A Literature Review of the field of Knowledge Management Systems

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Abstract
Knowledge Management Systems (KMS) studies, with roots from the information theory, knowledge and knowledge management (KM) has increased during the past years and moved to a broader spread of occupations. Therefore, a need of a literature review on the field of KMS arose and is fulfilled in this article. From selected ample scientific articles in the field some major similarities and controversies as well as research gaps were discovered. Conclusions from the review result in that even if there are some differences in the field regarding knowledge and KM most authors agree on the bases of KMS. Another conclusions result in a connection to the information theory that mainly concern about information exchange and the relevant process, which was first developed by the founder Claude E. Shannon from the thematic school.

Keywords: Knowledge, Knowledge Management, Knowledge Management System, Information Theory, KMS Success Model

1. Introduction

Claude E. Shannon, also known as The father of information theory, presented a mathematical theory of communication (which later on was renamed as theory of information by his followers (Burgin, 2010)), presenting the message sender, transportation transmitter and channel, the receiver transmitter and finally the message receiver (Shannon, 1948), as building a process of information exchange. According to Burgin (2010), information is the key to management, research and development and it is of primary interest in modern business. Any organization can be considered as an information processing engine. Information management then became critically important to organizations since the result of their work depends on information management to a great extent (Burgin, 2010). Nowadays, for all types of organizations to achieve competitive advantage and be innovative, knowledge has been recognized as one of the most critical resources (Chen, Huang & Cheng, 2009). Knowledge even can serve as a key strategic resource, become the foundation of organization competitiveness in the contemporary economy instead of a physical and tangible resource (Wang & Aspinwall, 2005; Chen, Huang & Cheng, 2009). Businesses, which can effectively capture the knowledge embedded in their organisation and deploy it into their operations, production and services will have a competitive advantage over their competitors. The key focus of information systems then has also changed from the management of information to
that of knowledge (Wong & Aspinwall, 2005). Effective Knowledge Management (KM) is therefore critical and central to succeed since knowledge are intangible, dynamic, boundary less, context-specific, and difficult to grasp, transfer, imitate and transact (Chen et al, 2009).

According to Alavi and Leidner (2001) the recent growing interest in knowledge management and knowledge management systems is seen to have been boosted by the transition into the information age and the theories of knowledge as the primary source of economic rent. Consistent with such growing interest, a class of information systems, referred to as knowledge management systems (KMS) recently have been promoted by Information System (IS) researchers (Alavi & Leidner, 2001). Such a class IS has “evolved from the need to enable systematic organizational learning and memory by facilitating the coding and sharing knowledge across organizational entities that previously may have had little occasion for interacting” (Alavi & Leidner, 1998, p.2). With the aim at achieving and increasing the effectiveness and efficiency of knowledge management practices KMS have been adopted and utilized by many organizations. Besides, resistance to KMS is also seen as a big problem causing failure of knowledge management initiatives (Li, Liu & Liu, 2016).

Given the importance of KM and the growing area of KMS, this study’s objective is to synthesize the literature, identify patterns and trends as well as research gaps and recommend new research areas in the field in order to provide researchers, students, practitioners or decision makers and whom it may concern with a systematic understanding of knowledge management.

This study will look at an ample of definitions of KMS, KMS’ components, KMS adoption/implementation and influence factors, KMS success and KMS success models, and suggestions for future research.

2. Method

The aim of this study is to review literature of the field of knowledge management systems; and at the same time investigate under which school of economic thoughts that this subject has a close knit. The adopted approach of methodology to carry out this study is narrative approach, which means selected studies are compared and summarized on the basis of the author’s experience, existing theories and models; results are based on a qualitative rather than a quantitative level. The secondary data in the form of scientific articles were collected from creditable sources such as Halmstad University’s library databases associated with Web of science, Scopus and Science Direct, and also Google Scholar. The school of thoughts were collected from the HET website (Fonseca, n/d), which was recommended by the supervisor of this study’s authors. The main search terms that were used on the databases was knowledge management, KM, knowledge management systems, KMS, knowledge, information systems, IS, information theory and school of thought. When choosing which articles to include the finding result was limited to articles and then a selection of relevant ones was made. Out of the relevant articles some new once were added and some were excluded since the context did not fit or new once were found. The final articles collected were the base for the literature review. In order to fully understand the subject some articles regarding similar areas as knowledge, KM and IS were collected to provide information needed. The data were analysed and compared and also connected to a theory from the school of thought.

To test this study’s reliability stability one could do the test-retest method. If the sample of literature is the same as the first time the result would probably be of high correlation between the first and second one (Zikmund, Babin, Carr & Griffin, 2013; Bryman & Bell, 2015). The internal reliability on the other hand are more referring to respondent’s answers and if those are cohering (Bryman & Bell, 2015). To improve this study’s internal reliability the authors
made sure to see if the selected literature stated the same information at the bottom line. To achieve validity of the study reliability is necessary but it is not sufficient with only reliability (Zikmund et al, 2013). Validity of a study means that what was actually meant to be measured was measured (Zikmund et al, 2013; Bryman & Bell, 2015). The face validity of this study is that it is actually reviewing Knowledge Management Systems literature, which makes sure that the result reflects the concept concerned (Zikmund et al, 2013; Bryman & Bell, 2015).

3. Review of KMS literature
3.1. Definitions of KMS, KMS types, components and roles
To review KMS literature, it is necessary first to define Knowledge and Knowledge Management.

Information theory studies the transmission, processing, utilization, and extraction of information. Abstractly, information can be thought of as the resolution of uncertainty. In the case of communication of information over a noisy channel, this abstract concept was made concrete in 1948 by Claude Shannon in his paper "A Mathematical Theory of Communication". Shannon (1948) states that "information" is thought of as a set of possible messages, where the goal is to send these messages over a noisy channel, and then to have the receiver reconstruct the message with low probability of error, in spite of the channel noise. Information is converted to knowledge once it is processed in the mind of individuals and knowledge becomes information once it is articulated and presented in the form of text, graphics, words, or other symbolic forms (Alavi & Leidner, 2001). This is consistent with argument of Tuomi (1999) that suggested that knowledge becomes information and exists when it is articulated, verbalized and structured. This critically indicates that knowledge does not exist outside of an agent (a knower): it is indelibly formed by one's needs as well as one's initial stock of knowledge (Tuomi 1999). Knowledge is thus the result of cognitive processing triggered by the inflow of new stimuli. Toumi (1999) assumes that knowledge can only appear as a outcome of information and to create information data is required. "Information in turn, becomes knowledge when it is interpreted or put into context, or when meaning is added to it" (Toumi, 1999, p.105). In different perspectives, others define knowledge as (1) a state of mind, (2) an object, (3) a process, (4) a condition of having access to information, or (5) a capability. As a state of mind, knowledge enables individuals to expand their personal knowledge and apply it to the organization’s need (Schubert, Lincke, Gallen, 1998). As an object, it can be viewed as a thing to be stored and manipulated. Or in alternative way, knowledge can work as a process of simultaneously knowing and acting (McQueen, 1998). As a condition of having access to information, knowledge focus is to be organized to facilitate access to and retrieval of content (McQueen, 1998). Knowledge to interpret information, know which information that is necessary regarding decision making, it is defined as the capability to use information (Watson, 1999).

Knowledge can appear in many different types, everything from production, to sales, to research and development (R&D) (Davenport, Long & Beers, 1998). People in an organization hold knowledge in their minds, known as tacit knowledge, this type of knowledge is hard for others to use (Davenport et al, 1998; Von Krough, Ichijo & Nonaka, 2000). Tacit knowledge is things that represent knowledge that are influenced on personal experiences, which are shared when employees meet and share their knowledge regarding the organization (Von Krough et al, 2000). Except from tacit knowledge there is knowledge that are available for others in records, databases, systems etc. that is known as explicit knowledge (Nonaka, 1994). According to Ruggles (1998) KM aroused a growing interest and became a
hot issue in the late 1980’s and beginning of 1990’s. According to Ruggles (1998) KM provides organisations a way of adding or creating value by teaching how to do things. Meanwhile Gold, Malhotra and Segars (2001) states that the organization’s key capabilities is the success factor for KM. KM is a way for organizations to take care of all the existing knowledge within the organisation. Knowledge, having been serving as a key strategic resource or even the foundation of organization competitiveness in the contemporary economy (Wang & Aspinwall, 2005; Chen, Huang & Cheng, 2009), knowledge management is recognised of high importance. From very early, KM can be defined as “an emerging set of organisational design and operational principles, processes, organisational structures, applications and technologies that helps knowledge workers dramatically leverage their creativity and ability to deliver business value” (Gurteen, 1998, p.6). KM can also be defined as “the practice of selectively applying knowledge from previous experiences of decision making to current and future decision making activities with the express purpose of improving the organization’s effectiveness” (Jennex, 2005, p. iv).

According to Damodaran and Olphert (2000), KMS are information systems that are perceived as facilitating organizational learning by capturing important (content and process) ‘knowledge’ and making it available to employees as necessary. Alavi and Leidner (2001) defined KMS as “IT (Information Technology)-based systems developed to support and enhance the organizational processes of knowledge creation, storage/retrieval, transfer, and application” (p. 114). According to Abou-Zeid (2002) there are two different perspectives of KMS and that complement each other, the knowledge perspective or the process perspective. Those are quite similar to the two common perceptions of organizational knowledge management systems (OKMS) according to Meso and Smith (2000), the technical perception and the socio-technical perception. KMS create an identity that are associated and loyal to the company in the same time as it made people in the organization promote trust, social norms, expectations and obligations (Sherif et al, 2006). According to Cerchione and Esposito (2017) on the other hand, a KMS can be divided in two categories, these are KM-practices and KM-tools, which divides the specific IT-based system from the methods and techniques. SMEs tend to use traditional KM-Tools compared to new more efficient ones, which could reflect on the information and communication technologies (ICTs) fast development and technological changes (Cerchione & Esposito, 2017). For a system to be classified as a KMS, Alavi and Leidner (2001) argue that a chief purpose of the system must be to promote one or more of the four organizational processes (knowledge creation, storage/retrieval, transfer, and/or application). Examples of knowledge management systems can be: collaborative systems, group decision systems, data mining tools, expert systems, knowledge repositories, Intranets, electronic bulletin boards, groupware, Lotus Notes, portals, data warehouses, etc. (Alavi & Leidner, 2001). Although there is a diversification of KMS forms, three salient features of KMS are identified: knowledge repositories, knowledge maps, and collaborative tools (Alavi & Leidner, 1999; Bernard, 2006). Knowledge repositories focus on the codification and storage of knowledge to encourage and support reuse of knowledge, and comprise databases that keep best practices, experiences and other codified knowledge of experts. Knowledge maps, also referred to as expert directories, can be searchable indexes or catalogues of expertise held by individual employees (Gray, 2000), providing a means of finding and contacting individuals who have specialized knowledge and experiences (Alavi & Leidner, 1999). Collaborative tools such as groupware, email, chat, electronic forums and conferencing, provide communication and collaboration services, enabling knowledge exchange among knowledge seekers and knowledge providers.

KM & KMS may play different roles in relation to different knowledge forms and types, as defined by different perspectives (Alavi and Leidner, 2001). According to the perspective of
Knowledge vis-à-vis data information, knowledge is personalized information, and knowledge management focuses on bringing individuals to potentially useful information and assisting information assimilation. Therefore, there will be no radical difference between KMS and existing IS, but KMS will be extended towards helping in user assimilation of information (Alavi & Leidner, 2001). On the contrary, respective to the perspective that knowledge is a condition of access to information, the focus of KM is organized access to retrieval of content, and Information Technology (IT) plays the role of providing effective search and retrieval mechanism for locating relevant information. However, KMS focus is to provide access to sources of knowledge rather than itself if knowledge is considered as the state of knowing and understanding, and KM takes part in enhancing the learning and understanding of individuals through information provision. In contrast, the perspective considering knowledge as an object to be stored and manipulated can lead to a conclusion that KM keys in building and managing knowledge stock and KMS task is gathering, storing and transferring knowledge (Alavi & Leidner, 2001). If knowledge is seen as a process of applying expertise, KM is focused on knowledge flow and the process of creating, sharing and distributing knowledge (Alavi & Leidner, 2001; Abou-Zeid, 2002) Looking at knowledge as capacity, KM is otherwise referred to building core competencies and understanding strategic know-how, and KMS is to improve intellectual capital by facilitating development of individual and organizational competencies (Alavi & Leidner, 2001). One knowledge form that often has been ignored is the cultural and ethnic background of employees which often is not considered as important in most KM efforts (Mason, 2003). Mason (2003) express that discussions about KMS often fail to include the potential in knowledge represented by multinational employees.

Sherif, Hoffman and Thomas (2006) created a model out of hypotheses saying that KMS positively will impact an organization’s social capital and that the social capital then will improve the organization’s ability in knowledge creation and transfer. The study resulted in all hypotheses approved and a connection between KMS, social capital, knowledge creation and transfer.

![KMS, Social Capital, and creation and transfer of knowledge](sherif.png)

**Figure 1.** KMS, Social Capital, and creation and transfer of knowledge. (Sherif et al, 2006)

### 3.2. KMS adoption/implementation and influence factors

Given the significant role of KM and KMS, many organizations have responded to the challenge of knowledge management by focusing significant effort and investment on KMS. Most of the earliest researches on KMS focused on consulting and professional service firms but now more and more organization’s look into KMS since they see the potential benefit in it (Alavi & Leidner, 1999; Huosong, Kuanqi & Shuqin, 2003). One of the earliest sets of seven critical success factors (CSFs) impacting KM practice was suggested by Skyrme and Amidon
(1997), based on lessons drawn from an international study of practices and experiences of leading companies in KM. Davenport et al. (1998), basing on their qualitative observations of KM projects in large organisations as well as intuitive feeling, proposed eight major factors that contributed to KM effectiveness and hypothesised that the most important factors were culture, organisational infrastructure, motivational aids and management support. Focusing on factors impacting on implementation of KMS in small and medium enterprises, studies of Wong (2005) and later Wong and Aspinwall (2005) proposed 11 critical success factors (CSFs) with ranking of importance relevant as follows: (1) management leadership and support, (2) culture, (3) information technology, (4) strategy and purpose, (5) measurement, (6) organizational infrastructure, (7) processes and activities, (8) motivational aids, (9) resources, (10) training and education, and (11) human resource management. The findings even revealed a slight departure from findings proposed by Davenport et al. (1998); motivational aids and organisational infrastructure were identified to be less important. In addition, resources, training and education, and human resource management, which were placed with a low ranking to be CSFs in previous studies in large organisations, were also shown to be imperative in SMEs. This suggests that there are differences in the perceived importance of factors for adopting KM, between large and small businesses.

The implementation of KMS is seen as different from that of traditional enterprise information systems. In comparison with traditional enterprise information systems, Lin (2013) says there are no exact requirement specifications about KMS inputs, processes, and outputs. KMS implementation is not only a technological issue, but also involved with organizational culture, structure, process, and human factors (Bertoni, Johansson, Larsson, & Isaksson, 2008; Quaddus & Xu, 2005). Therefore, KMS implementation may be comparatively more difficult, risky, and technologically innovative (Eisenhauer, 2015; Mankin, 2015; Soualhia, Maazoun, & Affes, 2014). Businesses usually invest significant time and resources to implement KM system project (Azhdari, MousaviMadani, & ZareBahramabadi, 2012). Therefore, it is critical to understand and identify the factors impacting on firms’ implementation of KMS. The process of KMS implementation can have two stages, pre-adoption and post-adoption (Lee & Xia, 2006; Lin, 2013; Saeed & Abdinnour-Helm, 2008). At the first stage, information related to KMS will be gathered and valuated by firms, then firms will decide if KMS is adopted or not. Since KMS is adopted, it will go to the next stage of post-adoption, where it will be implemented and deployed, its success and benefits will be assessed, employees will use KMS as part of their work process (Lee,Wang, Lim, & Peng, 2009; Zhu, Dong, Xu & Kraemer, 2006).

Many researchers have invested efforts into investigating the factors affecting implementation of KMS of firms. However, their proposed factors are slightly different from each other such as: strategic relevance of IT, installed user-centric technologies, and the levels of IT investment (Ryan & Prybutoka, 2001); technological factors including relative advantage, complexity, and compatibility, organizational factors including management support, company structure, and corporate culture, environmental factors including competitors’ pressure and requirements from business partners (He & Wei, 2004); organizational IT competence, KMS compatibility, KMS complexity, KMS relative advantage, lack of cross-department interaction, the opinion and behaviour of top management, and the “Guanxi” and “Renqing” culture (Lee et al., 2009). Some others suggested different factors by using different methods, such as: ease of use, value and quality of the knowledge, system accessibility, user involvement, integration, top management support/commitment, project manager and team skills, and incentives (Nevo & Chan, 2007); perceived usefulness, perceived ease of use, and compatibility affecting KMS intention (Kuo & Lee, 2011); culture, senior managers, teamwork, empowerment, performance measurement, training, involvement,
information system, benchmarking, and knowledge (Heidari, Moghimi & Khanifar, 2011); Technology innovation including perceived benefit, complexity and compatibility, Organization in terms of sufficient resources, technology competence, top management support, organization culture, and Environment in terms of competitive pressure (Wang & Wang, 2016). This result can be explained by different framework or techniques they used to conduct or different contexts they conducted their study in. However, basing on their findings and proposals, it can be seen that there are some similar as well as some different critical influence factors affecting KMS implementation. In general terms, they can be drawn into three categories of factors: Technical, Organizational and Environmental. The both technological and organizational factors play an important role at both stages of KMS process, i.e. pre-adoption and post-adoption. These factors are internal and can be controllable by organizations. However, the environmental factors, which are external, have effects on KMS adoption, either facilitating or inhibiting the KMS implementation decision. But such external factors are not taken into account for CSFs since organizations have little control over them when implementing KMS (Wang & Wang, 2016).

Akhavan, Jafari, and Fathian (2005) analyzed the failure factors of KMS implementation from a pharmacist company. The failure factors include lack of top management commitment and support, improper selection of knowledge team leader and members, improper planning, lack of separate budget for knowledge management project, organizational culture, lack of cooperation between team members and employees, and resistance against changes. Further support to resistance against changes, the status quo bias theory was employed to explain user resistance to the new information system (Kim & Kankanhalli, 2009; Li, Liu & Liu, 2016). The results indicate that status quo bias in terms of loss aversion (cognitive misperception of loss aversion), transition cost (the costs incurred when adapting to the new situation), social norms (as the psychological commitment) have positive effects on KMS resistance intention. Meanwhile, inertia positively moderates the impact of status quo bias on KMS resistance intention. Specifically, it is suggested that the employees who perceive a higher loss aversion associated with the adoption of KMS will be more likely to resist the KMS. Employees, who expect that a lot of time and effort will be needed for them to learn the use of KMS or that the transition may lead to unexpected problems, will tend to resist the KMS. Or employees who perceive higher resistance pressure from socially important others will have a tendency to be against the KMS. When employees have a higher inertia, maintaining current behaviour, the effect of loss aversion, transition costs and social norms on the KMS resistance intention will be stronger.

3.4. KMS success and KM/KMS success model.

Shannon (1948) presented a schematic diagram of a general communication system, which included five parts: information source, transmitter, channel, receiver, and destination. This general communication system has later on been adopted by others as DeLone and McLean (1992) that created a KMS success model with similar thoughts. According to DeLone and McLean (1992, 2003), KM success can be defined as reusing knowledge to enhance organizational effectiveness by providing the appropriate knowledge to the people who need it when it is needed. KMS success can be defined as making the components of KMS more effective by improving search speed, accuracy, and so on. It is implied that by increasing KMS effectiveness, KMS success is enhanced, and decision-making capability is improved, which can result in positive impacts on the organization. Besides, Alavi and Joachimsthaler (1992) suggested that knowledge management systems are multi-faceted. That means effective KMS only involve technology, but also encompass broad cultural and organizational issues, which is consistent with IT management literature. In fact, effective resolution of
cultural and organizational issues was considered as a major concern in the deployment of KMS.

Based on a review and integration of 180 research studies that used some form of system success as a dependent variable, DeLone and McLean introduced their IS Success Model the first time in 1992. According to this model, there are six interrelated dimensions of success, as shown in Figure 2. Each dimension can have measures for determining their impact on success and on each other (DeLone & McLean, 1992). Shannon and Weaver (1949) (as cited in DeLone & McLean, 1992) presented three levels of information which was used by DeLone and McLean (1992) when they created the IS Success Model.

![Figure 2. IS Success Model. (DeLone & McLean, 1992)](image)

Then the DeLone and McLean IS Success Model was adopted by Jennex, Olfman, Pituma, and Yong-Tae (1998) as the generic framework and customized the dimensions to reflect the System Quality and Use constructs needed for an organizational memory information system (OMS). Jennex and Olfman (2002) expanded this OMS Success Model to include constructs for Information Quality. Many scientists over the years have adopted and included or cited DeLone and McLean’s (1992, 2003) IS Success Model making the model widely approved that the model’s reliability (Jennex et al, 1998; Jennex & Olfman, 2002; Jennex & Olfman, 2006; Lai et al, 2009; Wu & Wang, 2006; Alavi & Leidner, 2001). Some have also adopted, included or cited Jennex et al. (1998) and Jennex and Olfman (2002, 2006) revised models. In 2003, DeLone and McLean revisited the D&M IS Success Model by incorporating subsequent IS success research and by addressing criticisms of the original model as shown in figure 3. Major changes include the additions of a Service Quality dimension for the service provided by the IS group, the modification of the Use dimension into a Intent to Use dimension, the combination of the Individual and Organizational Impact dimensions into an overall Net Benefits dimension, and the addition of a feedback loop from Net Benefits to Intent to Use and User Satisfaction. These major changes are incorporated in the original model, which finalized IS Success Model as shown in Figure 3.
By applying the widely accepted DeLone and McLean (1992, 2003) IS Success Model as a framework, Jennex & Olfman (2006) modified the Jennex and Olfman (2002) OMS Success Model into a KM Success Model, which is shown in Figure 4.

In the KMS model system quality stands for the performance of KM and the knowledge creation storage/retrieval, transfer and application functions. The knowledge quality makes
sure that the right knowledge and sufficient context are provided in time to the right user. Service quality on the other hand provides an effectively use of KM with the right support for the users. The satisfaction with KM from the users point is measured in the user satisfaction dimension and the perception of the benefits of KMS are measured in the intent to use section. The net benefit stands for that KM will impact every single users performance at the workplace, the information system should improve the users regarding decision making, impact their activity or impact the decision maker’s view of the positivities with the information system. The singular users impact should affect whole organization regarding performance (DeLone & McLean, 2003).

3.5 Research gap & future research
The development of the KM field has led to the identification of various critical success factors for its adoption. However, prior research has explored them predominantly from a large company perspective, few studies have investigated the CSFs of KMS in SME. In addition, the literature is also limited by the scarcity of empirical studies investigating these factors in this particular business sector (Wong & Aspinwall, 2005). Therefore, more studies in this area would result in interesting findings that can contribute to the literature of KMS. As mentioned above, the adoption of or resistance to knowledge management systems is mainly an individual decision. Therefore, research on the adoption or resistance to knowledge management systems should focus on the individual level. However, the literature review reveals that studies with people orientation are still lacking. In addition, very few studies have used the status quo bias theory to explain user resistance to the new information system. Further research then can be invested into this angle of KMS in order to have a wider and deeper view of CSFs for KMS implementation. According to Mason (2003) culture is an important knowledge factor that often is excluded from KMS discussions. Since it is almost 10 years since Mason conducted his study, it seems reasonable to investigate whether this has change or still is a factor that often fails to be included. Since the world is growing into a more global market, cultural knowledge feels as a highly valuated knowledge for organizations KMS.

If more factors affecting KMS implementation are discovered or confirmed, changes in the existing critical factors are suggested by the future research, the authors of this study suggest that the D&M IS Success Model may need to be reviewed and have necessary changes if possible.

4. Conclusion
In this literature review the authors have noticed that there are some differences in how to define knowledge and knowledge management out there (Davenport et al, 1998, Tuomi, 1999; Schubert et al,1998; McQueen, 1998; Watson, 1999), but they all serve the same base on which KMS should work and benefits the users or entities who employ it. Various key factors that can have impacts on the success of KMS implementation were reviewed from different studies which were carried out in different area and sectors. Those factors can be classified under technological, organizational and environmental categories and some implications for organizations to exploit KMS successfully in order to bring about good effect on their businesses. The literature review also revealed that DeLone and McLean’s (1992; 2003) IS Success Model have been approved as measurement for KMS success among many authors as well as adopted and modified by others.
In addition, although the field of KMS has expanded over the past years, growing from only serving one type of organizations (consulting & professional service) to serving a broad spread of different organizations, it still have little attention in the research field. KMS still needs a great amount of further investigation and is still a growing subject. The growth of KMS depends on the high belief in user success. When organizations see the potential of reaching certain goals by implementing KMS, more and more start to create their own internal knowledge systems. Knowledge management systems have multi facets. The effectiveness or success of knowledge management systems should be considered not only with just technology, but also broad cultural and organizational issues. In fact, the major concern in the deployment of KMS have been referred to effective resolution of cultural and organizational issues, which is consistent to information system management literature, advocating organizational and behavioral change management as critical success factors in the implementation of information systems.

Shannon’s work on communication systems (1948) regarding message transportation and as the father of information theory as well as cited by DeLone and McLean (1992) makes a great argumentation for which school of thought is the most suitable for this subject. In beliefs of KMS as a system to transport and provide knowledge of one person to a whole organization there is a need of overcoming obstacles. In KMS’s organizations want the knowledge to be received with a minimal amount of errors, similar to Shannon’s (1948) model, to make sure that the knowledge is not misunderstood.

**Reference list**


