ABSTRACT
Living or trying to in a knowledge based economy, puts a major accent on the ability to capture and to manage the tacit knowledge, which has always been a challenge for organizations. In the last decade, tacit knowledge has become a very popular concept and has given rise to extensive literature. Making use of tacit knowledge should be the central activity of the knowledge organization, because valuing this knowledge can represent an important source of competitive advantage. Higher education organizations are the main knowledge intensive organizations. The existing research is focus on examining how companies make use of tacit knowledge, in order to identify elements that can be applied in education field. Based on a literature review, this study aims to provide a revisiting management method of tacit knowledge into a higher education institution. It will also try to determine the obstacles faced in sharing of tacit knowledge and make some recommendations.

KEYWORDS: knowledge management, knowledge transfer, tacit knowledge, higher education

JEL CLASSIFICATION: J59

1. INTRODUCTION

Knowledge plays the key role in the current social and economic conditions. People have always shared their accumulated knowledge by telling stories about their thoughts, work and experiences (Smith, 2001). As Hansen et al. argued, people use face-to-face and ”hands-on” methods to convey their ”know how” or tacit knowledge to others (as cited in Smith, 2001). The tacit dimension of knowledge has come to light as a debatable issue, due to its important role in the organizations’ battle for obtaining competitive advantage. Therefore, it is essential that tacit knowledge be transferable among a company’s employees. In today’s global economy, school is the main supplier of competent workforce and it has to face challenges related to education of knowledgeable and skillful students. Educational institutions are knowledge intensive organizations. Thus, they have to obtain, store, share, utilize, and generate knowledge so as to train and educate the students effectively (Ozmen, 2010). In general the vast array of literature outlines that the educational organizations are yet to be able to embrace knowledge management and are not yet conscious about the crucial importance of tacit knowledge. The purpose of this paper is to examine how companies are using tacit knowledge in order to create a model of their use with applications in academics. Therefore, the authors analyzed the existing published material on knowledge management and tacit knowledge, with special focus on tacit

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knowledge transfer, its techniques, barriers and relevant success factors. The paper is organized as follows: First, it provides literature review on tacit knowledge management with special focus on existing sharing techniques and models. Then the authors try to determine the current situation of higher education organizations in making use of their tacit knowledge in general. Based on this analysis made, the authors will propose a strategy that can be use for managing the tacit knowledge in the academics, and in the lights of implemented strategies and practices, the authors will make some recommendations for its better utilization. In the end, they will present an outlook on further research opportunities and some conclusions.

2. TACIT KNOWLEDGE: LITERATURE REVIEW

In today’s increasingly turbulent economy, knowledge is widely considered as the most important organizational resource and is therefore critical for the long term sustainable competitive advantage and success of any organization (Alavi & Leidner, 2001; Davenport, Long, & Beers, 1998; Drucker, 1993; Nonaka & Takeuchi, 1995, as cited by Khuazmainh and Hassan 2012). Unlike traditional assets, knowledge belongs to the family of steadily increasing corporate assets, like management systems, brand identity, customer information, corporate reputation (Pascarella, 1997) and as an intangible resource will continue to appreciate in value with use (Davenport et al., 1998). However, despite extensive discussions of concepts such as 'knowledge management', 'intellectual capital' and related ones like 'organizational learning' and 'organizational memory', there appears to be a lack of conceptual clarity in the writings of many of the researchers and practicing managers on their specific meanings (Davis et al., 2005).

One of the definitions that can be valued at a glance is the one given by Davenport (1998) that says knowledge can be viewed as a set of experiences, values, skills and information in regard to the expert’s viewpoints which can provide a framework for combination and evaluation and new experiences. In a paper written one year later Davenport believes that knowledge management has to different axis. One – to facilitate the creation of new knowledge, two – management of the way the people perceive, share and apply it.

According to Probst et al. (2000) knowledge management is a systematic process comprises a range of strategies and practices used in an organization to identify, create, organize storage, represent, distribute, and enable adoption of knowledge.

As Polanyi (1966) admits, knowledge can be identify and recognize in two major types: explicit and tacit. Starting from this theory, Nonaka and Takeuchi (1995) defined those concepts in an organizational environment. In their acceptance, explicit knowledge refers to knowledge that can be translated into formal, systematic language. On the other hand, tacit knowledge has a personalized quality that makes it hard to formalize.

Tacit and explicit knowledge are complementary: explicit knowledge without tacit insight quickly loses its meaning (Hernandez Sanchez et al., 2012). Knowledge is created through interactions between tacit and explicit knowledge and not from either tacit or explicit knowledge alone (Nonaka, 2000, as cited by Sanchez et al., 2012).

Tacit knowledge can include: the intellectual property of an individual or organization as well as organizational culture, project experiences, task heuristics and human competencies that are not easily externalized (Vasconcelos et al., 2000). People who have technical tacit knowledge are considered unconsciously skilled. They know something so well that they are unaware of what they need to do to be successful.

Tacit knowledge is grouped according to content, context and orientation. Depending on the person and the situation, one or more types of tacit knowledge may be used in different contexts and orientations.

According to Nicolescu and Nicolescu (2011), analysis made by specialists took under the account the existence of numerous categories of knowledge with partially heterogeneous characteristics and with different role within economic, managerial, educational processes.
Thus, according to Jones (as cited in Nicolescu and Nicolescu, 2011, p. 24) knowledge divides in two categories, in regard to content:

- **Knowledge about something** – the essential in order to understand a phenomenon, event or process;
- **Knowledge about how to execute something or know how**, indispensible in order to produce and monetize profitable services and equipments.

In a more recent classification, made by Shereby and Kornowski knowledge divides in three categories: individual, structural and organizational (as cited in Nicolescu and Nicolescu, 2011, p. 24). Individual knowledge is practical tacit knowledge.

Within a more complex approach that partially incorporates above mentioned elements, knowledge can be divided in four categories (OECD, 1996):

- **Know-what** refers to knowledge about “facts”, especially things that we can actually call information. In this axis knowledge can be dismantled to the fullest extent. The experts must have a big quantity of this knowledge in order to fulfill their job. (E.g. doctors and lawyers belong to this category).
- **Know-why** refers to scientific knowledge of the principles and laws of nature. In this axis knowledge is the core ingredient that underlies technological development and product and process advances in most industries. There are special units such as research laboratories and universities within different sectors that serve the production and reproduction of know-why. In order to get access to this kind of knowledge, companies must interact with these organizations either through recruiting scientifically-trained labor or directly through contacts and joint activities. In general there are partnerships between Universities and companies. Dedicated Master programs that have the curricula developed in order to meet the company’s needs.
- **Know-how** refers to skills or the capability to get the things done. Business environment relies on the individual knowledge to make the right decision, for example a personnel manager selecting and training staff has to use his know-how, HR representatives will use this type on knowledge in order to pick the right employee out of a pool of candidates. The same is true for the skilled worker operating complicated machine tools. Know-how is typically a kind of knowledge developed and kept within the border of an individual firm. There is some logic behind all the seminars where more than one company comes and share elements of Know-how with the others.
- **Know-who** involves information about who knows what and who knows how to do what. The “weight” of this axis involves the formation of special social relationships which make it possible to get access to expert of this and use their knowledge efficiently. It is significant in economies where skills are widely dispersed because of a highly developed division of labor among organizations and experts. For the modern manager and organization, it is important to use this kind of knowledge in response to the acceleration in the rate of change. The “know-who” kind of knowledge is internal to the organization to a higher degree than any other kind of knowledge.

According to Nonaka and Takeuchi, there are four ways of knowledge conversion between tacit and explicit knowledge:

1. Socialization: in general, tacit knowledge is converted into tacit knowledge during discussions, meetings and one-on-one sessions.
2. Externalization: in general, tacit knowledge is converted into explicit Knowledge and outlined in documents, manuals, seminars, dedicated literature etc.
3. Combination: in general, explicit knowledge is converted into another form of explicit knowledge
4. Internalization: in general, explicit knowledge is converted into tacit knowledge by individuals.
There is a change in the linear paradigm; there is no beginning and no end to these four ways of knowledge conversion. There is a sort of a spiral that links them in a chain. This continuous and dynamic process is rooted in people's behavior, the main agents that create knowledge (Sanchez et al., 2012). For example, when people try to combine explicit knowledge (this happens, for example, when someone uses mathematical formulas and physics to solve a complicated problem) they can at the same time, to discuss with their colleagues as exchanging tacit knowledge with them. Think tanks were created on the same principle. Exchanging ideas or even bits of ideas can add up to finding the result. Thus, dialog can bring the solution based on exchanging tacit knowledge. Or, they can visit different forums to find solutions; the forum will have to outsource or to explain the problem, seeking help.

Nonaka considers a model consisting of five phases for the creation of organizational knowledge (Sanchez et al., 2012). The five phases are:

1. Sharing tacit knowledge: dialog through socialization.
2. Creating concepts: knowledge shared is converted into explicit knowledge by constructing new concepts.
3. Proof of concept: the justification for new concepts allows the organization deciding whether continued.
4. Building a model: the concept is transformed into a model, prototype or operational mechanism.
5. Dissemination of knowledge: at this stage, the knowledge created is spread throughout the company.

The trend is, in the new economy, that organizations become more service and innovation oriented. Thus, tacit knowledge becomes high commodity that has an increased and important task - to meet emerging environmental trends. And sharing tacit knowledge between workers is more crucial with today’s mobile work force; with worker turnover, organizational memory is lost unless knowledge is dispersed among multiple workers (as cited in Mayfield, 2010). One step forward in this direction, as requisite employee skill sets transform to technology transfer and custom service, effective tacit knowledge sharing promises competitive advantage at all organizational levels.

**Techniques for increasing worker tacit knowledge sharing**

Although general practice seems to be somewhat intricate, in this section are presented some of the more useful and easy to implement methods, adapted from Mayfield (2010). The methods can be implemented separately, but they reinforcing together and more effective when introduced jointly as
part of a knowledge management strategy.

**Wikis** – are web based software tools where people can post information and edit each other’s entries. (The best known wiki is the Wikipedia.) In this way, knowledge is disseminated and expanded through a collaborative effort.

**Mentoring programs** - offer more individually tailored knowledge sharing, and allow senior workers to directly transmit their experience. Mentoring often occurs informally in organizations, but can be more effective when systematized: providing a more equitable dispersion of mentoring opportunities and allowing organizational guidance in the information exchange process. Also important, these same efforts can be augmented to embrace succession planning. Formalized mentoring also facilitates cross-unit mentoring, thus augmenting worker skill sets. However, the prerequisite for all successful mentor programs includes participation rewards and support for the worker and mentor.

**Reward programs**

Similarly, targeted rewards are the most powerful means to increase worker tacit knowledge sharing. Behavior is shaped by rewards, and tacit knowledge sharing will respond accordingly. Beyond explicit motivation, rewards signal management’s commitment to tacit knowledge sharing, and thus help shape an organization’s cultural lens. These rewards should be well-communicated, relevant, attainable, and integrated to reflect a cohesive knowledge management strategy.

The methods we are presenting here are generally used to promote, acquire and teach tacit knowledge. Methods may be used individually or combined to help develop and explain new situations and re-evaluate and recalibrate old situations (Wagner and Sternberg, 1987):

- **Selective encoding.** General practice has to pick and choose the most important, genuine or needed information from the business environment, for example the use of particularities in the report that has to be presented to clients.

- **Selective combination.** In general, particular and specific knowledge and information have to be combined in such a manner that will bring the relevant factors in the business limelight. Specific patterns are created and the art of putting them together in order to complete a whole has to be shown.

- **Selective comparison.** Outlining the similarities and the differences between past and future business endeavors. Past, present and future facts. The bottom line is to match face to face old knowledge with present knowledge and thus new knowledge is to be created.

Joia and Lemos (2010) identified some indicators associated with the transfer of tacit knowledge, as follows:

- **Individual management of time.** Primarily, the sharing of tacit knowledge requires time for contacts and personal interactions (Leonard and Sensiper, 1998; Roberts, 2000, as cited in Joia and Lemon, 2010, pp. 413). Consequently, the first indicator associated with tacit knowledge transfer seeks to show whether or not people have enough time to share tacit knowledge within the organization.

- **Common language.** For knowledge transfer to take place, a prerequisite is that there is a common language, in other words, the terminology and the jargon used are familiar by both (Davenport and Prusak, 2003; Disterer, 2003; Haldin-Herrgard, 2000, as cited in Joia and Lemos, 2010, pp. 413). Besides this, the greater the experience the more tacit this acquired knowledge becomes, which increases the difficulty of putting it into words (Haldin-Herrgard, 2000, as cited in Joia and Lemos, 2010, pp. 413). Thus, the aim of this indicator is to make sure that people in the organization have the ability to express the tacit knowledge they possess through a common language.

- **Mutual trust.** In order for the transfer of tacit knowledge to be successful within an organisation, it is of paramount importance that a relationship of trust prevail between the individuals, which must be developed within the social and cultural context in which they find themselves (Joia, 2006; Foos et
The establishment of a trusting relationship depends on the sharing of a series of social and cultural values and of expectations. Thus, the goal of the third indicator is to check the existence of a relationship of trust among individuals that facilitates tacit knowledge transfer within the organization.

- **Relationship network.**

According to Davenport and Prusak (2003), another of the reasons for the increasing interest in knowledge in recent years is the difficulty encountered by organizations in discovering the whereabouts of the knowledge they need in order to be able to use it (as cited in Joia & Lemos, 2010, pp. 413). Thus, the form of communication within the company depends on the internal relationship network. Hence, this indicator aims to find out if it is possible to identify the people in the organization that have the knowledge that is needed, as well as those that need such knowledge.

- **Hierarchy.**

Environments that involve formal structures and command and control systems clearly limit what individuals can or cannot do, create barriers that affect the time available, flexibility and complexity required for tacit knowledge transfer (Fahey & Prusak, 1998; Sun & Scott, 2005; Szulanski, 1996, as cited in Joia & Lemos, 2010, pp. 413). Hierarchical and bureaucratic organizational structures, as well as the politics accompanying hierarchies, hinder communication, the sharing of information and consequently the transference of knowledge (Disterer, 2003; Collison & Parcell, 2004, as cited in Joia and Lemos, 2010, pp. 413). As Fahey and Prusak (1998) admit, for tacit knowledge transfer to take place, people must be accessible when their knowledge is required, irrespective of their hierarchical position in the organization (as cited in Joia and Lemos, 2010, pp. 413). Therefore, the accessibility, in an organization, of people who possess tacit knowledge notwithstanding their hierarchical position, can be a pertinent indicator for tacit knowledge transfer.

- **Reward.**

In order to encourage people to share their knowledge, they need to be adequately rewarded (Disterer, 2003; Szulanski, 1996, as cited in Joia and Lemos, 2010, pp. 413). Davenport and Prusak maintain that: to establish a consistent culture of knowledge sharing, the use of financial incentives such as substantial gratuities, wage increases, promotion and so forth are necessary (as cited in Joia and Lemos, 2010, pp. 413). Thus, this indicator also proposed by Joia and Lemos (2010) is one that establishes if the organization rewards tacit knowledge transfer among its members.

- **Type of training.**

The influx of new employees, the transfer of employees between areas and the promotion of employees demand appropriate training, as early as possible, such that these employees become familiarized with their new activities. Training is, therefore, a strategic activity and can be conducted in different ways. The type of training applied indicates the propensity of the company towards prioritizing the dissemination of tacit knowledge. Formal training, with classes and presentations, facilitates the exchange of explicit knowledge (Nonaka and Takeuchi, 1997; Murray and Peyrefitte, 2007, as cited in Joia and Lemos, 2010, pp. 414). More tailored strategies, based on personal contacts and which demand more time, such as coaching and mentoring, are more appropriate for the transmission of tacit knowledge (Disterer, 2003; Leonard and Sensiper, 1998, as cited in Joia and Lemos, 2010, pp. 414). In these types of training, the more experienced employees are encouraged to transfer their knowledge to the newer employees.

- **Knowledge transference.**

Corporate Governance business practice in regard to the transfer of knowledge must be focused on people or using the basics of codified knowledge (Hansen et al., 1999). This type of strategy emphasizes that knowledge has to be stored in a database to which all those within the organization have access whenever they would like to use it (Hansen et al., 1999). In order to adopt this strategy it is important to be able to rely on technical support for the storage and transference of knowledge, although it should be stressed that technology does not work without the involvement of people (Joia, 2007, O’Dell and Grayson, 1998, as cited in Joia and Lemos, 2010, pp. 415). Thus, a lot of
managers proposed that a tacit knowledge transfer indicator should be created in order to check if knowledge transfer in the company occurs mainly through the interaction of people.

- **Knowledge storage.**

When the drive of the companies is toward changing the paradigm from knowledge management to explicit knowledge, the focus is on the knowledge stored in a database available to all those in the organization (Hansen et al., 1999). This strategy, which is mainly centered on information technology, requires a high investment in database systems. Besides this, under these circumstances the company also prioritizes knowledge contained in manuals and operational procedures (Joia, 2007). However, investments in information technology are not really appropriate for the personalized strategy, since tacit knowledge is seldom open to codification. Therefore, an important indicator for tacit knowledge transfer that seeks to check if the organizational knowledge is effectively stored in people.

- **Power.**

The axiom “knowledge is power” is well-known, especially in contemporary society where knowledge is a valuable asset on the work market and it often leads to situations where people who have rare or relevant knowledge enjoy a privileged reputation among their colleagues (Davenport & Prusak, 2003; Haldin-Herrgard, 2000). Thus, the possibility of loss of power also influences tacit knowledge transfer, considering that knowledge is an important asset in the workplace (Haldin-Herrgard, 2000; Leonard & Sensiper, 1998; Sun & Scott, 2005). One of the biggest mistakes in corporate governance strategy is that some people believe that they have more to gain by being gatekeepers of the knowledge and sharing it comes along with fear and reluctance (Davenport & Prusak, 2003). However, knowledge only has value if it is shared in order to be used. Thus, another indicator to measure tacit knowledge transfer is created, which analyses knowledge as a source of power within the organization.

### 3. TACIT KNOWLEDGE MANAGEMENT IN HIGHER EDUCATION FIELD

Effective knowledge management is seen vital in higher education as it is in the corporate sector. It can lead to better decision-making capabilities, reduced “product” development cycle time (for example, curriculum development and research), improved academic and administrative services, and reduced cost (Ozmen, 2010). Capturing the tacit knowledge in the individuals and make it widely and easily available to the faculty members and other constituent bears great importance. The ability to manage tacit knowledge promises to deliver huge returns for organizations (Kidwell et al., 2000, as cited in Ozmen, 2010, pp. 1862).

Higher education institutions are the paramount organizations for holding, sharing, and creating knowledge as their most tasks are related to R-D activities (Ozmen, 2010). Norris et al. (2003), point out that few colleges and universities feel need to use their knowledge assets to achieve strategic differentiation (as cited in Ozmen, 2010, pp. 1862). And the knowledge generated by research activities often stays within a laboratory or research team and rarely crosses disciplinary boundaries. Kumar (2005) also draws attention to the impact of today’s fast-paced economy on the higher learning institutions for achieving rapid advancement and new areas of knowledge. He also emphasizes the societal needs which have urged higher learning institutions to get ready for an immense increase in the demand for educational services (as cited in Ozmen, 2010, pp. 1861).

Establishing an organizational culture that enhances organizational learning is seen crucial for achieving effectiveness of educational institutions. The challenge for providing sustainable improvement and efficacy is to capture the tacit knowledge in the individuals and make it widely and easily available to any faculty member, staff person, or other constituent (Kidwell et al., 2000, as cited in Ozmen, 2010, pp. 1862).

Starting from the fact that the value of knowledge is increased when it has a key purpose and focuses on mission, core values and strategic priorities (Smith, 2001), the authors propose a plan, which can be applied in faculties in order to use and manage tacit knowledge.

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1. Internal initiatives

1.1. Building a knowledge sharing culture between all employees (e.g. setting up a structure of "internal knowledge transfer" amongst the employees). Employees must be given the time, space and opportunity to transfer and therefore share tacit knowledge which is transmitted verbally. This culture should focus on solving the most common problems faced by professors, or by higher education system in general:
- Professors have no time for knowledge management;
- The educational system does not encourage knowledge sharing;
- Lack of understanding knowledge management and its benefits;
- Lack of skill in knowledge management techniques;
- Poor designed organizational processes;
- Lack of funding for knowledge management;
- Lack of incentives, rewards
- Lack of initiatives for implementing knowledge management;
- Lack of appropriate technology.

1.2. Capturing and redistributing the tacit knowledge of individuals, by setting up a structure of (inter)actively sharing "tips and tricks" or "best practice". Here it can be used the “Wiki” method presented before. The faculty needs to develop a web based software tool where professors can post information and edit each other’s entries. Gathered information must be practical and re-usable.

2. External Initiatives

2.1. Gaining information and knowledge from students. There are increasingly used in faculties the evaluation forms. An adapted content and a better utilization of these forms could help the faculty in gaining knowledge from students.

2.2. Creating new revenues from existing knowledge by organizing conferences on best practices, or other initiatives that could help in spreading the faculty tacit knowledge within other faculties.

3. Competence Initiatives

3.1. Creating careers based on knowledge (e.g. rewarding best knowledge-sharing employees, create a separate department for knowledge management, including professors that can develop and implement the KM strategy)

As AREOPA specialists affirm (personal communication, March, 2012), in order to implement knowledge management approach in a faculty, for pillars should be taken into consideration: organization, people, technology, culture

1. **Organization**: creation of knowledge management department into the faculty. This action implies:
   - New roles, e.g. Chief of Knowledge Management;
   - Teaching and training to promote use of KM infrastructure.

2. **People**: raise awareness among professors and motivate the transfer and use of knowledge. This means in detail that the whole educational system has to focus on the so called human-related factors like motivation, commitment, hopes and rewards.

3. **Technology**: use support for KM activities, like tools to capture, store, select (retrieval), share, apply, use and re-use knowledge.

4. **Culture**: build up a system of sharing and creating knowledge within the faculty, promote cooperation and knowledge-exchange.

Tacit knowledge management, as briefly detailed above, can entail both "object oriented thinking" and "process oriented thinking". The "object" perspective implies a focus on data storage; tools, document sharing and transfer. Thus, treating tacit knowledge as an object supposes investment in information technology. The "process" perspective implies a focus on collaborative processes and learning dynamics, and therefore involves investments in people.
4. CONCLUSIONS AND RECOMMENDATIONS

Organizations are realizing that intellectual capital or corporate knowledge is a valuable asset that can be managed as effectively as physical assets in order to improve performance. The focus of transfer Tacit Knowledge through knowledge Management is connecting people, processes and technology for the purpose of leveraging corporate knowledge. The tacit knowledge transfer professionals of today are the Knowledge Managers of the future, and they will play an integral role in making these connections possible.

In the nowadays business environment, universities and business environment in general such as the Knowledge Management Network and the development of standards and best practices are in a mature stage of development. KM curricula such as certification, corporate training and university graduate certificate programs are usually custom-made, based on the business environment need. Finally, organizations are investing heavily in ad hoc KM software that facilitates organizational knowledge. We have to close this gap that deters past knowledge to be transformed in future experience. Academic families together with knowledge managers and student body will have to come hand in hand and this way tacit knowledge will be passed from one side to the other and all the historic boundaries will be erased.

Consequently, in today’s fast growing and competitive business and socio-economic environment, the immediate need is for Universities and higher education institutions to make use of tacit knowledge in an effective and efficient way because it becomes more and more evident that it represents the cornerstone of any effort to achieve breakthrough competitive advantage.

Tacit knowledge management which represents the most important issue for bringing change and improvement of the organizations is mandatory for educational institutions, especially for higher educational institutions to base their curricula on effective research and development and to lead the society.

Although the higher education institutions are making progress, we find that some recommendations would help the academic family to reach the next level of enhancing the management of tacit knowledge at educational institutions:

1. The culture of the organization should support the learning and improvement. A strong leadership at schools should be transmitted through the system in order to develop an organizational culture which welcomes organizational learning, think tanks, or other tools where tacit knowledge can be transferred.

2. The proper way of getting together and disseminating knowledge will have to be a priority and will have to be standardized through meetings of any kind: formal or informal, excursions, exhibitions, panels, discussions; and beside them through some others like joint problem-solving, expert-novice cooperation, think-tanks, brainstorming.

3. A strategy and an action plan accompanying to it, should be designed together with the staff, for effective implementation of knowledge management, and in this scope developing the ways of explicating tacit knowledge should be sought. The example that authors presented in this paper could be consider a corner stone for further research in order to testing and improving it.

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