The Critical Success Factors for Knowledge Management Adoption – A Review Study

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Abstract **- Effective knowledge management (KM) provides purposeful opportunities to organizations. Many factors affecting successful implementation of KM have been identified in previous research. Despite growing interest on KM, there is still a lack of a complete review the current state of critical influence factors for potentially successful KM adoption. This paper reports a literature review and a classification scheme for knowledge management. The former consists of 42 journal articles published between 1982 and 2009 that are appropriate outlets for KM research. The articles are classified and results of these are presented, based on a scheme that consists of 4 main categories: organizational factors, individual factors, KM capability and organizational performance. A comprehensive list of references is presented. Hopefully, this review will provide a source for anyone interested in KM research and help simulate further interest.**

Index Terms - Knowledge management (KM), Critical success factor (CSF), Review study.

I. INTRODUCTION

In this era of a knowledge-based economy, knowledge plays an important role in building sustainable competitive advantages for organizations. Knowledge also is a major asset for the success of organizations and economic growth in any country. A focus on the importance of creating and using knowledge to achieve business success has encouraged executives to adopt Knowledge Management (KM) with an expectation that KM would result in higher competitive advantages and improved performance.

As the modern business environment has become more turbulent and unpredictable than ever, it is much more challenging for organizations to perform well. As is widely believed, businesses are increasingly competitive and the better use of knowledge has become a progressively more important asset for building competitive advantages [1] [2]. As a result, managers and executives are paying greater attention to the issue of how knowledge can be better managed to optimize their organizational performance.

The importance of KM is evidenced by recent reports. For example, in a recent IDC survey (2005) reports that the growth in use and expenditures of KM in the service industry confirms that KM is treated as a long-term, strategic effort rather than a discrete undertaking. Moreover, the IDC Survey shows that over 51% of the respondents seek to integrate information and applications by establishing a single access point. Other major reasons for purchasing KM technologies include the need to streamline internal business processes, create a unified view of enterprise information and reduce duplicate applications. The report predicts that government, business, and financial services are the vertical markets most likely to adopt KM-related technologies.

Effective knowledge utilization and management are important concepts, but they are not new. Management has long recognized the value of knowledge management in solving business problems. It is widely believed that enterprises are increasingly competing based on their ability to effectively create and utilize knowledge. Nevertheless, numerous challenges remain for firms seeking to implement a Knowledge Management System.

Dyer [3] found that the greatest challenge in implementing successful KM programs was related to people and organizational culture. Various international studies confirm this finding [4] [5]. Other studies have also reported that cultural challenges are frequently the major obstacle to implementation [6]. KM is likely to be unsuccessful if an organization does not have a "sharing" culture, if employees are unaware of what KM is and its associated benefits, or do not value the effort. Executives have noted that the main challenge they face is ensuring employees share information willingly and consistently [7].

The most significant challenge facing enterprises implementing a Knowledge Management System is the lack of understanding of its benefits. These benefits may include: (1) Reduced loss of intellectual capital from people leaving the company, (2) Reduced costs owing to the achievement of economies of scale in obtaining information from external providers, (3) Reduced redundancy of knowledge based activities, (4) Increased productivity resulting from making knowledge more rapidly and readily available, (5) Increased employee satisfaction through greater empowerment, and (6) gaining a competitive advantage [8].

A KM-driven organization typically benefits from gaining more efficient, productive and higher quality workers. Herder et al. [9] believed that KMS offers some

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strategic benefits. The reason for this phenomenon may be that the key benefits offered by KMS are that it helps accelerate the achievement of business objectives, including reduced cycle times, shorter time-to-market and reduced costs. It was estimated that the Fortune 500 firms lose $12 billion annually due to the "knowledge deficit" from not reusing existing knowledge [10]. Shankar et al. [11] noted that the effective deployment of KM requires investment in KM systems and technologies, and an organizational commitment to their continuous use. Benefits of KM include the reuse of existing knowledge elements, and the avoidance of repeat costs in solving repeat problems. In sum, knowledge management is the basis for the formalization and development of enterprise integration. Knowledge management enables superior performance for both solving problems and enhancing motivation.

A major motivation for this research is most existing research in KM has focused on developing new applications of information technology to support the capture, storage retrieval and distribution of explicit knowledge. Although prior researchers also have investigated the factors for influencing performance, it is still poorly understood why the different factors should be considered to impact on performance in KM research.
Given the above motivation, the purpose of this study is:

- to review the state of research of KM/KMS critical success factors. This will be done by extensive literature review and organization to form a helpful knowledge structure.
- to demonstrate a classification scheme for KM/KMS critical success factors. The results will be able to not only compare to existing literature but also substantially expand our knowledge in KM area.

In this study, we concentrate on reviewing and classifying CSFs of knowledge management. We focus on knowledge management being crucially important for the success of knowledge management adoption. We deduced more than 20 potential facilitating factors from literature, and based our final classification of these factors.

The remainder of this paper is organized as follows. After defining critical success factor, and discussing our identification and selection criteria of articles, we develop a model to classify those critical success factors of knowledge management. Then we report our research results. Finally, we present conclusions.

II. THE DEFINITION OF CSF

Daniel [12] was the first to propose the idea of critical success factors (CSF) but the idea was later popularized by Rockart [13]. The idea is extremely simple: in any organization certain factors will be critical to organizational success, in the sense that, if objectives associated with the factors are not achieved, the organization will fail, possibly even catastrophically. Regarding the identification of CSFs, in a limited number of areas satisfactory results can ensure successful competitive performance, known as CSFs. Digman [14, p.247] defined CSFs as the areas where things must go right for the business to flourish. Moreover, Oakland [15, 325] defined CSFs as what the organization must accomplish to achieve success mission by examining and categorizing the impacts. Oakland added that CSFs are the minimum key factors or sub-goals that the organization requires, and which together achieve the mission goals.

III. CRITICAL SUCCESS FACTORS OF KM

Kanji and Tambi [16] stated that CSFs are among the few things that must go well to ensure success for managers and/or organizations. CSFs represent managerial areas that must be assigned special and continual attention to achieve high performance. To effectively develop and implement a knowledge management system, certain critical success factors are required. Therefore, this section aims to demonstrate the critical success factors (CSFs) in different organizational settings through KM literature review. Specifically, this section aims to examine the factors of the CSFs as a component of the research model. Critical success factors identified in literature are reviewed and the result is summarized in Table 1-4, which summarizes the diverse perspectives on CSFs of some of the literature. The factors in the tables are ordered by the published year in the reviewed literature. These tables also show the frequency of source. The citation frequency provides valuable information on the relative popularity of these factors. Although the last factor may not imply that it is the least important one. That is, more popular factors are ranked higher in the table for easy reading. In some cases, different terms may be used to represent similar concepts in different research. A generic term is derived to represent all synonyms.

Table 1. CSFs of KM—organizational factors

CSFs of organizational factors	Sources
Technology infrastructure -- hardware equipment; network, and electronic repositories;	[17][19][2][52][63][64][65][21][66][24][25] [67][54][29][30][32][33][55][37][68][69][70] [71][40][72][41][42][58][45][73][74][44][75] [76][46][59][61][47][48]
Management support - senior management support, and top-management commitment	[17][18][19][20][21][22][23][24][25][26][27] [28][29][30][31][32][33][34][35][36][37][38] [39][40][41][42][43][44][45][46][47][48]
Culture – sharing culture, Org. climate, Multiple culture (innovative, bureaucrat, support), work group size, and changing employee's attitudes	[49][79][80][17][26][19][2][81][52][65][64] [21][27][66][25][82][54][30][32][55][34][83] [84][41][9][42][44][75][76][61][48]
Training – teaching; learning, E-learning and coaching.	[17][2][52][63][21][54][28][30][31][32][37] [68][40][41][42][58][73][44][75][46][59][60] [48]
Organizational structure – organizational location, hierarchy, department, flexibility, size.	[9][19][21][25][37][42][44][46][47][48][49] [50][51][52][53][54][55][56][57][58][59][60] [61]
Leadership – leadership style, and top management leadership	[49][17][19][2][81][52][18][64][66][25][54] [29][32]85][41][9][42][86][75][48]
Strategy	[17][19][64][25][31][68][58][45][46][60] [59][87][88][61][48]
Reward – promotion, bonuses, and extrinsic reward	[20][65][35][77][38][62][78]
Technology tools – tools of KM, functions of KMS, and database	[49][17][25][9][68][58]
Security - data security, network connection security and job security	[65][30][44][45][78]
Human resource management	[45][60][59][48]

Table 2 CSFs of KM—individual factors

CSFs of individual factors	Sources
People related factors: experts assistance, sharing incentive employee motivation, involvement	[49][20][52][63][26][21][93][66][24][25][95] [96][54][28][35][38][9][74][44][75][76][47] [48]
Trust	[17][19][2][20][64][25][90][28][91][35][38] [84][41][92][58][45][42][46][60][59][89]
Openness :attitude for learning and sharing	[17][19][20][64][25][28][33][35][38][41][42] [58][45][46][60][59][89]
Incentive: sharing incentive.	[25][30][70][9][74][78][62]
Adaptability: communication, organization. and collaboration	[93][22][23][82][29][31][58][94][45]

Table 3 CSFs of KM—knowledge and KM capability

CSFs of KM capabilities	Sources
Knowledge – knowledge structure, source, standard, flexible knowledge structure and codified format.	[17][19][2][63][50][51][25] [26][54][29][30][68][57][70] [97][9][42][58][73][75][60] [48][78]
Sharing/ Transferring/ Dissemination – it can be informal or formal, personal or impersonal with multiple channel for knowledge transfer; knowledge community sharing, dissemination, distribution and contribution.	[19][2][52][30][32][33] [34][74][25][19][17][58] [68][60]
KM capability – create, build, compile, organize, transform, transfer, apply and safeguard knowledge.	[17][21][66][29][31][32] [55][34][97][43][78][48]
Retrieval/ Capture / Storage/documentation–knowledge can be retrieve, capture and store in KMS.	[2][25][30][34][68][25] [17][58][78]
Creation–Knowledge creation involves developing new content or replacing existing content within the organization's tacit and explicit knowledge (generation, construction, deriving, and producing).	[32][34][17]

Table 4. CSFs of KM—performance factors

CSFs of performance factors	Sources
Organization performance – financial performance (ROI, ROS, ROA), and non-financial performance (effectiveness, efficiency, quality, success, improvement, innovativeness, reliability, accuracy, growth, satisfaction)	[49][19][98][99][21][93] [26][27][24][82][100][101] [30][29][31][77][97][40][41] [9][42][44]
Benchmarking	[102][103][104][42][68] [75][59]

From these factors, we see that some of them are more important than other. So we based on a literature survey, the results of several studies with KM research, we detail the well-known classification of KM critical success factors into four categories: organizational factors, individual factors, knowledge management capability and organizational performance; Figure 1 presents these categories.

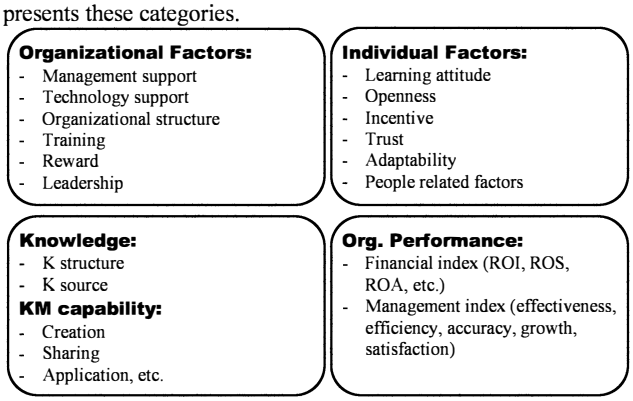

Figure 1. The four categories of KM/KMS critical success factors

A total of 91 KM articles from ABI/Informs and EBSCO databases had been collected worldwide. These articles have been analysed regarding the use and understanding of the critical success factors, the terms used to describe the factors influencing the success of knowledge management. Quantitative and qualitative content analysis methods have been applied. Therefore, organizations must take into account these factors in order to exploit, as much as possible. These factors are aimed at providing organization to sustain competitive advantage as reference and also providing researcher has a new concept for research.

IV. CONCLUSION

This study has several implications for research and practice. First, it provides a set of factors that contributes to a successful KM deployment. Secondly, there is a need for "alignment" for successful KM/KMS adoption. Those CSFs supply an alignment for organization to reference. With the increasing importance of the different perspectives of knowledge management in organizations, there exist many opportunities for researchers in the area of knowledge management to advance the understanding of KM/KMS adoption. The review of literature that led to be classified as four categories of CSFs is presented in this article that fall into the following four broad categories (as Figure1):

- organizational factors
- individual factors
- knowledge management capability
- organizational performance

Therefore, we suggest that organizational factors, individual factors, knowledge management capability and organizational performance are extremely important perspectives to KM/KMS adoption.

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