

KNOWLEDGE MANAGEMENT – CAPTURING, DISTRIBUTING AND EFFECTIVELY USE OF KNOWLEDGE IN UNIVERSITIES

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Abstract. *Knowledge Management (KM) is one of the today's hottest subjects. The concept of Knowledge Management was evolved by management philosophers- later it has got great importance because of technological advancement in the field of Information Technology. The paper aims to explain the value of KM for universities, as the most effective management tool supports every Higher Education Institution (HEI) that wants to Build up New knowledge, Sharing of Existing Knowledge and Creating Value from knowledge. Looking at the role of KM in Higher Education, the paper is presenting the rationales of a research project that will explore how knowledge is produced, shared and stored in HE institution. Cultural differences will be examined, in particular, how they will impact the KM efficiency.*

Keywords: knowledge management, intangible asset, management tool, cultural differences

JEL Classification: D83, M15

1. Introduction

Knowledge Management seems to be a very attractive subject of today, not only because the word Knowledge refers any useful information, which creates value but because managing such a valuable “treasure” makes you powerful, as a person or as an organization. Information is accessible today almost everyone using a computer connected to Internet, mainly due to the huge advancement in the information technologies, and open access policies that start gain terrain in the past recent years.

The Knowledge Management (KM) concept was emerged from management philosophers thinking - later it has got great importance because of technological advancement in the field of Information Technology. Initially, KM refer managing useful information to optimize the results thus it is important to examine how Knowledge Management as Intangible Assets (invisible) can create value for an organization. Later one, Knowledge Management has brought out new dimensions like Management Information System (MIS), Artificial Intelligence (AI), Reengineering, Group Ware, Interactive IT Web Pages - E-

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Business, E-Commerce, On-line Transactions, Intellectual Capital. Nevertheless, the research is still at the beginning in examining these dimensions, it is room for further development or in-depth analysis.

Over the last decade, the importance of knowledge has been highlighted by both academics and practitioners [1]. Today, knowledge is recognized as being a vital asset in any organization because it exists in a highly interconnected world where knowledge is seen as an essential element of successful societies.

The general purpose of Knowledge Management is to make knowledge usable for more than one individual, e.g. for an organization as a whole which means to share it. New knowledge-based views on organizations suggest that it is knowledge that holds organizations together [2]. Other change influencing knowledge acquisition and sharing is the steadily increasing speed with which new technologies are evolving.

The word **knowledge** is used as an overall term, without making a further difference between wisdom, intelligence, creativity etc. Another common expression for knowledge is "information in action", i.e. information applied for a purpose. Or, like Albert Einstein expressed it: "Knowledge is experience. Everything else is just information." [3].

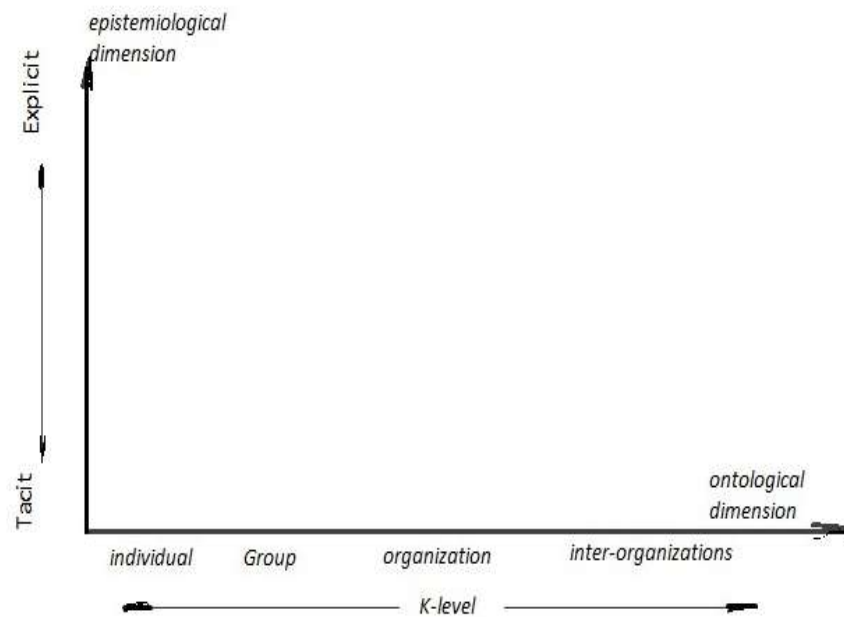
Looking in-depth, knowledge is a complex concept, scholars have analyzed the difference between tacit and explicit knowledge. Tacit knowledge is knowledge in the human mind and it is difficult to externalize or mediate. Explicit knowledge is formalized knowledge, i.e. knowledge recorded as video, in a document, etc. and usually covers part of the original tacit knowledge but is not a full representation of it [4]. Implicit knowledge can be transferred throughout any direct face-to-face communication between people or by transmuting it into explicit knowledge and sharing the according artifact. The transformation back to tacit knowledge takes place during the reading and understanding of explicit knowledge. Figure 1 tries to offer a sketch of the knowledge diversity.

Tacit knowledge inhabits the minds of people and is (depending on one's interpretation of Polanyi's [5] either impossible, or difficult, to articulate. Most knowledge is initially tacit in nature; it is laboriously developed over a long period of time through trial and error, and it is underutilized because "the organization does not know what it knows" [6].

To bring tacit knowledge into light and understand it is difficult, but people use metaphors for a better conceptualization of a phenomena or to create abstract concept [7], and a lot that is going on in our minds that we' are not aware of [8] and that why is a real need for "*new techniques: to get at hidden knowledge-to get at what people don't know they know.*" says Gerald Zaltman and starting from this he elaborated a new marketing research techniques- ZMET, patented in USA in

1995. Gerard Zaltman comments "A lot goes on in our minds that we're not aware of. Most of what influences what we say and do occurs below the level of awareness." [8]

Fig. 1 Knowledge dimensions



(Source: Nonaka & Takeuchi 1995)

Knowledge can have various dimensions; each level deserved a special attention when it comes about analyzing the knowledge production and transfer. Usually, knowledge transfers take place by human interaction through communication means or the transfer is mediated by technical systems, computers being the most used nowadays.

In a globalized world, access to information is considered vital, individual knowledge once generated is integrated in the organization's system and become available, more or less to other organizations or free to use to any particular interested entity. Having access to such a huge amount of data, people need to create their own system of classification, selection, processing in order to define the appropriate shape of knowledge that responds to their specific needs.

Although, Knowledge Management is not a well-known concept, people understood differently their role in the Knowledge Management process and what benefits it will bring to them or to their organization. Moreover, the majority of Knowledge Management activities have other purposes besides acquiring and sharing knowledge, so that it is difficult to find a clear and exhaustive definition.

To fully understand KM can be really difficult due to its nature and complexity. While knowledge itself is something intangible, KM has to cover various aspects such as:

- How people work together? – that means to explore the *sociological* dimension;
- How people react to specific situations and changes in the environment? – it suppose to understand *psychological* drivers;
- What are the technical tools that can be used to assist the creation and transfer of knowledge? – Which brings new perspective on the current *progress of the information technology*.

Exploring KM, from practical point of view, bring into discussion different dimensions to be considered at operational level. Implementing KM in organizations is necessary; there is a real need to access, share and exchange knowledge, to ensure that the goals of organizations are achieved.

2. Knowledge Management - a complex concept

For inserting an equation in any position, select the entire row with an existing equation, COPY & PASTE in the desired position, SELECT & DELETE the old equation, INSERT the new one, then press simultaneously CTRL and A keys (=SELECT ALL), finally press F9 key.

Knowledge management can be defined as any systematic activity related to the capture and sharing of knowledge by the organization. This definition was suggested by Statistics Canada, which is conducting an annual survey on knowledge management practices in organizations. Also, this definition is also used by OECD - Centre of KM, on their survey across organization from European and non- European countries. This definition does not contain any explicit references to the transfer, creation, maintenance or utilization of knowledge.

According to the above definition of knowledge, KM is the overall task of managing the processes of knowledge creation, storage and sharing, as well as the related activities. Generally speaking, this has to include the identification of the current state, the determination of needs, and the improvement of affected processes in order to address these needs.

The paper examines the processes taking place inside Romanian Universities aiming to develop a representation that is simultaneously both simple and comprehensive enough. Also, the paper looks at knowledge management dimensions in universities such as: knowledge creation, knowledge transfer, different domains and levels of knowledge and knowledge management processes

and how they are organized and with what benefits for individuals and universities as organizations.

Knowledge transfers can take place by means of a technical system or can be performed by human interaction. It will be explored how these transfers occur in universities, which is more important: the human interaction or the technical systems handling information inside/outside universities.

When it comes about *knowledge levels*, in an organization, one can identify two categories: internal and external knowledge. Also, knowledge levels can be differentiated according to the holder: individual, group, and organizational levels. Contrary to individual knowledge, group knowledge is the combined knowledge of e.g. a team, being more than the sum of the knowledge of all team-members, because the variety of knowledge contributed by the different members results in new knowledge [2].

Because human minds can be assumed to have knowledge about many things, another problem is how to locate knowledge, i.e. find out who has knowledge about what. This is not always a problem when dealing with a small number of people. But crossing the border somewhere between 200 and 300 people [9], it becomes impossible for everyone to know who knows what. There is the case of universities, where number of academic staff is significant and besides that the technical and administrative staff should be integrated too in the KM system.

Finally, the big problem to be solved is: who needs what knowledge, and when.

Additionally to the nature of knowledge, KM is also difficult due to the nature of people [9]. This is especially problematic, because the possibilities to influence people are limited and difficult; while on the other hand people's decisions heavily depend on their personal attitudes [10] Knowledge is part of what makes a person's personality. Passing one's knowledge to others also means enabling others to perform according tasks, thus making the originator more easily replaceable [9].

Despite the fact that this is positive and desired from the organizations' point of view, people often tend to keep their knowledge for themselves because they fear that they would not be needed anymore after passing their knowledge to others [11]. From psychological perspective, without motivation and a supporting environment, people tend not to share their knowledge. And even if people know about the necessity to share their knowledge with colleagues, they need a certain amount of trust to do so [9]. "Why should I tell others what I know? Shall they go and find out for themselves, as I had to do!" [11].

This leads to the idea behind KM, which is to turn an organization into a learning organization. This means [12]:

- Continuous learning of individuals and integration of knowledge to organizational routines and actions;
- Effective knowledge generation and sharing among the people in the organization and eventually also outside the organization (it may be embodied in products or services);
- Critical, systemic thinking allowing the questioning of established procedures;
- A culture of learning, where new ideas are honored and rewarded;
- A spirit of flexibility and experimentation including the possibility to take risks in order to innovate, and a people-centered environment, that cares about the development and wellbeing of people.

The main goal for an organization is to move FROM individual knowledge TO organizational knowledge, which in some organization culture is hard to be achieved. Cultural differences are shaping the knowledge creation and sharing, Western and Eastern cultures are having different perceptions in term of knowledge. For Western culture is characteristic the old dyad: explicit knowledge – tacit knowledge, while for the Eastern cultures is characteristic the new, emerging dyad: cognitive knowledge – emotional knowledge [13]. One can find interesting to explore, for example, the differences in the university' cultures and how they affect the knowledge creation and sharing.

3. Knowledge Management practices in universities

Higher Education is important for the society and universities and their research units supposed to produce knowledge for society, economy and be able to generate wellbeing. Universities should play an active role in generating future knowledge, in providing consistent knowledge streams able to sustain economic growth and social welfare.

Higher Education (HE) is seen as one of the key drivers of social well-being and economic performance in the knowledge economy [14]. One of the documents regarding the Bologna Process highlight that the main goal of HE for 2020 is to ensure the „*maximization of talent*” by looking at what they term the „social dimension” of Higher Education [15]. At the same time providing Higher Education in such a way that all people can really benefit from it is a way of ensuring the effectiveness and relevance of higher education.

A decade ago, educational researchers identified several key drivers of change as being key shapers of university transformation: globalism, multiculturalism,

virtualization and politicization [16]. Higher Education (HE) will face not only the globalization, or the changing view of quality in HE and social inclusion, but also *new way of thinking and systems of knowledge* which will generate the shift from global knowledge economy to global knowledge futures [17].

Is not enough for Higher Education futures to be primarily focused on external „trends” such as globalization, thus overlooking the major paradigm shifts rocking the foundation of knowledge for the last half-century, „*megatrends of the mind*” are as important for higher education futures as the megatrends in the external world [18].

At the close of the first decade of the twenty-first century, some of the most creative, innovative and dynamic knowledge around the globe is being produced and disseminated outside mainstream universities. Nowadays, „knowledge production”, „knowledge transfer” and „knowledge dissemination” have become core commodities of the increase competitive global knowledge market economy. How will universities and their research centers keep up? The answer should be carefully looked for, first by examining current practices inside universities and then building new strategies to integrate knowledge produced in universities into the global flow of knowledge with major benefits to universities.

Drucker [19] establishes the concept “knowledge society” and argues that in the future, knowledge will represent the primary resource for individuals and for the economy overall. Universities play a significant role in creating, sharing, transfer and application of knowledge in economy and society. In this context, it is a need to develop a framework [20] for analysis of a supporting role of an information system with KM, which should comprise four set of knowledge processes: *Knowledge creation, Knowledge sharing, Knowledge transfer, Knowledge application*.

Knowledge-based organizations seem to have the most to gain through knowledge management, *but to be effective in KM may require a significant change in culture and values, organizational structures and reward systems*. These changes are not easy to be implemented in universities; conservative organizations may be reluctant in accepting them.

Academic staff works, according to the traditional view, within the same framework and shares the same values. Still in universities, the knowledge creation and sharing is affected by the lack of trust and an appropriate communication. The typical culture in colleges and universities is not one that rewards the sharing of ideas and wisdom [21].

Universities have traditionally had two main roles: creating knowledge, and disseminating knowledge [22]. Research has been the main vehicle for creating knowledge and teaching has been the one for disseminating knowledge. In today’s

rapidly-changing economic environment, the traditional role of universities as providers of knowledge is greatly challenged. KM is able to create an innovative relationship between work and education, help students to more closely match their talents with the current workplace demands, contribute to the adaptation and assimilation of new knowledge with the existing one, and contribute to the re-connection of learning with experience.

Lugkana Worasinchai et al. [23] suggest developing a generic Knowledge Management framework specifically adapted for higher education. Today, there are a significant teaching and learning material at the campus and this unveiled the need to introduce methods and technologies on how to acquire, store, organize, disseminate, search, index data. Baran examines the relationship among other three important topics: teachers' professional development, knowledge management and online communities of practice [24]. A community of practice¹ can provide both implicit and explicit knowledge sharing opportunities among teachers.

More [25] suggests that knowledge should be seen as a fluid mix of framed experience, values, contextual information and expert insight that provides a framework for evaluating and incorporating new experience and information. Knowledge management is a new field, and experiments are just beginning in higher education. Knowledge management has been about breaking down barriers within the organization, and e-business has been about breaking down barriers between the organization and its customers.

4. Knowledge Management in Universities – Research design and methodology

The need of a consistent research on *KM practices* in universities becomes more evident, as much as the current changes of the educational environment demand the universities' competitiveness enhancement.

Teaching and Research represents the core activities in universities, each of them being involved in knowledge capture, creation, sharing, application and re-use. Thus, getting insides on how knowledge flow in universities is managed means to explore the specificities of teaching and research in term o knowledge management.

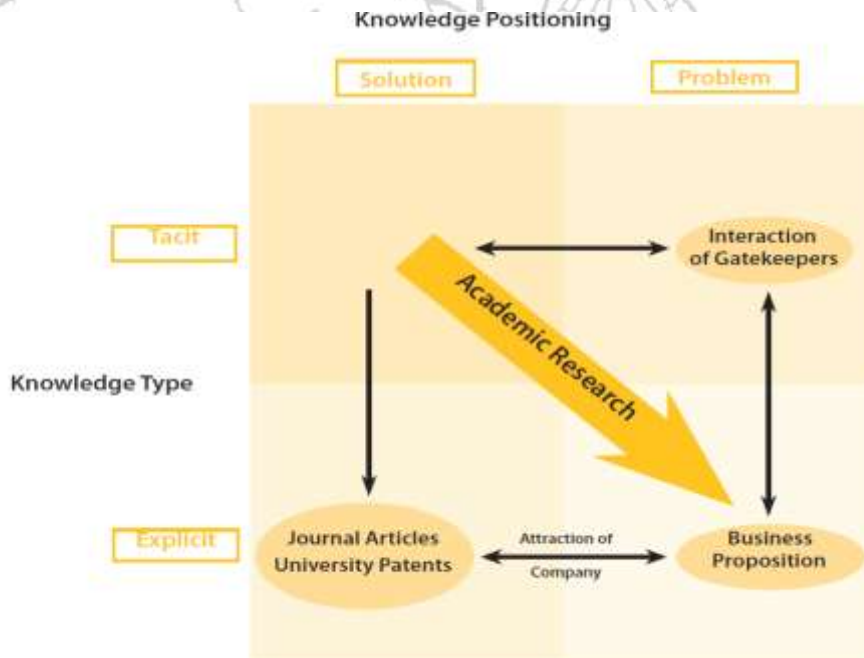
¹ <http://www.community-of-knowledge.de/beitrag/knowledge-management-practices-in-a-successful-research-and-development-organization/>

Knowledge creation, acquisition, sharing and transformation are key processes in universities for generating a high level of intellectual capital potential [26]. Thus, getting a deeper insight on the current practices existing is important in managing these processes and may generate new strategic initiatives in supporting the future development of the university. Knowledge is a strategic resource and intellectual capital a driving force for performance, but it is the role of the academic management, leadership and organizational culture to act as nonlinear integrators [27], [28] to transform efficiently the potential of intellectual capital into a high level of operational intellectual capital.

In order to formulate adequate research questions and to be able to select the appropriate research methods and techniques, we started with defining the conceptual framework, develop the research methodology, and design the pilot research.

Also, the research takes shape as a result of a wider consultation on the topic of organizational culture and access to knowledge, arose from the new initiative of EU - Directorate-General for Research and Innovation, namely Open Science Policy Platform. As nominated member of the High Level Advisory Group, the paper's author will have the opportunity to promote policy recommendations coming up from this research endeavor.

Fig. 2 Knowledge types and positions in Higher Education Institutions



(Source: [29])

At a recent event¹, Carlos Moedas - Commissioner for Research, Science and Innovation stated: “... *open access increases the value of public investment in science. But, more than that, it also contributes to scientific excellence and integrity by: opening up research results to wider analysis, allowing research results to be reused for new discoveries, and enabling the kind of multi-disciplinary research that is increasingly needed to solve global problems in the 21st century*” . In this respect, universities are involved, in a great extent, in knowledge creation, transfer and sharing suitable to be considered of public/social interest, each university upon her own specific mission and public responsibility.

This research project is designed as a multistage approach, each stage being evaluated at the end looking at the collected data and the future benefits and the results will determine the adjustments of the next stage accordingly.

Stage 1. Setting up the research framework (A = activity)

A1.1. Building blocks of theory – tacit and explicit knowledge,

A1.2. Epistemological and ontological positioning

A1.4. Developing the research methodology and selecting the methods and techniques

The stage 1 ended late May this year, and the best choice emerged from the in-deep desk research is the usage of a mix of quantitative and qualitative methods as follows:

- A survey will be conducted among academic and non-academic staff involved in the knowledge cycle;
- A set of semi-structured interviews of key factors involved in knowledge management activities will be organized.

Stage 2 Setting up the research questions

A2.1. Research questions:

- (1) What is the perception of KM among the academic staff?
- (2) What internal and external conditions facilitate knowledge creation in organizations?
- (3) Do certain organizational cultures foster knowledge creation; if so, what types?
- (4) What individual incentives effectively encourage knowledge sharing in organizations?

¹ Share and Succeed - Open Science Conference, 4th April 2016, Amsterdam, http://europa.eu/rapid/press-release_SPEECH-16-1225_en.htm

- (5) How knowledge transfers occur? What are the main barriers affecting the knowledge transfer process?
- (6) How do individuals develop trust in knowledge capture, creation and use?
- (7) What is the current situation of the knowledge access in Romanian HE institutions?
- (8) What is the level of awareness on the Open Science Access Initiative?
- (9) How does increasing either the volume or depth of available knowledge affect HEI performance? Evaluation of research results should be qualitative instead quantitative?

A2.2. Making the research questions operational

- Define the variables
- Group the variables in categories
- Select the appropriate measurement scale for each variable

Stage 3 The Quantitative approach- online survey

- A3.1. Questionnaire design*
- A3.2. Sampling*
- A3.3. Data collection*
- A3.4. Data analysis*
- A3.5. Survey' report*

Stage 4 Qualitative approach – a relevant series of semi-structured interviews

Stage 5 Results analysis and interpretation

Stage 6 Research outcomes evaluation

Stage 7 Going from national to international level– a comparative study

The main purpose of doing an international survey, however, is to understand the differences and similarities of the KM process taking place in universities.

Stage 8 Policy recommendations via paper' author participation in Open Science Policy Platform

At the moment, the research development reach the stage 2, at a slowdown trend occur basically due to the difficulties in getting funded.

Conclusions

The paper established that knowledge creation, acquisition, sharing and transformation are key processes in universities for generating a high level of intellectual capital potential. Academic community is engaged in shaping the HEI organizational culture, and the communication inside of this community is

important for all kind of collaborative work. A deeper understanding of knowledge dynamics is needed and the planned research project gain support not only at national level, but also at international level.

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