A University Knowledge Management Tool for the Evaluation of the Efficiency and Quality of Learning Resources in Distance e-Learning

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ABSTRACT

To compete in today’s web-based society, virtually every university offers an option for distance e-learning. Universities have developed and maintain up-to-date electronic resources and materials. It is important that these resources are examined and tested from the point of view of the end-users, and to be in accordance with the relevant regulatory requirements and documents. The realization of a well-functioning university knowledge management system includes various software tools for assisting the decision-making process for the four main activities of the universities. In this article, a generic teaching knowledge management module structure, including the full-time and part-time type of learning, and the distance type of e-learning, is proposed. The main goal of the article is the presentation of an expert system concerning learning resources as a part of the university knowledge management system that can be used as a decision support tool for the achievement of competitiveness and sustainable development in some processes related to distance e-learning at the university.

KEYWORDS

E-Learning, Distance Learning, Expert Systems, Knowledge Management (KM), University Knowledge Management

1. INTRODUCTION

Knowledge management is an interdisciplinary field with an extremely applied nature. Though people have been managing knowledge for centuries, only in recent decades Knowledge Management (KM) has begun to form as a separate scientific discipline with its specific subject matter. The main purpose of KM is not only the management of knowledge in general, but also the distinction of that knowledge that can become a useful resource and an engine for organizations, individuals, and the economy as a whole. Knowledge in the past has been seen as a force and privilege of a closed circle of initiates, while present knowledge is a competitive advantage and the only guarantee of sustainable development.

Knowledge management is a management approach for gathering, processing, and arranging knowledge specific to the enterprise (organization). It functions as a six-step process - acquiring, creating, synthesizing, sharing, using knowledge to achieve organizational goals, and creating a supportive environment for sharing knowledge. Ernst & Young promotes a 4-phase approach to KM: generating knowledge, presenting knowledge, coding knowledge, and applying knowledge. The implementation of knowledge management focuses on four main aspects: people, culture, content, and technology.

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Jennex (2005a) defines KM as a practice for selectively applying knowledge from previous decision-making experiences to current and future decision-making activities with the express purpose of improving the efficiency of the organization. Another key definition of KM is proposed by Holsapple & Joshi (2004), who view KM as an entity’s systematic and deliberate efforts to expand, cultivate, and apply available knowledge in ways that add value to the entity, in the sense of positive results in accomplishing its objectives or fulfilling its purpose. Alavi & Leidner (2001) conclude that KM involves separate but interdependent processes of knowledge creation, knowledge storage and retrieval, knowledge transfer, and application of knowledge. These knowledge management definitions focus on the key elements of KM: the use of knowledge for making decisions and for selective capturing of knowledge. Moreover, KM, in short, can best be described by the popular phrase “getting the right knowledge for the right people at the right time” and can be seen as a cycle of acquisition, preservation, evaluation, dissemination, and application of knowledge.

KM systems should provide the basic structure of KM by providing knowledge workers and organizations with better access to existing knowledge resources and an improved process of their exploitation. These systems are based on IT and are designed to build on the processes of knowledge creation, transfer, and application. They are complex socio-technological solutions that enable users to create active knowledge and share them by interacting with other agents. The main purpose of KM systems is to make existing knowledge better used within the organization, serving as a basis for further decision-making and learning.

The perspective of (Churchman, 1979) regarding KM (a KM system, in his view, could accept any form necessary to achieve the objectives of preserving knowledge and their re-using in order to improve organizational and individual decision-making) arbitrates that KM and KM systems combine—in a holistic way—the organizational and technical solutions.

Alavi & Leidner (2001) defined a KM system as “IT (Information Technology)-based systems developed to support and enhance the organizational processes of knowledge creation, storage/retrieval, transfer, and application.” They assert that not all KM initiatives implement an IT solution, but Alavi and Leidner support IT as a means of facilitating KM. Maier (2002) expands on the IT concept for the KM system by calling it an ICT (Information and Communication Technology) system that supports the functions of knowledge creation, construction, identification, capturing, acquisition, selection, valuation, organization, linking, structuring, formalization, visualization, distribution, retention, maintenance, refinement, evolution, accessing, search, and application. KM systems are often a centralized, self-contained information solution (Maier, 2002), which aims to “extract” the “neutral” knowledge from employees and to verify, transfer, and store them appropriately in the data base or knowledge base of the organization. For example, as a result of a survey (Maier, 2002), it has been found out that almost all major organizations have an intranet and/or a cooperative platform that offer the core functionalities of KM. The ICT systems that are connected to KM often lack enough integrity with the other systems. As a result, KM systems are considered being extremely complex ones, as they are a crossroads of technological, organizational, and human factors (Maier, 2007). Meanwhile, employees - more often than not - are in need of apt ICT solutions to support their day-to-day work.

Jennex (2005) views a KM system as that system created to facilitate the capture, storage, retrieval, transfer, and reuse of knowledge. Stein & Zwass (1995) define an Organizational Memory Information System (OMS) as the processes and IT components necessary to capture, store, and apply knowledge created in the past on decisions currently being made. Jennex & Olfman (2006) expand this definition by incorporating the OMS into the KM system and adding strategy and service components to the KM system.

In spite of the significant number of existing architectures of KM systems, researches show that they have not been put into practice utterly, thus are underused and are not providing sufficient support in knowledge work (McAfee, 2006). The indicated fact requires KM systems to change and respond to the new requirements.
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