CRITICAL KNOWLEDGE MONITOR SYSTEM MODEL

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KEYWORDS

Knowledge Management, Critical Knowledge, Ontology Engineering.

ABSTRACT

Knowledge Management (KM) could be a part of the answer to the new challenges that organizations face: Economy crisis; Organization Reengineering; Staff Reduction and Turnover; the Succession Phenomena (employee's retirement); Key intellectual Property; and Vulnerability to rapid change (Alavi & Leidner, 2001; Complispace, 2009; Kebede, 2010). These aspects are central for today's organizations and this leads to new demands for the Knowledge Management Systems (KMS) such as training new employees and employee with different knowledge-base levels and job functions, kept key roles and core competencies and use of the existing knowledge wide sources: knowledge from suppliers, clients and partners; knowledge from internet sources; knowledge from Business Intelligence; and inference knowledge (e.g. Knowledge from Data Mining techniques). For these reasons, KM appears in Information Systems and Technology (IST) as a subject of greate interest since it not only deals with knowledge within organizations, but it also looks to the organization technology that can facilitate the main objectives of KM: applying IT to Knowledge sharing (KM 1st generation), Tacit/Explicit Knowledge conversion or Knowledge conceptualization and nurturing (KM 2nd generation) and finally Knowledge Value Creation, Organizational Learning, Knowledge creation and content management (KM 3rd generation) (C. V. a. Y. Rezgui, 2008; Y. Rezgui, Hopfe, & Vorakulpipat, 2009).

Andreas Abecker defines a set of basic activities of Knowledge Management: Knowledge acquisition, Knowledge Identification, Knowledge development, Knowledge preservation, Knowledge dissemination and Knowledge utilization (Andreas, 1998). The activity of Critical Knowledge preservation is the main focus of this research.

In this research we define the main concept of the Critical Knowledge Monitor System and its components as part of a solution to the challenges that organizations face. Looking at for the organizational critical knowledge through the combination of these perspectives (Competitive Advantage, Intellectual Capital and Business Continuity) is new to Knowledge Management area.

KM is an area that consumes time and resources: both human and technological. Different kinds of knowledge appears in both parts of an organization: operational and management. But not all knowledge is critical to the organization. The Critical knowledge could be about a new product to the market, a project under development, a research and development project or even knowledge protected by law. In a logic of business continuity it is the knowledge that is vital for the organization survival and viability Heng apud Hellström (Hellström, 2004). In other words, it is the unique organization knowledge that distinguished form others (Schwartz, 2006). So, the investment in KM should be focused in the Critical Knowledge Preservation.

Concerning this, some questions are formulated: Q1 - How to identify organization's Critical Knowledge? Q2 - How to preserve Critical Knowledge as organizational Intellectual Capital, Competitive Advantage and Business Continuity perspectives? These questions address the motives of this research.

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The main objective of this research is to Model a critical knowledge monitor system as part of the solution to the identified problem. Although, there are aspects that we couldn't left out of this research, such as: classifying the knowledge as critical (O1); preserve and prevention of breakthrough of critical knowledge (O2). To achieve the objectives we need to focus in certain considerations; for the first one, we need to identify and evaluate and classify the organizational critical knowledge; for the second objective we need to store, control and monitor the use and access to the critical knowledge within organization and with external entities.

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The Critical Knowledge Monitor System (CKMS), see Figure 1, should be capable of capture knowledge, classify it as critical, compare with organization critical knowledge ontology stored in a repository, monitor the use, access and alterations of the critical knowledge within the organization and by the external entities that the organization has knowledge exchange (suppliers, clients, among others). In order to achieve this, the system must monitor the communications based on computing and stored documents of the organization and alert when critical knowledge is in use.

Figure 1: Critical Knowledge Monitor System Model.
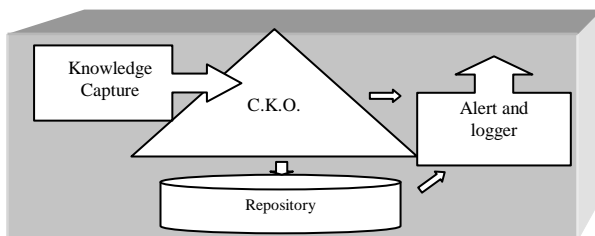
WORK PLAN

Table 1: Research Plan

Research Activity	Research TimeLine

A1. Critical Knowledge Monitor System Architecture	Out11 – Dec11
JA1. Critical Knowledge Monitor System Model	Jan12
A2. Organizational Critical Knowledge Ontology Construction	Jan12 – Apr12
A3. Organizational Critical Knowledge Repository Choice	Apr12 – Mai12
A4. Capture of Knowledge in Organization Environment	Mai12 – Oct12
JA2. Classifying the knowledge as critical	Dec12
A5. Alert and logging of use, access and alteration to Critical Knowledge	Jan13-Mar13
A6. Critical Knowledge Monitor System Model Validation: Prototype	Apr13 – Dec13
JA3. The results of the efficacy and efficiency of the Critical Knowledge Monitor System	Jul14
Thesis Writing	Until Jul14

Ax – Activity; JAx – Jornal Article

WORK IN PROGRESS

In order to validate the model we submitted a paper titled "Critical Knowledge Monitor System Model" to the 4th International Conference on Agents and Artificial Intelligence. The paper is under review.

In order to validate de starting point of the evaluation of the model we submitted a paper titled "The Matrix of Quality Dimensions of Knowledge Management: Knowledge Management Assessment Models Review" to the 12TH International Conference on Knowledge, Culture and Change in Organizations. The abstract is under review.

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