

# KNOWLEDGE MANAGEMENT IMPLEMENTATION METHODOLOGY

## *Towards a Practical Approach*

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**Abstract:** Different perspectives from different areas contribute to the consolidation of the knowledge management research area. However, due to its underdeveloped aspect, the KM model and systematics for KM implementation found in the literature are still being discussed and there is still a gap between theoretical frameworks and technological implementation. The lack of a systematic for KM implementation may be due to the use of reductionist disciplines which do not take into consideration that KM complexity requires an integrative and holistic approach. The objective of this research work is to propose a methodology for KM implementation, comprising a KM holistic model and a systematic for knowledge management implementation to help an organization define its technological requirements.

## 1 INTRODUCTION

Currently, the greatest organizational advantage is not its technological apparatus or the amount of information it possesses, but rather the capacity to correctly use the information it bears and to generate new knowledge (innovation).

Knowledge Management (KM), the discipline the aim of which is to provide the concepts and means to enable this new knowledge society dynamics, has been receiving increasing interest within organizations and academia. Different perspectives from different areas contribute to the consolidation of this new body of knowledge. (Maier and Remus, 2003).

However, due to its underdeveloped aspect, the proposed KM model and systematics for KM implementation found in the literature are still being discussed (McAdam and McCreedy, 1999) and there still exists a gap between theoretical frameworks and technological implementations, leaving the organization with a high risk when implementing a KM strategy (Maier and Remus, 2003).

The lack of a systematics for knowledge management implementation, and its associated problems, may be a consequence of the use of reductionist disciplines which do not take into consideration that the KM complexity requires an

integrative and holistic approach (Kalkan, 2008). Focusing on just one aspect of knowledge creation and sharing process hinders the potential of knowledge management (Nonaka et al, 2008).

The aim of this work is to propose a methodology for KM implementation. This methodology should comprise a KM holistic model, derived from the knowledge management multidisciplinary aspect, and a systematics for KM implementation itself, which translates the KM model into a set of methodological steps to help the organization define its technological requirements. This paper details a literature review on KM approaches, which provided grounds for a preliminary discussion of the holistic model.

## 2 LITERATURE REVIEW

A literature review of previous KM research was done in order to support the proposed KM holistic methodology. This review was based on concepts of systematic literature review approach (Kitchenham, 2004), which follows well-defined methodological steps to guide the execution of search in indexed academic reference digital databases.

The selected papers were analyzed regarding the following aspects: *Paradigm* (philosophical and

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theoretical framework of the perceived reality used by the approach), *Perspective* (chosen approach to handle the perceived reality), *Focus* (the problem being addressed), *Knowledge concept* (definition of knowledge within the research context) and *Basic Elements* (KM elements/dimensions considered in the definition of the proposed solution).

The proposed models and techniques in the literature were based on concepts from one of the two paradigms: 1) *cartesian*: the approaches based on the Cartesian paradigm consider as main goal the fragmentation of knowledge into objects or knowledge items possible to be stored in databases and, as such, valid knowledge is what is stored in the organizational memory (Xie et al, 2006) (Wang et al, 2002) (Andersson et al, 2005) (Heravizadeh and Edmond, 2008) (Luo et al, 2008); 2) *holistic* approaches which have the perception that the process of knowing is more important than what was learned, meaning that the exploitation of the organizational potential in developing new capabilities for acquiring knowledge is more important than the knowledge acquired (Merali, 2000) (Lin, 2007) (Bhatt, 2001) (Forzi and Peters, 2005) (Wyssusek et al, 2001) (Sunassee and Sewry, 2003) (Papavassiliou and Mentzas, 2003) (Vanhoenacker et al, 1999) (Li et al, 2004) (Bettoni and Schneider, 2003) (Swain and Ekionea, 2008) (Greiner et al, 2007) (Maier and Remus, 2003).

Analyzing the perspectives, it is possible to identify two well-defined groups: 1) *human-oriented (social-cultural)*: the human-oriented approaches are related to personalization strategy, in which the managed knowledge is inside people's heads and, as such, the enhancement of communication, training, knowledge sharing and socialization between employees become the KM goals (Hansen et al, 1999) (Maier and Remus, 2003) (Jasimuddin, 2008) (Merali, 2000) (Wyssusek et al, 2001) (Bettoni and Schneider, 2003); 2) *technology-oriented (technocratic)*: are related to the codification strategy, in which knowledge can be separated from the person and the objectives of KM entail the documentation of knowledge, development of databases and knowledge capture (Hansen et al, 1999) (Maier and Remus, 2003) (Jasimuddin, 2008) (Xie et al, 2006) (Wang et al, 2002) (Andersson et al, 2005) (Heravizadeh and Edmond, 2008) (Luo et al, 2008).

However, a third perspective, the process-oriented, is beginning to emerge on the literature. In this case, the organization is seen as an interrelated chain of events in which everything exists in relation (Nonaka et al, 2008) (Maier and Remus, 2003) (Bhatt, 2001) (Lin, 2007) (Forzi and Peters, 2005) (Papavassiliou and Mentzas, 2003) (Vanhoenacker

et al, 1999) (Sunassee and Sewry, 2003) (Li et al, 2004) (Swain and Ekionea, 2008) (Greiner et al, 2007).

About focus, it was possible to define seven groups of problems discussed: *Aligning KM and Business Strategy* (Sunassee and Sewry, 2003) (Papavassiliou and Mentzas, 2003) (Swain and Ekionea, 2008) (Greiner et al, 2007) (Maier and Remus, 2003), *Handling Contextual Knowledge* (Andersson et al, 2005) (Heravizadeh and Edmond, 2008), *Handling collaboration and knowledge sharing* (Vanhoenacker et al, 1999) (Xie et al, 2006) (Wang et al, 2002) *Handling the learning process* (Merali, 2000) (Wyssusek et al, 2001) (Li et al, 2004), *Handling the evolution of KM through time* (Lin, 2007), *Integrating KM techniques and factors* (Forzi and Peters, 2005) (Bhatt, 2001) and *Identifying KM constructs* (Bettoni and Schneider, 2003) (Nifco, 2005).

Within each analyzed proposals, several concepts of knowledge are used. However, two major categories can be observed: 1) *discrete quantifiable objects*: closely related to the Cartesian paradigm, the knowledge concept as quantifiable objects takes into consideration that knowledge is something which can be divided into different types/categories and/or stored in databases, and valid knowledge is what is stored in the organizational memory. This concept tends to be used by technological approaches of KM, in which the storage in best practice repositories became the central concern (Papavassiliou and Mentzas, 2003) (Andersson et al, 2005) (Heravizadeh and Edmond, 2008) (Luo et al, 2008) (Li et al, 2004) (Xie et al, 2006) (Wang et al, 2002); 2) *continuum of a learning process*: opposed to the mechanistic conceptualization of knowledge is the perception of the process of knowledge creation and transformation through socialization and learning between individuals. In this case, it is not possible to divide knowledge, and it is inherent, to the people involved, and it depends on the context of each one of these (Forzi and Peters, 2005) (Wyssusek et al, 2001) (Vanhoenacker et al, 1999) (Bettoni and Schneider, 2003) (Bhatt, 2001) (Merali, 2000) (Maier and Remus, 2003).

All of the analyzed approaches possess a set of basic elements which together, define the proposed solution. These elements are the KM dimensions, the key entities considered in the proposed solutions. It was possible to identify elements such as: People, Groups, Projects, Organization, IT, Culture, Process, Techniques, etc., which relate in different ways, depending on the perspective and focus used.

### 3 HOLISTIC MODEL

This work argues that it is possible to define a KM implementation methodology following a holistic paradigm and providing guidelines for obtaining KM requirements in organizations. From the literature review, it was possible to identify a trend toward considering, at some level, People, Organization and Context as basic elements in the KM approaches. In the proposed model, Figure 1, the elements People and Organization are translated into broader concepts as Individual and Groups; the element Mission was added to represent the sense of purpose, and their intersection defines the Context.

The knowledge creator (the person) possesses values, beliefs and needs that dictate the organizational dynamics. The individual is able to present new insights regarding a given subject to the context and, create new knowledge. This knowledge emerges from the person’s past experience, which dictates who he is and how he relates to the world (Nonaka et al, 2008).

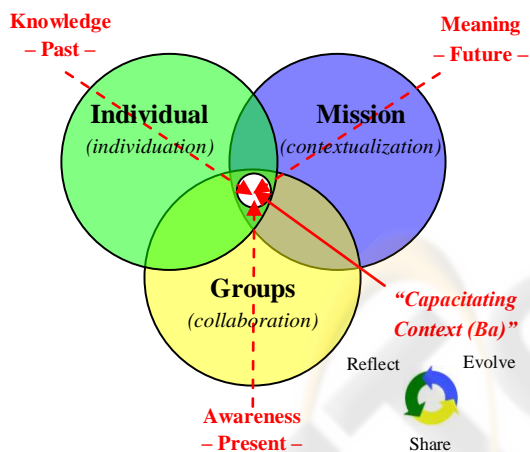


Figure 1: KM Holistic Model

Those individuals interact with each other in a non-deterministic manner creating what can be understood as social networks. The element “Groups” in the model represents this relationship among individuals and the awareness they have regarding the environment they belong to (Nifco, 2005). The intersection between the elements “Individual” and “Groups” represent the understanding that the organization/group has a set of characteristics that only rise from interactions..

Both “Individual” and “Groups” are guided by a set of objectives and motivations (“Mission”) dictating context in the organization. It is the

organization’s vision and values which provide meaning to each action and an outlook of the future (Nifco, 2005) (Nonaka et al, 2008). The element “Mission” represents the need for analyzing each action/decision based on which context it was taken, meaning the process of questioning “why?” and understanding a given reality.

These elements in the proposed model should be analyzed in an integrated and holistic fashion, and the alignment between them should become the central objective of the KM approach. Based on Nonaka’s theory, KM efficacy depends on a capacitating context (*Ba*), a shared environment enabling new relationships, which can be real, virtual, mental, or all of these (Nonaka et al, 2008).

As such, KM is a never-ending process in which an individual deeply reflects on his past experiences, shares his experiences with the group and evolves by becoming a *new self* (Nonaka et al, 2008) through the interactions with the organization, and defining a new meaning to its actions.

Considering that the *Ba* comprises the intersection of groups, individuals and mission, it is argued that business models (Sharp and McDermott, 2009) can be a viable perspective to be used in order to help the analysis of the *Ba* within an organization. Business models are approaches for understanding organizations regarding their business objectives, processes and participants. From business models, it is possible to observe the different facets of the holistic model in a way so as to help the identification of knowledge management requirements aligned to the business strategy.

### 4 CONCLUSIONS

KM is usually discussed through abstract considerations at a conceptual level. In addition, when implemented, this is done in a non-systematic manner tending to a technocratic or social perspective, leading to initiative failure.

A KM holistic model was proposed. However, the model alone does not provide the guidance needed, demanding a set of methodological steps in order to aid the organizations which need to and are interested in, implementing a KM solution.

As such, three major phases were proposed for an initial discussion towards the definition of a systematics for KM implementation: *collection of expectation* (the definition of KM objectives inside the organization, as well as the process of defining the expectation towards the KM initiative); *establishment of a common context* (analysis and



understanding of the organizational context using the business process as an integrative/holistic perspective); *Identification of problems* (identification of knowledge gaps between what is expected and what actually happens)

The process-oriented perspective was chosen, focusing on the KM requirements elicitation which enables alignment with the business strategy. As future work, the need is outlined for detailing the systematics and the conduction of an exploratory study in order to observe its preliminary results.

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