Critical Success Factors of Knowledge Management Systems

Implementation

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Abstract

To obtain the competitive advantage of knowledge management, firms have to recognize significant sources. For the organizations, implementation of knowledge management system (KMS) become a key challenge Aim of the study is to find out the relationship of employee training, leadership, performance management and information system infrastructure with knowledge management implementation. Implementing the knowledge management there are two popular ways one is knowledge base and second is intranet. For the competitive advantage recently the corporate leader realized that employee knowledge is critical resources for the organization so within the organization encourage employees to share their knowledge to each other. Researcher used regression as a statistical tool in this correlation study. In this paper author collected information through questionnaire. The questionnaire was distributed among 31 respondents. Moreover, on the basis of statistics the author concluded that infrastructure and leadership have significant relationship with knowledge management implementation.

Key Words: Knowledge Management, IT, Information System, KMS Implementation.

JEL Classification: **M370, D83**

Introduction

By the introduction of Information Technology with the internet, very rapid changes are takes place in traditional business models and organizations must need to continue to change their business environments to better compete in the market. If firms want to grab the maximum from the today's knowledge based economy they have to actively participate in the creation and best utilization of knowledge. Further concerns from industry and academia are made from the issue of surrounding knowledge management (Hung et al 2005). To enhance the organization performance, Knowledge Management is the significant tool which is majorly contributed towards firm's performance efficiency. There are few studies are empirically evaluated and validated the theories, models and tools of KM (Yoon 2008).

An organized group of information and data that business individual and enterprises create and maintain through procedures, rules and operations learned and practiced over time is called Knowledge (Mahdieh, Seyed Mohammad and Hossein 2011).

Knowledge Management is making the place very rapidly and all enterprises understand the importance of KM implementation. The key question arise that what is KM? According to the book of Knowledge Management written by (M. Awad and M. Ghaziri 2009) "Knowledge management (KM) is newly emerging, interdisciplinary business model that has knowledge within the framework of an organization as its focus. It is exist in many disciplines, including economics, business, information management, and psychology. It is the main competitive advantage for today's firm. KM involves people, technology, and processes in overlapping parts."

To obtain the competitive advantage of knowledge management, firms have to recognize significant sources. For the organizations, implementation of knowledge management system (KMS) becomes a key challenge (Davenport and Prusak 1998) (Hackett 2000). KMS can be enabling by its key which is information technology, for the supporting

of KMS design information system plays a vital role for the development and implementation in an organization. (Davenport and Prusak 1998) (Gold, Malhotra and Segars 2001).

At the present time knowledge based society has controlled by existing knowledge revolution. In upcoming society, the key factor will be higher education in the method of life especially in the era of knowledge-based education society. With the help of knowledge engineering gather information and input those information for the use in knowledge based computer system. Without the help of a human expert these system can solve the problems or answer the question. Knowledge engineers use different types of techniques to collect specific information. The best opportunity to improve the overall HEI performance is knowledge based system. Knowledge based system precise the knowledge for the support professionals to take an appropriate decision for the Sudanese higher education institutions. Furthermore, for the higher education institution these advantages are very few because of the several challenges facing in the use knowledge bases (Elshaiekh, Farah and Ibrahim 2012).

Knowledge management has evolved as substantial organizational and management challenge. The force input by the global knowledge-based economy and acknowledgement of knowledge as impalpable and strategic asset making the effective management of knowledge a priority (Choy 2005). People has acknowledge the importance of knowledge for centuries and considered by philosophers (Chaw, et al. 2003).

The knowledge management importance is seen as a competitive advantage in organizations. Leaders among the organizations are always in the search of the main factors of success. To implement the knowledge management system in their organizations this research designed to study and analyzing different critical successful factors

The position of KMS in organizations is clear and it is seen as a competitive advantage. Organizational leaders are always looking for the reasons and main factors of success in devising a knowledge management system and to execute it in their organizations.

CRITICAL SUCCESS FACTORS OF KMS IMPLEMENTATION

This research study analyzes 4 effective and successful factors in implementing knowledge management. Therefore, we are looking for effective factors on knowledge management system in order to observe the success of the system during system execution. The objective of this study is to identify main critical success variables and to identify the relationship between employee training, leadership strategy, Performance measurement, information system infrastructure and critical success factors of knowledge management system.

Literature Review

Performance Measurement

Culture based on beliefs, which give recognition for the organization, which fits to expresses for running and organization on day to day basis. Beliefs consists of the existence of the organization, the position of experts, performance standards, flair of leader, motivation and assessment,   direction of decision making, appropriate power (Schermerhorn et al., 1991).

In order to develop a knowledge implementation success there should be a general arrangement to present a knowledge friendly culture (Chase, 1997; Choi, 2000; Galagan, 1997; Greengard, 1998; De Long et al., 1996; Gupta et al., 2000; Jager, 1999; McDermott & Dell, 2001; Ribiere, 2001; Ryan &Prybutok, 2001; Skyrme&Amidon, 1997; Wah, 1999; Wild et al., 2002). Ribier (2001) states that the initially concentrated struggles on Information technology, today experts have been realized the importance of the easy aspect of knowledge management.

In the article (Jager, 1999) states that to follow the culture, shows how the organizations enable to understand the innovation and learning by boosting employees to shape up the organizational 0 to improve the beliefs for the customers.

Organizational culture dignifies as a fundamental part in dealing the organizational culture and for its revival (Pettigrew, 1990). In his book (Gooijer, 2000) defines that

knowledge management is a process of an organization as a major improvement or a change witnessed the participation to the organizational culture.

To know the major challenges in knowledge management is that it consists on a culture rather on technical (Forbes, 1997; Koudsi, 2000). According to the survey conducted by (Chase, 1997), 80% in 500 companies where the knowledge management system applied expose that existing organizational culture is a threat to implemented the knowledge based system. In contrast similar survey was conducted for 430 organizations discover that most of the respondents are familiar to their internal culture as a main barrier to transfer the effective knowledge and the change in the employee's behavior (Skyrme&Amidon, 1997).

Information System Infrastructure

According to researchers (Bhatt, 2001; Bontis et al., 2000; Choi, 2000; Covin et al., 1997; Davenport et al., 1998; Despress&Chauvel, 1999; Ghilardi& Mellor, 1997; Kotorov& Hsu, 2001; McCampbell et al., 1999; Moffett et al., 2003; Ryan &Prybutok, 2001; Savary, 1999) without the information system a nation that have effective and efficient knowledge management is ridiculous. For the organization knowledge management implementation is successful decision that's why mostly business managers believe in the power of computers and communication technologies.

A survey by Covin et al. (1997), information infrastructure is one of the critical successful factors for knowledge management that's why top executive of Canadian financial firms and US fortune firms view their information technology as a key resource. Furthermore, a survey reveals that respondents consider information infrastructure in their business are the most standard information technology tools for managing knowledge are text and document, relational databases, search engines, groupware, data warehouses and data sharing tools (Davis & Riggs, 1999).

Savary (1999) claims, for the organization to implement the knowledge management process the effective information system infrastructure is necessary. For collecting the knowledge information technology can provide an edge (Bhat, 2001). According to Bontis et al. (2000), structural capital contains the databases, organizational charts, strategies and process manuals and anything whose value to the company is higher than its material value.

Davenport et al. (1998) indicate two most critical factors for the successful knowledge management project, first one is based on desktop computing and communications foot the creation of information system infrastructure and the second one is utilization of network technology infrastructure such as Lotus Notes, Internet, and global communications systems for effective transmission of knowledge.

Despres and Chauvel (1999) stated that implementing the knowledge management there are two popular ways one is knowledge base and second is intranet. Ghilardi and Mellor (1997) also recommend that information resource-center staff should play a critical role in both these areas.

Information systems provided that much capabilities to the knowledge management that were not possible before (Boudreau & Couillard, 1999). To manage the knowledge systemically and actively the information systems help the organization in these areas (Storck& Hill, 2000). Computers knowledge cannot be stored if information technology is not used.

Employee Training

Effective employee contribution in research area and involvement in organizational decision shows the degree that employee share information, knowledge, reward and power throughout the organization. According to these Researchers Chong (2005), Choi (2000), Ow et al. (2001) and Davenport and Volpel (2001) for the success of KMS implementation employees' involvement is very crucial for the organization.

CRITICAL SUCCESS FACTORS OF KMS IMPLEMENTATION

For the competitive advantage recently the corporate leader realized that employee knowledge is critical resources for the organization so within the organization encourage employees to share their knowledge each other. For many KM activities employees must share the nature of knowledge creation and sharing to ensure the success of KM implementation and without the employees involvement it cannot be done Ow et al (2001).

According to the Davenport and Volpel (2001) for the effective knowledge sharing, employee's involvement is significant and it's also important for the knowledge sharing activities. The knowledge which is required for the successful knowledge sharing activities is possessed by individual employees.

Sallis and Jones (2002) stated that due to insufficient involvement of employee's knowledge sharing most KM strategies failed. People responsible for certain business process are now meeting to share and listen in communities of practice (COP). To carry out the similar activities these communities also share information with sister organization. Knowledge management is all about the people and must therefore start with them.

For any organization importance of the training should be well recognized and for those agents concerned with maintaining intellectual capital (Carneiro, 2001). For the supporting of the employees in creating knowledge, creating suitable network and engaging in double loop learning is the daily task for the human resource development in building of a learning organization Garavan et al (2000).

Greco (1999) claims that valuable knowledge and merits sharing are the key elements for the successful knowledge management. Unless people in organizations own the learning capability to use knowledge attractively, a well-built KM system cannot be directed at sustaining profitability (Hwang, 2003).

Moreover corporate university is one of the latest and well known training for the knowledge management, educational organizations established and run by companies to

provide total education to their workforce. Approximately 40 percent companies out of 500 are those that implemented such programs (Sunoo, 1998). To support the organizational learning efforts there have been more corporate universities have been established all over the globe. Thus, timely and appropriate employee training is one of the key success factors for knowledge management implementation.

Leadership

For the implementation of successful knowledge management system the role of leadership should be focused because it's essential for the implementation of technological change. Usually leadership includes managers, union leader, executive and professionals. The leadership is need to take decision with the help of professional consultants to implement the major technological change such as knowledge management system (Aurillaet all 2009)

To meet the organizational goal an organization need to redesign the organizational values and implementing incentives to motivate the participants. Flow of information must be in trustworthy way, it is a duty of leaders. Manger should evaluate the performance of the employee and rate them according to their efforts. Commitment of the leader is essential to bring changes in behavior, corporate culture and especially in knowledge management. (Choi, 2008) According to the Davenport knowledge management will not be applicable without the support of senior executive. Moreover, a strong leader is requiring for the implementation of successful knowledge management system. It also consists of a broad series of content and organizational boundaries so they should not only be skilled but he should also have the sufficient knowledge for the knowledge management. Till that time knowledge management cannot be forced to employees until the leader should have good skill and experience in change management.

Conceptualization

Based upon the studies done by researchers, the paper attempts to explore the critical success factors of knowledge Management System (KMS). Thus the Hypotheses that are derived from the researches done and shall be tested are:

H_{10}: There is no significant relation between Performance Measurement and KMS Implementation

H_{1A}: There is significant relation between Performance Measurement and KMS Implementation

H_{20}: There is no significant relation between IS Infrastructure and KMS Implementation

H_{2A}: There is significant relation between IS Infrastructure and KMS Implementation

H_{30}: There is no significant relation between Employee Training and KMS Implementation

H_{3A}: There is significant relation between Employee Training and KMS Implementation

H_{40}: There is no significant relation between Leadership and KMS Implementation

H_{4A}: There is significant relation between Leadership and KMS Implementation

Research Methodology

Research Design

This research is a correlation study in which researchers test the variables in order to find the important factors which are useful during implementation of knowledge management systems in Pakistan. The study is a field study which is conducted in non-contrived setting having co-relational type of investigation with moderate researcher interference. The study is based on quasi experimental design and its time horizon is cross sectional as primary data is

collected once. The experts of KMS in organizations are used as unit of analysis by researcher.

Sample Design

The sampling technique used by researchers in this study is purposive sampling in which we selected those respondents who have significance knowledge of Knowledge Management System Implementation. The researchers designed the questionnaire using rating scale for 4 different variables with 13 different questions. They circulated 31 questionnaires to different professionals who have experience in implementation of knowledge management systems of various organizations in Pakistan.

Data Analysis and Interpretation

Table 1: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.718[a]	.515	.440	.32568	2.079

a. Predictors: (Constant), Leadership, Performance, Infrastructure, Training

b. Dependent Variable: KMS Implementation

Durban Watson is 2.079 which shows that there is no any auto correlation problem in the data while R square show the model strength is 51.5%

Table 2: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.928	4	.732	6.901	.001[b]
	Residual	2.758	26	.106		
	Total	5.685	30			

a. Dependent Variable: KMS Implementation

b. Predictors: (Constant), Leadership, Performance, Infrastructure, Training

Significance value if 0.001 which is less than 0.05, which show that there is significance relationship between the variables

Table 3: Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.877	.686		1.279	.212
Performance	.034	.083	.058	.406	.688
Infrastructure	.427	.168	.384	2.545	.017
Training	.142	.090	.238	1.574	.128
Leadership	.155	.068	.331	2.263	.032

a. Dependent Variable: KMS Implementation

H1: Here, t-value = 0.406 (< 2.5). Hence, there is no significant relation between Performance Measurement and KMS Implementation

H2: Here, t-value = 2.545 (> 2.5). Hence, there is significant relation between IS Infrastructure and KMS Implementation

H3: Here, t-value = 1.574 (< 2.5).Hence, there is no significant relation between Employee Training and KMS Implementation

H4: Here, t-value = 2.263 (> 2.5). Hence, there is significant relation between Leadership and KMS Implementation

Conclusion

In this paper factors contributing to a successful implementation of knowledge based system is presented. Further this study investigating the factors confirming the effectiveness of knowledge Management Systems. This research suggests that there are four critical factors to a successful knowledge management implementation in organizations which are leadership, Employee Training, Performance Measurement, and Information System Infrastructure. The results of analysis stated that there is significant relationship between the dependent and independent variables. Statistical tool helps researcher to conclude that

Leadership and Information system infrastructure have significant relationship with implementation of knowledge management system.

Recommendation

It is projected that the factors proposed in this study would help an organization to better manage their knowledge management activities. Effective knowledge management can help any organization to influence core knowledge as means of building corporate intelligence, achieving innovation in process and products/services, effective decision-making, and organizational adaptation to the market for creating business value and gaining competitive edge. May the propositions made above provide an opportunity to the practitioners to undergo self-check to what extent the various critical success factors have been implemented.

It is recommended that before the starting the implementation of KM system leadership must be enough motivated to implement KM System and they have enough knowledge of knowledge management system. With the enough knowledge they should have much confidence that this system will be beneficial in long term. KM system implementation is strategic decision hence leadership needs to train themselves first to understand this innovative system.

Information System infrastructure of an organization is must accordingly to support knowledge management system. It is recommended that organization need to analyze the compatibility of their information system with latest technology which will boost organization efforts to maximize the use of knowledge management system but also it will help organization to implement knowledge management system with flexibility.

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