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A Knowledge Management Approach in Higher Education

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Abstract

We are moving in the global knowledge society, where organizations have to improve their knowledge assets in order to innovate and respond to a changing society. Higher education institutions are in the knowledge business where they are facing new provocations and they have to develop structures and processes to deal with the coming challenges. Within this framework, the development of a system based on the management of knowledge is likely to be a solution to lead them toward organizations, which have the ability to react intelligently and adapt to changing external conditions.

Nevertheless, knowledge management in higher education is a new field, and experiments are just at a beginning in these organizations. This study has investigated the introduction of knowledge management into higher education, holding forth the development of a knowledge management environment based on collaboration technology as a possible solution for a more targeted and effective knowledge creation, sharing and transfer.

Keywords: higher education, knowledge management, collaboration environment

1. Introduction

In the twenty-first-century century, success can be achieved by continuously using existing knowledge and creating new one, in response to a rapid changing society. In this new environment, knowledge has become a strategic resource, the most difficult to transfer and with the potential to become the most valuable asset.

It is now clear that the future will belong to those who can acquire and apply knowledge that the global markets demand, in a world where the generation rate of new knowledge is accelerating [14].

The ability to make decision and take effective action requires the management of diverse knowledge, to find solutions at problems and take advantage of opportunities [3]. Therefore, organizations are now expected to manage their knowledge in a more effective way, in order to improve their competitiveness.

A higher education institution is an organization where knowledge is transform and transfer through teaching and learning, research, publication or assessment and over the time, they have developed methods and processes in order to capture, organize and distribute their knowledge. However, higher education institutions are confronted with new challenges including the impact of globalization, internationalization and competition, the diverse expectations placed on learning and research achievements, and the rapid changes in technologies ([15], [20]).

In responding to these challenges, most traditional approaches in higher education seem to be no longer adequate in creating, acquiring, dissemination and transmission of knowledge.

In this context, higher education institutions will be required to expand innovation in research, teaching and other services to keep pace with the transformation of the knowledge society.

While the idea that knowledge management might be a solution for higher education to respond to coming challenges is provocative, the research in this field is relatively underdeveloped. This study presents an approach of knowledge management in higher education and starts with a review of the literature in the field of knowledge management in higher education. Taking into account the key contributions in the field, several aspects of knowledge management in higher education are emphasized. A knowledge

management-based environment is proposed and several conclusions and recommendations are presented at the end of the article.

2. Knowledge management in higher education

Knowledge management is today the subject of much literature ([1], [12], [21] etc.). Many of the academic journals have produced special knowledge management issues and several trade journals are used by the knowledge management community around the world.

Knowledge management can be defined as the task of developing and exploiting an organization's explicit and tacit knowledge resources [4]. Knowledge management refers to the totality of organizational strategies aimed at creating an organization that is able to identify and transfer its explicit knowledge held in artifacts and tacit knowledge possessed by people and communities, and to create new knowledge. Organizations progress from simple knowledge management systems such as capturing and filtering existing knowledge, to more complex ones such providing systems for people to continuous transform the data collected into knowledge [12].

Higher education institutions are in the knowledge business since they are involved in knowledge creation, dissemination and learning. The scope and objectives of higher education are consistent with knowledge management principles [2, p.66]: the creation of knowledge (research), the transmission of knowledge (teaching) and the maintaining of knowledge in libraries.

In higher education, the academic knowledge becomes explicit when it is disseminated through teaching and publications. Knowledge transmission and sharing take place across institution as students participate in the teaching and learning process, as academia engage in research, as faculties interact, as universities collaborate with other organizations.

Consequently, a university seems to be well suited to the adoption of knowledge management practices as its environment emphasizes the exchange of ideas, as well as the dissemination and sharing of knowledge [5].

In higher education, knowledge management has been defined "as a set of organizational processes that create and transfer knowledge supporting the attainment of academic and organizational goals" ([23], p. 9). According to Townley, the division of university into departments creates boundaries that are still difficult to transcend and the aim to assure the academic freedom make universities to be against the management of knowledge. In addition, the academia is generally rewarded for developing new knowledge in their disciplines and for teaching students, and they are less likely to be rewarded for creating mechanisms for sharing of knowledge in their area of expertise (and especially the tacit knowledge). However, Townley concludes that academia can learn to manage knowledge, so everyone involved in higher education will benefit from the resulting effectiveness and efficiency.

Metaxiotis and Psarras [14] indicate several reasons for which knowledge management it is so important for higher education (p.356): it can contribute to the integration of new knowledge with the existing one or it can increase the relation between work and education.

In a study assessing the challenges that higher education institutions face in implementing knowledge management, Rowley [19] presents several knowledge management objectives that universities need to address: "the creation and maintenance of knowledge repositories; improving knowledge access; enhancing knowledge environment; and, valuing knowledge" (p.329). She indicates that the greater challenge is related to significant change in culture and values, organizational structures and reward systems.

Based on the lessons learned in corporate sector, Kindwell et al. [11] presents opportunities for higher education institutions to apply knowledge management practices in different processes and services such as the research process, curriculum development process, student and alumni services, administrative services, and strategic planning.

Steyn [22] emphasizes the role of knowledge management in improving effectiveness and efficiency in higher education institution. Guidelines for implementing knowledge management at higher education institutions are also developed in this study.

Within this framework, the development of an organization where knowledge management activities are of high priority seems to be one of the solutions for higher education to respond to

the coming challenges and to lead toward an organization which has the intelligence to respond and adapt in a manner that meets its organizational goals.

3. A knowledge management environment in higher education

The following components are essential for knowledge management: acquire, filter, organize, disseminate, apply and create new knowledge [8]. The important question that arises is how knowledge management can be adopted by higher education.

Higher education institutions must developed appropriate strategies and policies in order to achieve an effective management of their knowledge:

a) develop mechanism to acquire, select, organize and retrieve knowledge, both within and from outside the institution, and especially of those knowledge that considerably contribute at the differentiation of the organization.

b) develop management practice to transfer knowledge across organization, with a special attention at the management of tacit knowledge, which is more difficult to understand and transfer.

c) disseminate knowledge, by communication facilitation, communities of practice and interest, and organizational culture development.

d) develop the ability to apply and continuously create new knowledge.

Based on the Rowley's objectives and the knowledge management framework presented in [1], a knowledge management system in higher education should include facilities for integrated knowledge repositories, with knowledge organization and search functions. Easy access to all relevant knowledge sources, using solutions that mobilize knowledge when and where it is needed must also provided. A knowledge management system should also sustain the flow of knowledge (including virtual teamwork) and the development of communities of practice and interests. In addition, value to knowledge may be added through collaborative effort, to improve the competitiveness of universities and provide a sustainable competitive advantage.

Transforming explicit into tacit knowledge, sharing knowledge about teaching and learning, research and other services of a university, or

capturing the best practices are challenges facing the higher education institutions. It is very difficult to respond to these provocations and to implement knowledge management without an adequate support of technology.

Fry states that in order to compete in the global higher education market, universities must use the technological advancements as strategic tools, capable of transforming educational practices [6].

Luan and Serban [13] indicate that many technologies and tools can be used for managing organization knowledge: "business intelligence, collaboration, content and document management, e-learning, knowledge base, portals, customer relationship management, data mining, workflow, and search" (p.85).

Kindwell et al. [11] suggest that among the possible application for knowledge management, the intranet-friendly Web-based portals that integrate collaborative tools, content organized by topic, text search capabilities and so forth, are the most used.

Raman et al. [18] explore how collaboration technology can be used to implement a knowledge management system for teaching and learning and for this purpose, they find in wiki technology an effective support to address knowledge management goals for teaching and learning.

What knowledge management tools are appropriate to be used in higher education? Geng et al. [7] indicate that the economic development may influence higher education institutions ability to acquire or use some knowledge management tools and conclude that similar organizations operating in different environments use knowledge management tools that respond to their national realities.

Therefore, a survey was conducted among Romanian academia community interested in this field. A scale with one being the lower and five being the higher value was used in this survey.

A Web-page survey was developed and its address was e-mailed to 25 members of the academic community interested in the field of knowledge management and 12 responded to the survey, with a return rate of responses of 48 %. The respondents were asked to rate each of the five knowledge management tools at their university and the results of the survey are presented in Table 1. As is shown in Table 1, Romanian academia community reports the higher means for collaboration software.

Table 1. Knowledge management tools in Romanian higher education

No.	Knowledge management tools	Mean	Rank
1.	Collaboration software	3,35	1
2.	Computer based training	3,05	3
3.	Instructional technologies	3,00	4
4.	Library catalogues	3,30	2
5.	Portal software	3,00	4

Taking into account the Rowley's objectives, the characteristics of the knowledge management environment based on collaboration technology are described below:

a) Creating and maintaining integrated knowledge repositories

Knowledge in the form of entity that can be linked to other objects and to external knowledge resource.

Quick retrieval and locate of relevant entities using query and search functions.

b) Improving knowledge access

Seamless access to all relevant entities, visualization of entities changes and possibility to subscribe to entities.

c) Enhancing the knowledge environment

Collaboration process of knowledge creation in a specific context supported by communities of interests, on-line discussion, comments and contact reference persons facilities.

d) Valuing knowledge

Adding value to knowledge through collaborative work focused on mutual exchange, and continuous learning.

In this environment, the academic community can create, share and update knowledge with a flexible access, using many-to-many communication and continuous discussion. Academia also has the possibility to search in all types of knowledge, to locate all relevant knowledge and to write comments about knowledge with an easy access and visualization of all relevant changes

4. Conclusions

Knowledge management is a new field, and experiments are just beginning in higher education. This study has investigated the introduction of knowledge management into higher education and based on a survey conducted in Romanian higher education,

holding forth collaboration technology as a possible solution for knowledge management system in higher education.

Using collaboration technologies, a knowledge management environment can be developed for a more targeted and effective knowledge creation, sharing and transfer in higher education.

The main benefits of a knowledge management environment are represented by greater opportunities for collaboration and sharing knowledge; improved ability to access relevant knowledge when and where it is needed; and transformation of tacit knowledge into explicit knowledge.

This study should be considered as an exploratory approach, which provides a perspective of knowledge management in higher education. The development of a knowledge management environment needs to be viewed as a holistic process and beside the technology, the cultural perspective, organizational structures or social trends must also be considered. What organizational structure and culture are needed for the adequate utilization of the knowledge management by members of the higher education organizations, to achieve desired strategic mission and goals of the organization, are important questions for future researches.

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