Critical Factors for Successful KM Initiatives in Project Background

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Abstract

This paper aims to analyze different influencing factors to knowledge management initiatives in the project companies. It presents a model of critical factors, which have deep concerns for failure or success of knowledge management initiatives in projects. Based on literature and the survey-based research results, it finds out that non-availability of incentives and non-presence of appropriate system is the most significant barrier for successful KM initiatives in projects. It is advocated that project managers should harmonize KM practices with organization cultures by formulating an attractive incentive package for their project members to motivate them towards increased effort to suggest ideas for new KM opportunities and launch a user-friendly system before introducing KM initiatives.

Keywords: KM initiatives, Critical factors, Projects

1. Introduction

In the current decade knowledge as competitive asset is accepted universally and interest in knowledge management (KM) continues to grow and most of the companies are organizing their businesses in projects. Gradually, it has become a regular approach of business and now can be observed to develop into a vital part of many organization's business strategies (Prencipe and Tell, 2001). However, KM in projects is emerging as a condition to maintain a competitive advantage. That is why there have been a plenty of KM initiatives in project organizations. Likewise, corporate spending on KM initiatives has increased significantly over the years (Ithia, 2003). This fact is stimulated by the growing recognition of the knowledge-based view of the firm in which knowledge is acknowledged as the key sustainable competitive resource (Kogut and Zander, 1992). As a result, organizations are implementing various KM initiatives to identify, share and exploit their knowledge assets. But with this increasing trend still companies are not expert enough in handling their knowledge assets gained during the projects and most of KM initiative failed because of the technological, cultural, knowledge content and project management reasons (Chua and Lam, 2005).

However, there are barriers to this process which need to be acknowledged to be overcome. The current study attempts to understand some circumstantial factors that what kind of impact they have on knowledge management initiatives particularly when these are taken in projects. This paper is organized in six segments: the first and second segments evaluate the key concepts of KM and project, by discussing KM initiatives, their objects and success conditions. Segment three summarizes the literature that has speculated on the sources of success and failure for KM initiatives, particularly by introducing project KM initiatives influencing factors model that is under exploration in this paper. Then, segment four consists of methodology that explains data collection and results. Finally, discussions of the findings and conclusions are presented in segments five and six accordingly.

2. Knowledge management and projects

Alavi and Leidner (1999) define KM as a systemic and organizationally specified process for acquiring, organizing and communicating knowledge of employees so that others may make use of it to be more efficient and productive. In wide terms, project organizations are economic firms that put in order their activities around several comparatively isolated projects that can be treated as separate organizational entities. These projects are temporary coordination systems in which diversely skilled specialists work together to accomplish complex and innovative tasks in a predetermined period of time (Grabher, 2002). Key characteristics of such kind of organizations are: the significant interdependence of different kinds of knowledge and skills, the complexity and unpredictability of many tasks and problems, and the time-delimited nature of project goals and, often, of employment.

However, the identification of critical knowledge and ability to exploit it is a challenge for every project organization (Kasvi *et al*., 2003). Without a certain knowledge system and supporting culture during a project's life cycle, knowledge assets can misplaced once a project is completed. This results in organizational knowledge destruction and loss of organizational learning (Kotnour, 2000). In comparison with organizations, which are supported by structure and routines to suck up knowledge, projects do not have any supportive natural transfer mechanism and also do not have any organizational memory, as they are temporary in nature. Planned management efforts and incentives are fundamental to the creation, capture and transfer of knowledge in projects. For example, lessons learned have to be socialized consciously among individuals before they leave the project. Lack of KM will make projects incapable to add any enhancement to organizational business processes.

3. Knowledge management initiatives

Many organizations are taking great interest in knowledge management and many are launching knowledge management initiatives. Consistently, KM has been presented as a compelling strategy for organizations to improve their business processes and gain competitiveness (Chua and Lam, 2005). But furthermore, the outcome of implementing KM has been reported to be remarkably successful either in terms of financial savings, revenues generated or the level of user acceptance. According to Yeh et al (2006) in the process of carrying out knowledge management, enterprises have to face the varying conditions of corporate culture, workflow processes, and the integration of group members' knowledge. They also need strong support from top management, because it is possible that during the process they will encounter resistance from employees. However, before the launch of KM initiatives all the employees of company or in case of projects, project members should be known about the objectives and results of KM initiatives in their companies and projects.

4. Objectives of KM initiatives

According to Wiig (1997) there are two types of KM objectives, for whom organizations can pursue:

1. To make the enterprise act as intelligently as possible to secure its viability and overall success.

2. To otherwise realize the best value of its knowledge assets.

Most of organizations effectively build, transform, organize, deploy and use knowledge assets to accomplish these goals. In simple words, the overall rationale of KM is to maximize the organization's effectiveness and profits from its knowledge possessions and to renovate them persistently. From a managerial perspective KM is to understand, focus on, and manage systematic, explicit, and deliberate knowledge building, renewal, and application. There are four areas of emphasis for systematic KM (Wiig, 1997).

I.   Top-down monitoring and facilitation of knowledge-related activities

II.   Creation and maintenance of the knowledge infrastructure

III.   Renewing, organizing, and transforming knowledge assets

IV.   Leveraging (using) knowledge assets to realize their value

5. Successful KM Initiatives

Davenport et al. (1998) agreed on several indicators of successful KM initiatives; which are highlighted in table 1.

Table 1: Indicators of successful KM initiatives

Indicators	Justification
Resources Growth	growth in the resources attached to the project, including people and budget
Knowledge Content Development	development in the dimensions of knowledge content and usage (that is, the number of documents or accesses for repositories or participants for discussion-oriented projects)
Project Survival	the likelihood that the project would survive without the support of a particular individual or two, that is, the project is an organizational initiative, not an individual effort
Financial Return	evidence of financial return either for the knowledge management activity itself or for the larger organization

It is not compulsory that companies can see these all indicators at the same time or in the same sequence. These can vary according to the project company environment and there are also different time spans, in which these indicators can be observed.

6. Factors affecting to KM initiatives

Digman (1999) claims that reviewing critical KM initiatives success or failure factors is helpful for organizing environmental analysis because there is an important link between environmental analysis and critical factors leading to organizational success. The analyses of these factors provide an important meaning to knowledge management through the identification of core processes that are critical to successful knowledge management implementation, as elucidated by Quinn et al. (1996). Therefore, companies should identify critical enablers—success factors and barriers—failure factors of KM initiatives to gauge their performance.

In achieving this, various KM researchers have provided different models of enablers—success factors and barriers—failure factors of KM initiatives. Firstly, we will look on enablers- success factors, which have been explored in last ten years by KM researchers. In table 2 little attempt has been made to integrate all the success factors.

Table 2 Enablers of successful KM initiatives

Authors and Publications	KM Enablers
Davenport et al. (1998) Successful knowledge management projects	Technology infrastructure Organizational infrastructure Balance of flexibility, Shared knowledge Knowledge-friendly culture Motivated workers Means of knowledge Senior management support, commitment.
Ryan and Prybutok (2001) Factors affecting knowledge management technologies: a discriminative approach	Open organizational culture Senior management, leadership Employee involvement Teamwork Information systems
Moffett et al. (2003) An empirical analysis of knowledge management applications	Friendly organizational culture Senior management leadership, commitment Employee involvement Employee training Trustworthy teamwork Employee empowerment Information systems Performance measurement Benchmarking Knowledge structure
Connelly and Kelloway (2003) Predictors of employees' perceptions of knowledge sharing cultures	Management support Social interaction Technology Demographics
Yeh et al (2006) Knowledge management enablers: a case study	Strategy and leadership Corporate culture People Information Technology

However, all the studies were conducted by authors in different time spans, backgrounds and regions but still we see that these are more a like same only difference is of words or their arrangement. Study by Moffett et al. (2003) can provide a generalized framework of the KM initiatives enablers. Many studies are narrowly scoped although they identified some significant success factors.

After analysis of five KM initiative failure case studies Chua and Lam (2005) have uncovered a list of barriers—failure factors of KM initiatives, which appear to be four distinct categories like: technology; culture; content; and project management (see table 3).

Table 3: Barricading factors

TECHNOLOGY:- refers to aspects of KM infrastructure, tools and technology	
Connectivity	The technical infrastructure can not support the required number of concurrent access due to bandwidth limitation
Usability	The KM tool has a poor level of usability. KM users find the tool too cumbersome or complicated for use
Over-reliance	An over-reliance of KM tools lead to the neglect of the tacit aspects of knowledge
Maintenance cost	The cost of maintaining the KM tool is prohibitively high. The management intervenes and terminates the KM project
CULTURE:- refers the characteristics or properties of the knowledge itself	
Politics	KM initiative project is used as an object for political maneuvering such as gaining control and authority within the organization
Knowledge sharing	Staff does not share knowledge within the organization due to reasons such as the lack of trust and knowledge-hoarding mentality
Perceived image	Staff perceives accessing other's knowledge as a sign of inadequacy
Management commitment	The management appears keen to commence the KM project. However, when problems emerged, commitment to the KM project is quickly withdrawn
KNOWLEDGE CONTENT:- refers the characteristics or properties of the knowledge itself	
Coverage	The content is developed fragmentarily from different groups of KM users. Hence, cross-functional content can not be captured
Structure	The content is not structured in a format that is meaningful to the task at hand.
Relevance & currency	The content is either not contextualized or current to meet the needs of the KM users. It can not help KM users achieve business results
Knowledge distillation	There is a lack of effective mechanism to distil knowledge from debriefs and discussions. Hence, valuable knowledge remains obscured

MANAGEMENT OF THE INITIATIVE PROJECT:- refers to the management of the KM initiative as a project	
User involvement	There is a lack of KM user involvement in the project. Hence, besides not being able to secure user buy-in when the project is rolled out, the knowledge requirements of the users are poorly understood
Technical & business expertise	When the project is implemented, it lacks staff with the required technical and business expertise to sustain the initiative
Conflict management	Conflict occurs among stakeholders of the KM team but there is no attempt to manage it
Rollout strategy	The KM project does not have a proper rollout strategy. Specifically, the lack of a pilot phase mean that many teething problems that can be mitigated at the initial stage are left unchecked
Project cost	The overall cost associate with the KM project is in excess of what is originally anticipated

7. Factors affecting to project KM initiatives

Based on the extensive literature review and keeping in mind above factors identified by the Chua and Lam (2005), another model of influencing factors to KM initiatives particularly taken in project-based company is being investigated in this paper. Model consists of six different factors (see figure 1). Let's have short explanation of each factor in terms of their meaning and context to KM initiatives in Project Company.
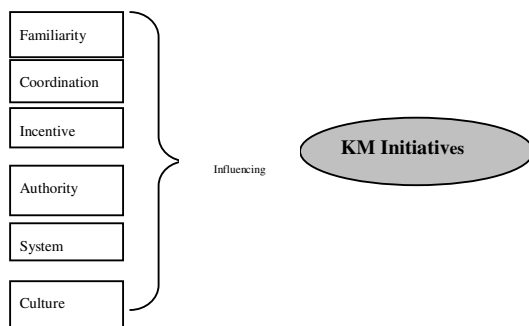

Figure 1. Project KM initiatives and influencing factors

Familiarity with KM

When project organizations start to talk about knowledge management initiatives, first the members within the organizations, in our case project members, need to be familiar and have clear strategy to contribute to KM (Pieris et al., 2003).

Familiarity may be focused on an internal state, such as a visceral feeling, or on external events by way of sensory perception. Familiarity provides the raw material from which one can develop subjective ideas about any thing. Employees's fimiliarity with KM is very important for the success of KM inititatives in any organizations, if employees are not fimiliar with the KM term most of the times KM initiatives fail.

Coordination among the employees/departments

Coordination is an act of combining or accumulating. In our case it may specifically refer to bringing together employees to adopt and share their best practices with each other. Coordination can be thought with socialization and combination factors, suggested in Nonaka's SECI model. In which we can devote internalizing as adopting knowledge and externalizing as sharing knowledge. Coordination factor has deep concern with success or failures of KM initiatives.   Therefore, a key element for an enterprise to be successful in pushing knowledge management is the process to encourage people to communicate and share their knowledge with others (Nonaka and Takeuchi, 1995).

Incentive for knowledge efforts

In management terms, an incentive is any factor (financial or non-financial) that provides a motive to people for a particular line of action, or counts as a reason for preferring one choice to the alternatives. Incentives can be classified according to the different ways in which they motivate agents to take a particular course of action. One, familiar and useful categorization divides incentives into three broad classes. Remunerative incentives (or financial incentives) are said to exist where an agent can expect some form of material reward especially money in exchange for acting in a particular way. *Moral incentives* are said to exist where a particular choice is generally considered as the right thing to do, or as above all admirable, or where the failure to act in a certain way is condemned as impolite. A person acting on a moral incentive can expect a sense of self-esteem, and approval or even admiration from his community; a person acting against a moral incentive can expect a sense of guiltiness, and disapproval or even isolation from the community. Coercive incentives are said to exist where a person can expect that the failure to act in a particular way will result in physical force being used against them or their loved ones by others in the community for example, by imposing pain in punishment, or by imprisonment, or by confiscating or destroying their possessions. Many scholars when focusing their researches on the key factors for the success of knowledge management have discovered that incentive program plays a major role in the activity of knowledge management (Davenport et al., 1998; Jarvenpaa et al., 1998; Liebowitz, 1999; Alavi and Leidner, 2001; Massey et al., 2002).

Therefore, the use of incentive schemes is required to prompt and support employees to manage knowledge. An employee can be either extrinsically motivated, as to achieve objectives that are excluding the work itself, or intrinsically motivated, as to grow personal satisfaction from doing the work (Amabile, 1997). Osterloh and Frey (2000) points out the significance of intrinsic motivation mechanisms to support knowledge creation and sharing in an organization.

Authority to perform knowledge activities
In organizations, power is often used interchangeably with the term "authority". However, their meanings differ: while "power" refers to the ability to achieve certain ends, "authority" refers to a claim of legitimacy, justification and right to exercise that power by the employees of the organization. Employees are the hub of creating knowledge (Holsapple and Joshi, 2001) because knowledge is kept within the individual, therefore, it is crucial to motivate them to create and share their knowledge but the most important thing for their motivation towards knowledge management is the way to let them authorize in order to share, utilize, and then convert data into information and information into knowledge within the organization.

System to handle knowledge
System is a set of interacting or interdependent entities, real or abstract, forming an integrated whole. Systems tend to function in the same way. This involves the inputs and outputs of material (energy and/or matter) that is then processed causing it to change in some way. The various parts of a system have functional as well as structural relationships between each other. System is the biggest KM enabler and in some cases a barrier, particularly when it is not properly managed or there is no existence of it, because always strong information technology helps communication in the business and information can be collected quickly, then acquired, and finally re-used in the knowledge intensive organizations. Ruppel and Harrington (2001) believe knowledge is a process instead of an asset, and hence in order to maximize its value an organization needs to create such supporting culture that helps the flow of knowledge.

Cultural support
Culture is the way of life of the group of people (Foster, 1962). In other words, culture is the combination of value, core belief, behavior model, and emblem. It represents the value system of the company and will become the employees' behavior norm. Culture is that complex whole which includes knowledge, belief, art, law, morals, customs and any capabilities and habits acquired by a man as a member of society (Tylor, 1977). So, it can be argued that culture is the key to people's way of living, performing tasks, fulfilling responsibilities and accepting changes. Every

organization's culture is an independent entity different than any other organization. Organizations normally analyze culture as collective programming of the mind which distinguishes the members of one human group from another (Hofstede, 1980). Culture concept becomes more important to understand in a firm before taking knowledge management initiatives particularly in project-based organizations because these always have professionals from different cultural backgrounds. As society and organization are constantly growing there is no assumption of culture applicable at all times and locations. Indeed, organizational culture has major constraining or facilitating effects on the knowledge creation within organizations. Because organizational culture is such a difficult concept to capture and describe, it is important to identify the basic elements of predominant cultures within organizations.

Many studies by the scholars in the field admit that culture is the key influence on knowledge management or the effectiveness of knowledge sharing (Chase, 1997). Organizational culture not just defines the value of knowledge but also explains the advantage that knowledge creates for the organization (Long, 1997). Therefore, being able to build a culture with easily accessible knowledge is necessary for management during the implementation process of knowledge management. Alavi and Leidner(2001) in their survey of the application of knowledge management show that the majority of the success of knowledge management in their experiences of knowledge sharing is closely related to culture.

8. Methodology
Data collection
The research sample comprised of project managers and project assistant managers level persons working on different kinds of projects in large, medium and small Finish project-based organizations. The survey questionnaire was electronically sent to 400 project managers and project assistant managers of project-based organizations, randomly chosen from the list published by the Finish Project Management Association in its website. A description explaining the study objectives was also included in the questionnaire first page. Moreover, three follow-up e. mails were sent approximately one, two and three weeks after the first e. mail. A total of 41 questionnaires were answered with a response rate of 10.25 percent. To recognize the potential barriers for KM initiative respondents were asked that to what extent do you think that factors like familiarity with KM, coordination among the colleagues, incentives for knowledge efforts, authority to perform knowledge, system to handle knowledge, and cultural support, are barricading KM initiatives in your organization or in particular project. All factors were rated by respondents on a five-point Likert-type scale, representing by 1 = strongly disagree and 5 = strongly agree.

Results

As we can see from table 4 that provides us with the result details of six factors, first column tells us the average, variance and weightage of all the factors. Average means here the aggregate response and it was calculated by averaging all 41 responses. Variance that means here the degree of dissimilarities and its purpose is to know the variation in the responses. Weightage was calculated by dividing the average response of one factor to the sum of response averages of all factors. Its purpose is to assess the degree of barricading influence of each factor on KM initiatives.

Table 4: Results

	Familiarity	Coordination	Incentive	Authority	System	Culture
Average	3	3,195122	3,634146	2,731707	3,390244	2,853659
Variance	0,85	1,260976	0,937805	0,80122	1,243902	1,378049
Weigtage	0,159533	0,169909	0,193256	0,145266	0,180285	0,151751

Figure 2 demonstrates the degree of barricading influence of all six factors on KM initiatives. As we can see left hand side in figure 2 all the six factors are presented and just parallel to each factor its degree of barricading influence is given.
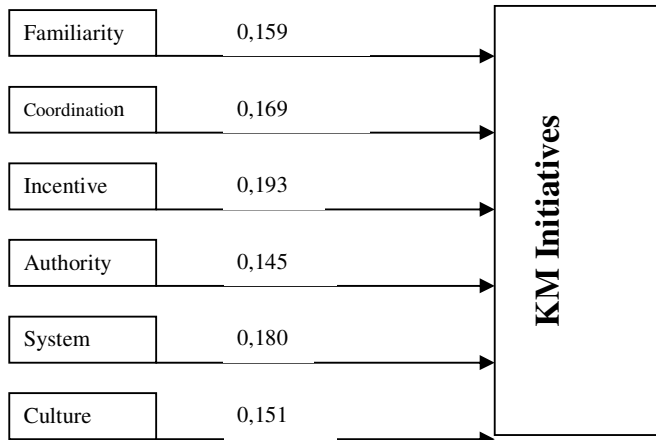

Figure 2. Degree of influence

Figure 2 (a): Degree of influence

Figure 2(a) is graphical representation of figure 2. At X axis of the figure six factors can be seen and at the Y axis we can see the degree of barricading influence.

9. Discussion of the findings

Results show that non-availability of incentives and non-presence of appropriate system, are the most significant barriers for successful KM initiatives in projects. Then inter-departmental coordination and familiarity with KM are the significant barriers. Authority to manage knowledge and cultural support fall in least significant category as barricading impact on KM initiatives in projects.

According to the findings of the study results 'familiarity with KM' as barricading factor for KM initiative is found as fourth significant KM initiatives barrier. It appears that employees with more KM familiarity actively take part in all the activities related to KM initiatives.

Findings show that 'coordination among the employees and departments' is third significant barrier for KM initiatives. It is justified that if there is proper coordination among the employees and in different departments there is higher success probability for KM initiatives.

As it is visible from the results that the 'non-availability of incentives' for employees against their knowledge efforts or steps, is first most significant barrier for KM initiatives. Study results advocate that if higher management arranges or introduces suitable incentives schemes for employees as return of their knowledge efforts then there will be great likelihood of being succeeded in KM initiatives.
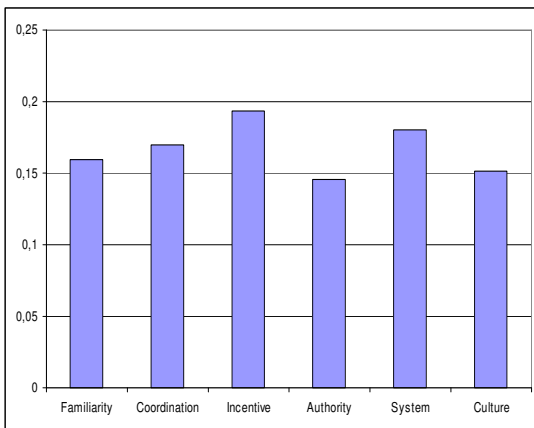
In accordance with the results 'authority to perform knowledge activities' is the sixth least significant barricading factor for KM initiatives. Justifying this result we can say that always knowledge is personal asset, in simple words it is personally possessed by the employees and to manage it they do need any external authority but of course external appreciation can encourage them to manage their knowledge more efficiently.

Study findings reveal that the second significant barricading factor is 'non-existence of a proper system' to handle knowledge in project organization. Most of the respondents have pointed out that there is no proper system in their organizations to manage knowledge efficiently. They claim that if there is appropriate knowledge friendly system in projects then KM initiatives can flourish rapidly.

Certainly system to handle knowledge is the essential instrument for knowledge management, because it enables the passage of experience among employees much faster. An information system can provide instant, integrated, or even smarter interface platform to make knowledge management much easier to employ.

Cultural support is the fifth least significant barricading factor identified in the results of this study of six barricading factors model. According to the findings, respondents have view of point that cultural support is not as significant barricading factor as other like incentives; system, coordination and familiarity are present in their organizations.

However, cultural support is also a fundamental tool for knowledge management, because only a culture of mutual trust and help facilitates the employees to depend and trust on the information provided by one another, thus raising the motivation for KM initiatives.

10. Implications for project managers

This paper puts forward the following implications for project managers initiating knowledge management practices within their projects. Firstly, formulate an attractive incentive package for their project members to motivate them towards increased effort to suggest ideas for new KM opportunities and launch a user-friendly system before introducing KM initiatives. Explicitly, creating an project network characterized by managerial support with striking financial rewards, and visible helping system to handle knowledge, that stimulate to contribute in knowledge efforts, to respond swiftly to new needs of the project members consequently driving KM intentions.

Secondly, arrange some seminars or workshops for the project members, which familiarize them with the basics of KM because without KM awareness employees can not contribute in it. Of course these seminars and workshops will not give them the real knowledge that they are going to manage because that knowledge they already possess. The seminars and workshops will only expose them with the fact that they have such a precious object---called knowledge that if you manage in a sophisticated way, can help to you and also to your organization. KM without coordination is only difficult but also impossible. So, project managers should always bring interdepartmental coordination for the facilitation of employees to manage their knowledge in a successful way.

Finally, they need to create such an organizational culture that should always encourage and help the project members to perform all the activities, which are compulsory for KM initiatives to be successful in the projects.

11. Conclusion

KM is foundations for competence development and now days all the companies are taking KM initiatives to be more competitive in this global era. This study examines the critical enablers—success factors and barriers—failure factors of KM initiatives in organizations, which have been pointed out by different researchers in recent years. Furthermore, it presents another model of such factors, which can influence KM initiatives, particularly when these are taken in projects environment.

The findings of the study revel that non-availability of incentives and non-presence of appropriate system, are the most significant barriers for successful KM initiatives in projects. Then inter-departmental coordination and familiarity with KM are the significant barriers. Authority to manage knowledge and cultural support fall in least significant category as barricading impact on KM initiatives in projects.

When project managers take KM initiatives, they must remember individual preferences for incentives, and about such a friendly system that can help the employees to manage their knowledge with out any trouble.

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