



STRATEGIC KNOWLEDGE MANAGEMENT: IN SEARCH OF A KNOWLEDGE-BASED ORGANIZATIONAL MODEL

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ABSTRACT

This paper discusses the results and propositions of organizational knowledge management researches conducted in between 2001-2007. This longitudinal research had the unique goal of investigating and analyzing “Knowledge Management” (KM) processes effectively implemented in world class organizations. The main objective was to investigate and analyze the conceptions, motivations, practices, metrics and results of KM processes implemented in multiple industries. The first set of studies involved 20 world cases related in the literature and served as basis for a theoretical framework entitled “KM Integrative Conceptual Mapping Proposition”. This theoretical proposal was then put to proof in a qualitative study with three large organizations within the Brazilian organizational context. The results of the qualitative study validated the mapping proposition and left inquiries for new researches concerning the implementation of a knowledge-based organizational model strategy.

KEYWORDS

Knowledge Management, Information Management, Organizational Models, Organizational Strategies

INTRODUCTION

The current debate about Knowledge Management (KM) is also and mainly divulged in recent publications and research works of mainstream authors from the field of library and information science such as Davenport & Cronin (2000). They suggest that:

(...) though considerable academic and professional attention has been focused on this area in the past decade, the concept is not yet stable: the term appears to be used differently across domains with each claiming that its partial understanding represents a definitive articulation of the concept. (DAVENPORT & CRONIN, 2000)

We have intended to discuss in this article the concept of KM based not only in the available literature, but also from the observation of world class organizations that have implemented KM processes, aiming to contribute for the academic discussions in the field. The result is an integrative “map” that can be used in further discussions on the subject.

KNOWLEDGE MANAGEMENT (KM): FROM SEMANTIC DRIFT TO CONCEPTUAL SHIFT

Their inquiry is seminal: “Is it a semantic drift or a conceptual shift?” Davenport & Cronin (2000) explored the concept of KM in the context of three domains committed to KM, that is to say, (i) library and information science (KM1 - information management or KM by another name), (ii) process engineering (KM 2 - business processes, ontologies, the management of ‘know-how’) and (iii) organizational theory (KM-3 - from knowledge as a resource to knowledge as a capability; tacit and explicit knowledge conversions; the context, “Ba” or organizational space for knowledge). The objective of their proposal - called “KM Triad Framework” – is the proposition of a tool or analysis instrument that it’s suitable for exploring the tensions that might arise in any organizations committed to KM, where different domains have different understandings. The “KM Triad” can be used to identify conflicts or territorial struggles and to contribute for a collective understanding of all the interactors of the KM space in organizations. Their conclusion suggests that in evolutionary terms, there’s a major shift from information management (KM1) to informatizing (KM2) and then to information ethnologies (KM3). Knowledge management is not information management. Information management is just one of the components of knowledge management and this latter also includes topics on the creation and use of knowledge within and across organizational boundaries.

STRATEGIC KNOWLEDGE MANAGEMENT: MODELS, MAPS AND CONCEPTUAL TRIALS

Alvarenga Neto (2005) proposed a KM integrative conceptual mapping proposition. His theoretical framework was 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, Ichijo & Nonaka (2001); (iii) the introduction of such strategy in the operational level through several managerial approaches and information technology tools, which are susceptible to communication and orchestration, metaphorically named here as a “KM umbrella”. These conceptions will be roughly discussed below.

i) 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 <i>(Wikström & Normann 1994)</i>	Knowledge Creation Phases <i>(Nonaka & Takeuchi 1995)</i>	Knowledge-Building Activities <i>(Leonard-Barton 1995)</i>
<u>Generative Processes:</u> Generating new knowledge	Sharing tacit knowledge Creating concepts	Shared problem solving Experimenting and prototyping
<u>Productive Processes:</u> operationalizing new knowledge	Justifying concepts Building an archetype	Implementing and integrating new processes and tools
<u>Representative Processes:</u> Diffusing and transferring new knowledge	Cross-levelling knowledge	Importing knowledge

The third component of CHOO’s (1998) model involves (c) decision-making. The enterprise 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: (i) the decision making process is driven by the search for alternatives that are satisfactory or good enough, rather than seeking for the optimal solution; (ii) 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; (iii) a completely rational decision would require information beyond the capability of the organization to collect, and information processing beyond the human capacity to execute.

ii) 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”, the 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. Nonaka & Takeuchi (1995) and Von Krogh, Ichijo & Nonaka (2001) list the many elements of “Ba”, namely: creative chaos, redundancy, layout, organizational culture and human behavior, leadership, intention or vision of future and empowerment, not to mention organizational structure and layout, among others.

iii) The “KM Umbrella” metaphor

At last, the “KM 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’, among others. 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 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 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. This map is an evolution of the studies of the authors (SOUZA & ALVARENGA NETO, 2003; ALVARENGA NETO, 2005) and was used both as a theoretical framework and a guide for field research and data collection, and shows the levels of strategy (knowledge organization), environment (“BA”, or the enabling context,

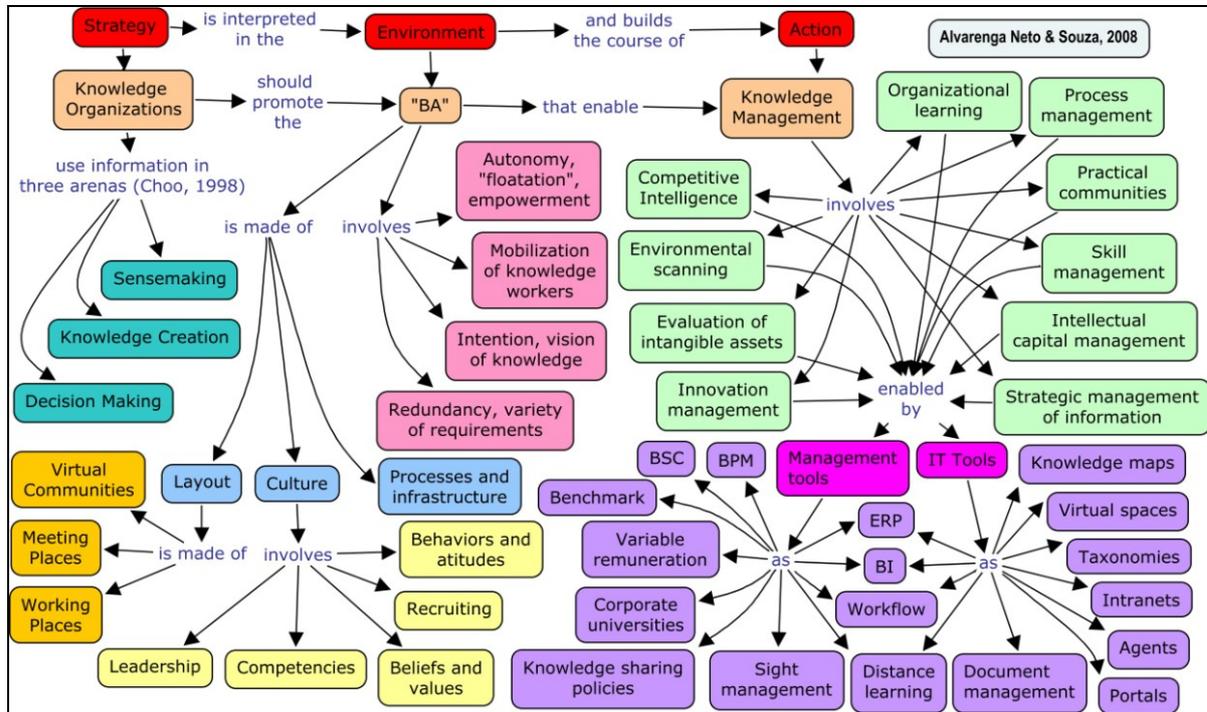


Figure 1: KM: an Integrative Conceptual Model Proposition.

and the action level, comprising all the initiatives traditionally associated to KM, along with the technology information tools and managerial methodologies, or “management tools”. The comprehend Business Process Management, Balanced Scorecard, Benchmark, Variable Remuneration, Corporate Universities, Knowledge Sharing Policies, Sight Management, Enterprise Resource Planning, Business Intelligence, Workflow, Distance Learning, Document Management, Portals, Agents, Intranets, Taxonomies, Virtual Spaces and Knowledge Maps. The explanation of each of these tools is beyond this article’s objective.

Corroborating with the integrative conceptual map above, there were proposed conceptual basis towards a management model for knowledge based organizations or knowing organizations. The starting point is a quadripartite organizational architecture, as follows: (i) strategy: focus on the firm’s knowledge and core competencies; (ii) structure: seeks flexibility for knowledge creation and dissemination; (iii) technology/processes: includes the functions of identification, capture, selection and validation, organization and storage, sharing, access and distribution, application and creation of knowledge; (iv) people: skilled knowledge workers. They assert that their proposal is performed through practices such as organizational learning, intellectual capital management and competitive intelligence, among others. FIGURE 2 summarizes the quadripartite organizational architecture of the “Knowing Organization”:

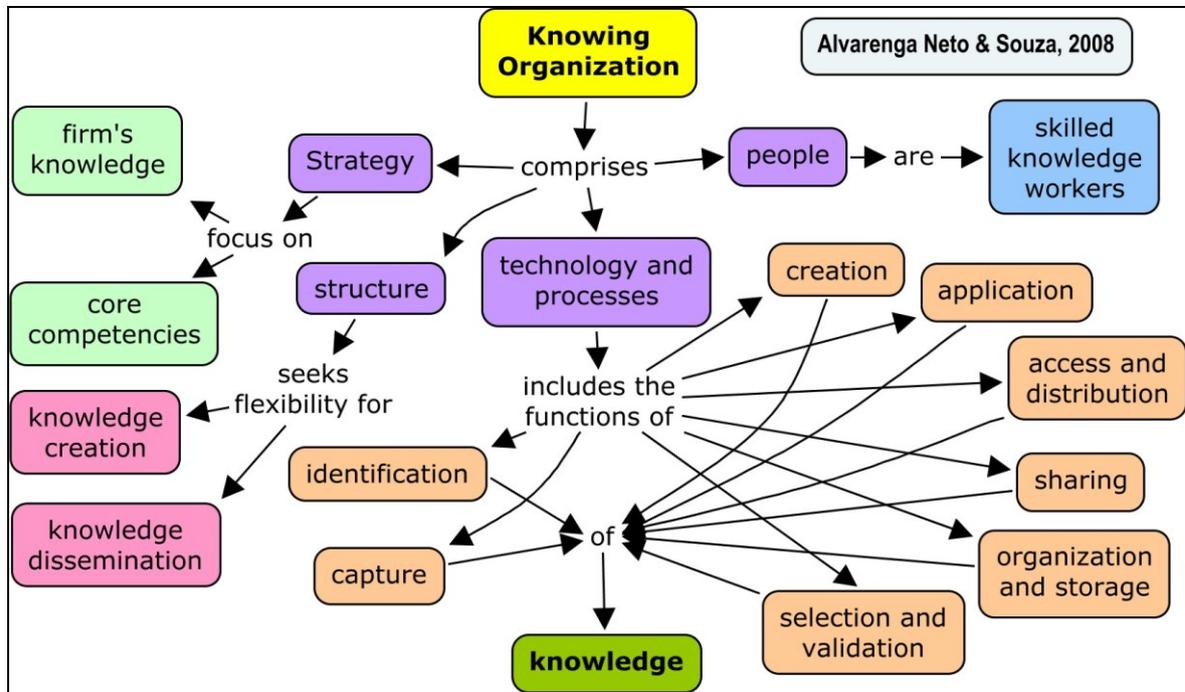


Figure 2: A quadripartite organizational architecture for the “Knowing Organization”

Figure 1 and Figure 2 presents a few common points that were investigated. In the next section, before presenting the results, the research methodologies are explained.

THE METHOD

Two sets of studies will be presented in a longitudinal perspective (2001-2007). This longitudinal research had the unique goal of investigating and analyzing “Knowledge Management” (KM) processes effectively implemented in world class organizations. The main objective was to investigate and analyze the conceptions, motivations, practices, metrics and results of KM processes implemented in multiple industries. The first set of studies involved 20 world cases related in the literature and served as basis for the theoretical framework entitled “KM Integrative Conceptual Mapping Proposition”. This theoretical proposal was then put to proof in a qualitative study with three large organizations within the Brazilian organizational context. In order to verify and test the KM integrative conceptual mapping proposition, case studies in three large Brazilian organizations were conducted. The analytical model was divided in five analytical categories as guidelines to field research. A sine qua non condition in choosing the organizations was the fact that they should have already had KM implemented and, for this matter, three organizations - each one belonging to one of economy’s three sectors - were chosen, that is to say, Centro de Tecnologia Canavieira (CTC), Siemens do Brasil and Pricewaterhouse & Coopers (PwC). The qualitative research strategy used was the study of multiple cases with incorporated units of analysis and three criteria were observed for the judgment of the quality of the research

project: validity of the construct, external validity 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 cities of (i) Piracicaba, SP, (ii) São Paulo, SP and (iii) Belo Horizonte, MG in the period of March, 19th, 2005 to April, 12th, 2005. A total of 17 interviews were conducted, which resulted in 35 hours of tape recording and 533 pages of transcriptions. As to documental research, approximately 1600 pages were analyzed with a loss of 12%. Four data reduction cycles were necessary until data could be incorporated to the final work and eight reduction displays were produced based on the analytical categories created. The results will be presented in the next section.

RESULTS

There were two sets of studies. The first set was 20 world KM cases related in the literature, and the second one was a case study research in three large organizations within the Brazilian organizational context. They will be both presented below:

i) First set of studies: 20 world KM cases related in the literature

Alvarenga Neto (2002) conducted a study based on 20 world KM cases related in business literature. The sources for his study involved magazines (such as CIO and Darwin magazines), public databases available on the world wide web (such as Webcom) and universities' databases (such as Texas University's). His analysis' model involved multiple variables but the main one revolved around Choo's (1998) proposal for the three arenas of strategic use of information in organizations: sensemaking, knowledge creation and decision making. The results revealed that the main emphasis of the 20 cases resided in the arena of knowledge creation, with a strong commitment to information management. Among the list of practices delimited in his research, practices such as competitive intelligence, communities of practice, organizational learning, intellectual capital management and a few others were found. The findings of his study were the basis for the proposal shown in Figure 1 and a second set of studies was conducted.

ii) Second set of studies: case study research in three large organizations within the Brazilian organizational context

Based on the theoretical framework designed as result of the first set of studies, the main objective of the second set of studies was to investigate and analyze the conceptions, motivations, practices and results of KM in three large Brazilian organizations. The analytical model was divided in four 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. The results are presented on the lines below.

A) Main reason or motives for the adoption of KM initiatives

The main reasons or motives for the adoption of KM in the organizations 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.

B) Organizational definitions for KM

There was a lack of consensus concerning a definition for KM in the organizations 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.

C) Managerial approaches and tools considered under the "KM Umbrella"

The next step was to investigate the part of the proposed model named "KM 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 respective organizations. 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".

The interviewees were also inquired about the emphasis or priority aspects of KM in their organizations. 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 organizations of this study were putting their 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”, like the “Cultural Moment” at CTC and the “Knowledge Happy Hour” at Siemens.

D) 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.

CONCLUSIONS

This paper’s main goal was to discuss the concept of knowledge management, and to fulfill this goal, it based the research in literary research and also in the results and propositions of organizational knowledge management researches conducted in between 2001-2007. Far from proposing a definite solution or a hermetic model, it hopes 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 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 testing this integrative conceptual KM framework through the discussion and analysis of a Brazilian research work in three world class organizations committed to KM.

Both the presuppositions and the theoretical framework presented in the literature review (FIGURE 1) were confirmed in the cases studied so far. 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 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.

The results 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.

The conclusions suggest that KM, taken literally, is an oxymoron, perhaps something impossible, but the nomenclature is far from covering the multitude of approaches, processes, techniques and initiatives that have been receiving this name. Knowledge as such cannot be managed, it is just promoted or stimulated through the creation of a favorable organizational context. 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’”.

As a result of this paper new inquiries aroused concerning the implementation of a knowledge-based organizational model strategy. Is there a pure model or is it a hybrid one based on previous propositions? If it’s a hybrid one, which ones are quintessential? Another question is whether the KM integrative conceptual mapping proposition and the quadripartited organizational architecture proposed as a model for knowledge based organizations can be fused towards a model of analysis for future researches.

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