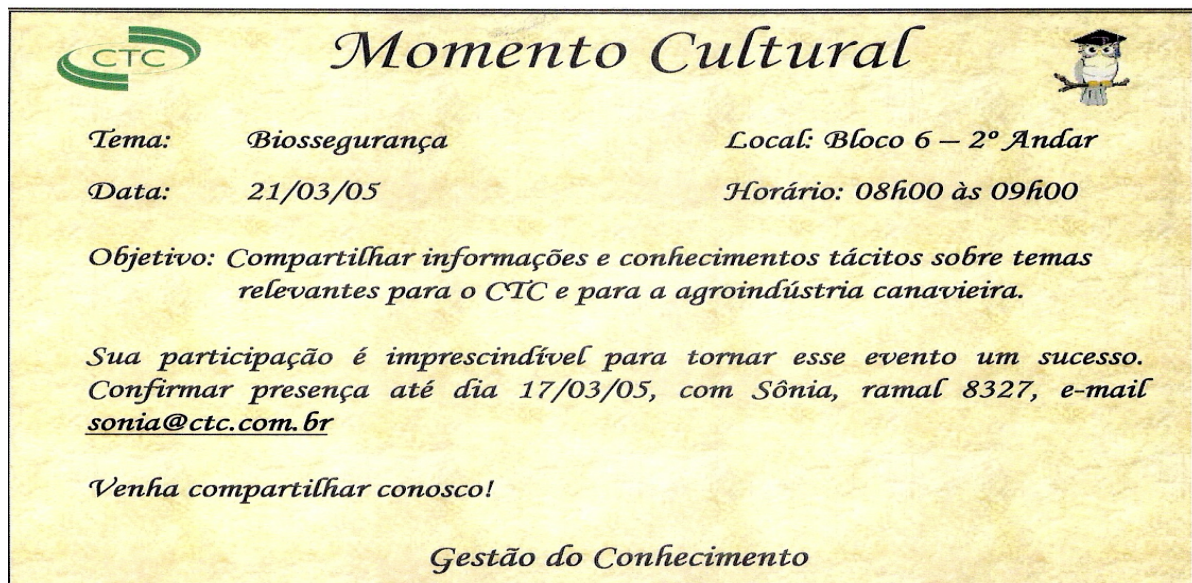


Figure 3: Invitation for CTC's "Cultural Moment" (Alvarenga Neto, 2008) - "Cultural Moment – Theme: Biosafety – Goal: to share information and tacit knowledge about relevant themes to CTC and the sugarcane industry. Come share with us! Knowledge Management"

4.4 A closer look at main KM practices in the Brazilian organizational context

In order to present the main practices and experiences of KM in the Brazilian organizational context, they will be grouped into six categories, that is to say: (a) environmental scanning, competitive intelligence, market research and activities alike, (b) strategic information management, electronic document management, process mapping and information technology (IT), (c) intellectual capital management, competencies management, and intangible assets, (d) communities of practices – real and virtual, (e) organizational learning and (f) the creation of the enabling context or 'Ba'.

(a) environmental scanning, competitive intelligence, market research and activities alike:

- formal and structured processes: clippings, market research, competitor intelligence, competitive intelligence, environmental scanning, benchmarking, information systems and data bases. At CTC, pursuing the goal of establishing spectral behaviour patterns capable of identifying and quantifying cultivated areas with registered varieties of sugar cane, geoprocessing and satellite pictures are used (FIGURE 4);
- informal and unstructured processes: international trips, internet, rumours, networking and personnel's field work.

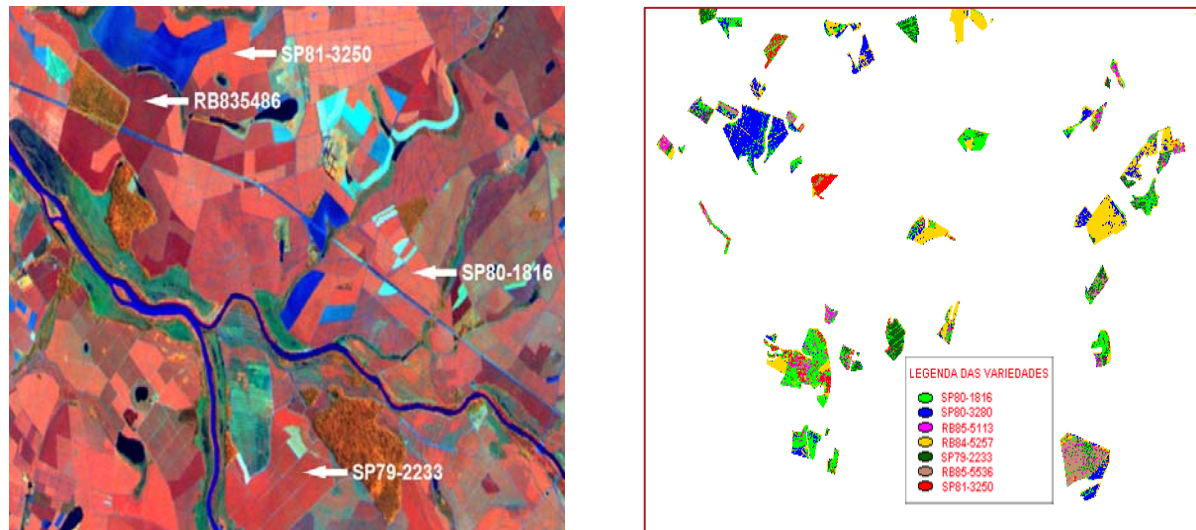


Figure 4: Use of geoprocessing and satellite images at CTC, Brazil - Landsat (Alvarenga Neto, 2008).

(b) strategic information management, electronic document management, process mapping and information technology (IT):

- strategic information management, electronic document management, process mapping: electronic document management (FIGURE 6), workflow, establishment of central data repositories for all organizational content, taxonomies and ontologies, selective information dissemination processes, corporate libraries, archival and documentation centres, digital libraries, content management, project management, processes management, public archival mapping, among others;
- information technology (IT): networks, intranets (FIGURE 5), softwares, digitalization, information security management, data bases.

*"[...]the main KM projects at CTC: **Document Management System** – its goal is to create a unique repository to all documents, in order to provide sharing and facilitate access to explicit knowledge; development of an EDM – Electronic Document Management: the organizational memory was digitalized and taxonomies were defined (today: 15.000 documents stored), an average of 200 documents are included per month." (Documental Research, CTC, Alvarenga Neto, 2005)*

(c) intellectual capital management, competencies management, and intangible assets:

- intellectual capital management and intangible assets: patents, royalties and registrations;
- competencies management and retirement programas attendance;
- programs/systems of ideas and suggestions: ideas that strengthen the core competencies of the organizations and its knowledge portfolio (FIGURE 7);
- expertise locations systems, also known as *Yellow Pages*;

(d) communities of practices:

- communities of practice: meetings, technical update sessions, chats;

- virtual communities of practice – virtual: workers are part of both internal and external communities; use of chats, conference calls, videoconference, news, knowledge libraries, discussion forums: best practices sharing and collective learning.

(e) organizational learning: a strong correlation between organizational learning and intellectual capital was revealed. Here's a comprehensive list of organizational learning practices:

- organizationl support towards continued education: scholarships granted to workers in order to pursue MBA and PhD degrees, language studies, among others. Workers are released from work for the period of time and still received their full wages;
- study groups and technical update sessions;
- 'e-learning';
- corporate universities and partnerships with universities;
- best practices databases/systems.
- training and development programs, self training centers and training programs with humans resources, marketing and information technology.

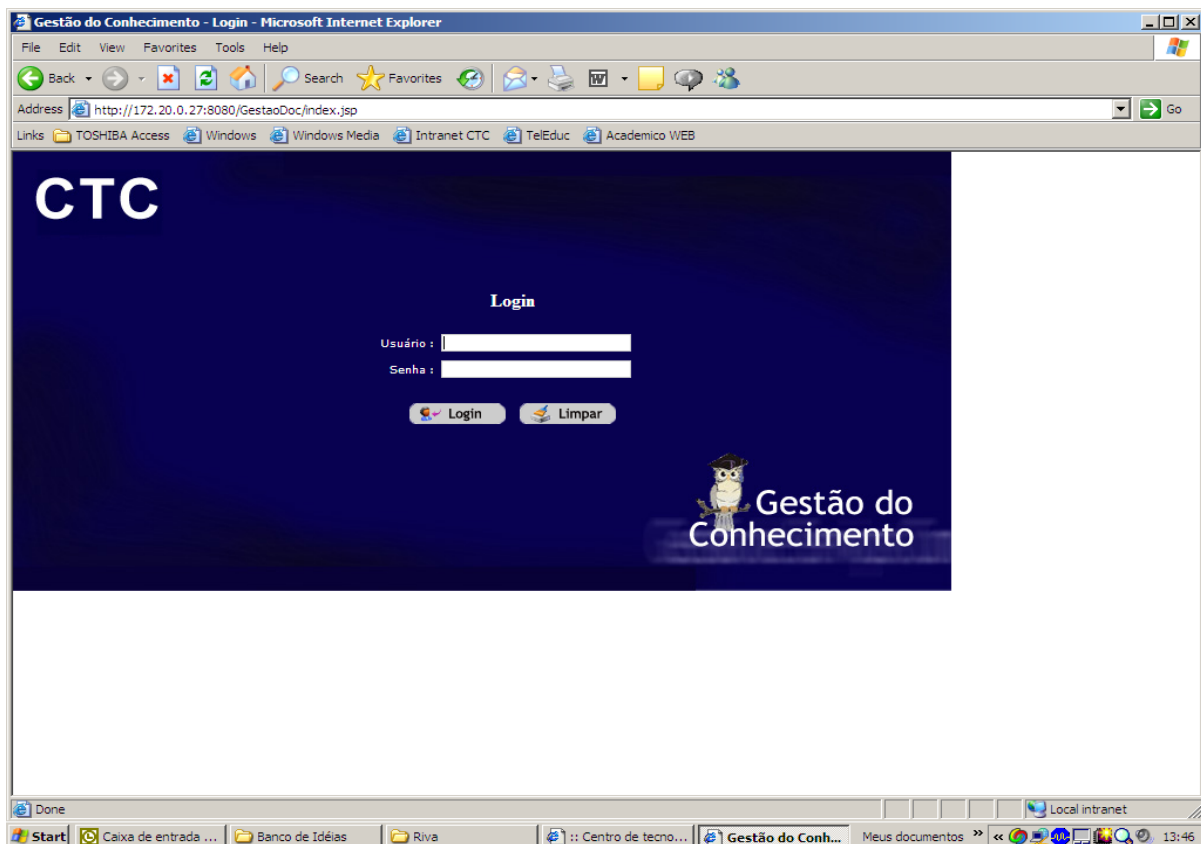


Figure 5: CTC's intranet - (Alvarenga Neto, 2008).

(f) the creation of the enabling context or 'Ba': the results point out to relevant efforts towards the comprehension and creation of a favorable organizational context.

- layout;
- creation of organizational meeting pointings for conversations, information and knowledge sharing and learning. In this sense, there are genuine brazilian initiatives, such as the "Cultural Moment" at CTC (FIGURE 3).
- organizational culture and values;
- creative chaos, empowerment, open management policies;
- tolerance towards 'honest mistakes'.

CTC's Information General Flow and EDM Process

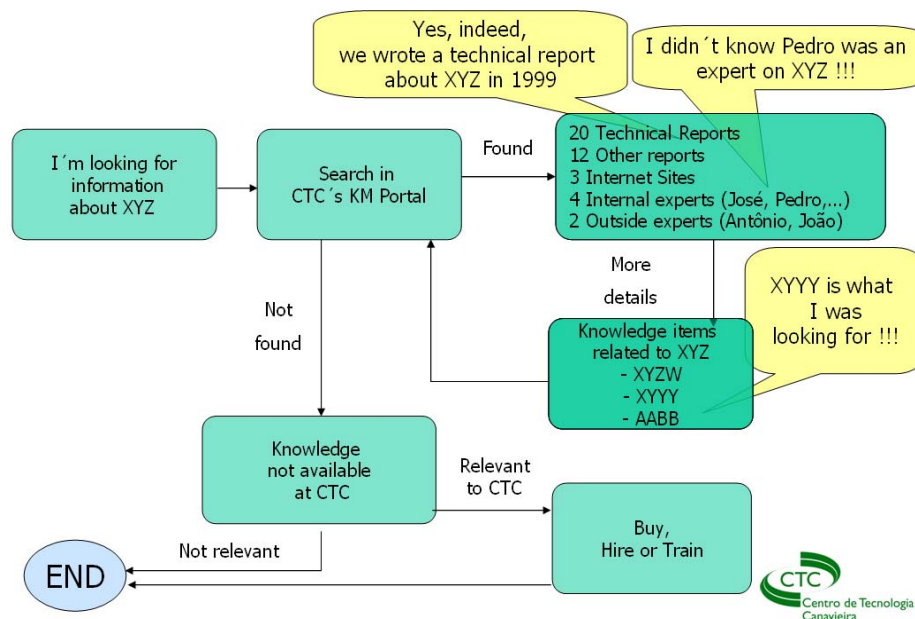


Figure 6: CTC's information general flow and EDM process - (Alvarenga Neto, 2008)

CTC's Innovation and Ideas' Program Evaluation

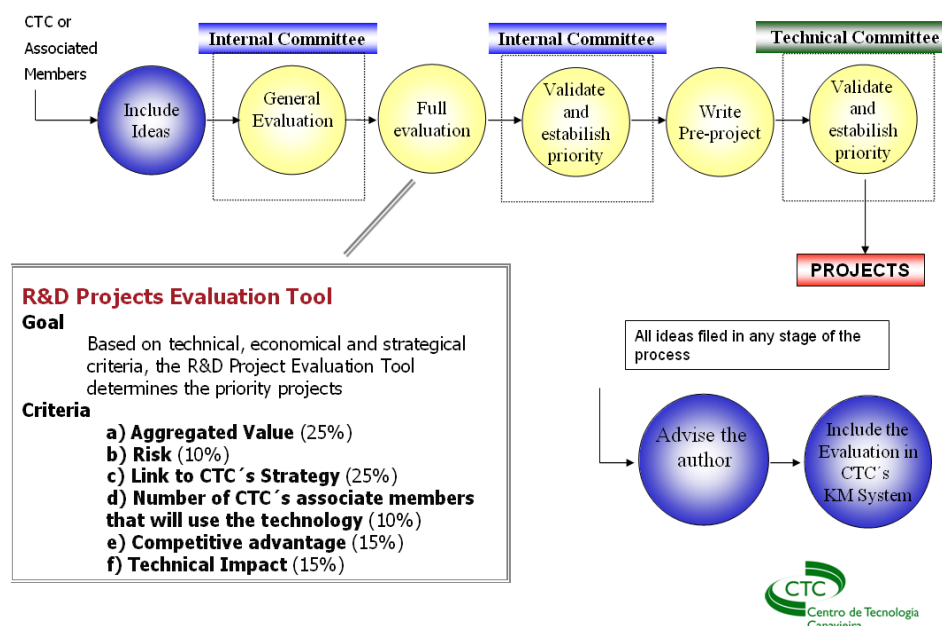


Figure 7: CTC's Innovation and ideas' program evaluation (Alvarenga Neto, 2008)

4.5 Results of KM initiatives

At last, the main results related to or generated by KM were nominated by the interviewees: (i) innovation cycle reduction and faster time-to-market solutions; (ii) market share and portfolio increase; (iii) facilitation of expertise and people location; (iv) creation of an organizational memory and repository; (iv) increase in the learning capacity and (vi) ability to anticipate competitors' actions and movements. In the last couple years, CTC had an increase in its number of employees and high skilled professionals were hired. These professionals have high academic degrees such as masters and PhD degrees, but little professional experience. The existing systems such as EDM, Corporate Library and Information Systems had an exponential increase in use and proved the effectiveness of

CTC's KM initiatives. These "old documents" were a highly important source for the newcomers and helped in their training and knowledge of CTC's business.

5. Conclusions

This paper's main goal was to investigate and analyze the conceptions, motivations, practices and results of KM effectively implemented in a Brazilian firm of the agribusiness industry. Far from proposing a definite solution or a hermetic model, it hoped to contribute for a better understanding of the field, its borders, scopes and connections. A KM integrative model/map was elaborated starting from that proposed by CHOO (1998), associated to the "Ba" or enabling conditions proposition conceived by VON KROGH, ICHIJO & NONAKA (2001), in addition to the several managerial approaches and tools metaphorically denominated as the "KM conceptual umbrella". These three ideas interconnected are contributive for the construction of a theoretical framework as a starting point. Another corollary of this work assumed the task of confirming this integrative conceptual KM framework through the discussion and analysis of a Brazilian research with Brazilian organizations committed to KM. Both the presuppositions and the theoretical framework presented in the literature review (FIGURE 1) were confirmed. This framework integrates the strategic, tactical and operational levels of the organizations concerning KM initiatives, e.g.: the strategic concept "sense making" is driven into action by using managerial approaches or tools for this purpose – found in the "KM Conceptual Umbrella" – such as competitive intelligence, market research or environmental scanning; the strategic concept "knowledge creation" is driven into action by using managerial approaches or tools such as "strategic information management", "intellectual capital" and "communities of practices", among others. From strategy to action, "Ba" is needed to bridge the gap as it creates the favorable context for creativity, innovation, empowerment and creative chaos, among others. It is interesting to observe that the managerial approaches and tools considered in the "KM Conceptual Umbrella Metaphor" are also interconnected: strategic information management is the starting point that can lead to the strategic management of intellectual capital, the organization of communities of practice, the startup of organizational memory and organizational learning and so on.

It was also identified that the main challenges facing organizations committed to KM have its focus on change management, cultural and behavioral issues and the creation of an enabling context that favors the creation, use and sharing of information and knowledge. Another remarkable challenge is the proposal or creation of a group of metrics and/or performance indicators to evaluate KM. CTC is a leading Brazilian firm with a mature KM process. It's also a benchmark for other Brazilian firms concerned with KM or KM processes. The conclusions suggest that KM is an oxymoron, perhaps an impossibility. Knowledge as such cannot be managed, it is just promoted or stimulated through the creation of a favorable organizational context. The word "management" when associated with "knowledge" must be apprehended as promotion or stimulus for the creation and sharing of organizational knowledge and KM assumes the meaning of a management from and to knowledge. There is strong qualitative evidence of a major shift in the context of the organizations contemplated in this study: from "knowledge management" to the "management of 'Ba' or the enabling conditions" that favors innovation, sharing, learning, collaborative problem solution, tolerance to honest mistakes, among others. KM is highly political, demands knowledge managers and is an endless process that needs to be aligned with the organizations' strategy and highly in tune with leadership premises. KM is not the same as information technology (IT), but it can be a process supported by information technology. Not all KM initiatives need IT, as demonstrated by CTC with its "Cultural Moment" initiative. It's recommended to test this model and also KM practices in small and medium firms in the Brazilian organizational context.

References

- Alvarenga Neto, R. (2008). *Gestão do conhecimento em organizações: proposta de mapeamento conceitual integrativo* [Knowledge management in organizations: an integrative conceptual mapping proposition]. São Paulo: Editora Saraiva (Saraiva Publishers)
- Alvarenga Neto, R. (2005). *Gestão do conhecimento em organizações: proposta de mapeamento conceitual integrativo* [Knowledge management in organizations: an integrative conceptual mapping proposition] Tese [Doctoral thesis in Information Science]. Belo Horizonte: PPGCI, Escola de Ciência da Informação da UFMG.
- Alvarenga Neto, R. (2002). *Gestão da Informação e do Conhecimento nas Organizações: análise de casos relatados em organizações públicas e privadas* [Information and knowledge management in organizations: analysis of related cases in public and private organizations] Mestrado em Ciência da Informação [Masters in Information Science]. Belo Horizonte: PPGCI, Escola de Ciência da Informação da UFMG.

- Choo, C. (1998). *The Knowing Organization: How Organizations Use Information for Construct Meaning, Create Knowledge and Make Decisions*. New York: Oxford Press.
- Choo, C (2002). *Information management for the intelligent organization: the art of scanning the environment*. Medford, New Jersey: Information Today.
- March, J. & Simon, H. (1975). Limites cognitivos da racionalidade [Cognitive limits of rationality]. In: *Teoria das organizações [Organizational Theory]*. Rio de Janeiro: Fundação Getúlio Vargas.
- Marchand, D. & Davenport, T. (2004). *Dominando a gestão da informação [Mastering information management]*. Porto Alegre: Bookman.
- Miles, M. & Huberman, A. (1984). *Qualitative data analysis: a sourcebook of new methods*. Newbury Park, California: Sage Publications.
- Nonaka, I. & Takeuchi, H. (1995). *The Knowledge-creating Company: How Japanese Companies Create the Dynamics of Innovation*. New York: Oxford University Press.
- Von Krogh, G., Ichijo, K. & Nonaka, I. (2001). *Facilitando a criação de conhecimento [Enabling Knowledge Creation]*. Rio de Janeiro: Campus.