

The role of information technology in Knowledge Management(KM) strategies of teachers

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Abstract:-The role of knowledge as the key source for competitive advantage in enterprises has become a hotly debated topic. This study was to explore the role of information technology played in knowledge management(KM) strategies of teachers. We discussed “what did information technology in the enterprise support teacher KM strategies of teachers?” The study was to interview and investigate teachers in a seed of information school . Most of teachers indicated that using information technology was ‘Helpful’ in their KM strategies.

Keywords: Information technology, KM strategy;

1. Introduction

Managing knowledge is important because knowledge is one of the most strategic weapons that can lead to sustained increase in profits. Many researchers have investigated the issues about fostering knowledge [2, 8,9,12].

The knowledge management (KM) is a tool to be regarded as promoting the organizational potency and the efficiency .of KM strategies. This is very important in schools and companies. Knowledge plays an important influence in the success of any enterprises. This information is a necessary starting point for any KM leaders to act as strategic partners [7]. Tseng & Chen [5] indicate that using information technology website technology reach the goal of knowledge share.

Leonard-Barton [6] indicate that KM is purer than the information management. This is because the majority of knowledge may be classified, compiled and transformed through information system and progressively be spreaded out.

KM methods can be categorized according to two dimensions of management focus; the first focuses on explicit knowledge and, thus, emphasizes the capability to help create, store, share, and use explicitly documented knowledge, while the second focuses on tacit knowledge and emphasizes knowledge sharing by interpersonal interaction.

This study is to explore the role of information technology played in KM strategies of teachers. We discuss “What does information technology in

the enterprise support teacher KM strategies?” Teacher's knowledge includes the instructional document design, manufacture of teaching aids, teaching environment arrangement, teaching skills, and professional knowledge. Thus, we will search for the role of information technology in teacher's KM which we have mentioned above.

2. Knowledge Management(KM) strategies

KM focus is one of the most common considerations for establishing KM strategies. They can be described along two dimensions reflecting their focus [3,13].

One dimension is system strategy. The system strategy focus on codifying and storing knowledge via information technology. It also emphasize codified knowledge in KM processes and attempt to share knowledge formally.

The another dimension is human strategy. The human strategy focus on acquiring knowledge via experienced and skilled people. It emphasize dialogue through social networks and person-to-person contacts, and attempt to share knowledge informally. Table 1 summarizes the key features of system and human strategies. Table 2 indicates knowledge types and knowledge strategies.

Table 1 Features of system and human strategies

Strategy	Features
System	Emphasize codified knowledge in KM processes Focus on codifying and storing knowledge via information technology Attempt to share knowledge formally
Human	Emphasize dialogue through social networks and person-to-person contacts Focus on acquiring knowledge via experienced and skilled people Attempt to share knowledge informally

Source : Byounggu Choi, Heeseok Lee[1]

Table 2 Knowledge types and strategies

Strategy	Knowledge types
System	Tacit Create networks through IT (video conferencing, groupware, and virtual reality) Facilitate face-to-face meeting Explicit Codify knowledge using traditional information processing technologies Emphasize person-to-documentation
Human	Tacit Community of practice, discussion group, and help task Emphasize person-to-person Explicit Help to transmit newly created concepts Breakdown of concepts using face-to-face meeting (usually in Japanese firms)

Source : Byounggu Choi, Heeseok Lee[1]

Even though human strategies emphasize face-to-face meeting and person-to-person interaction, but human strategies with the aid of the information technology still may improve individual KM strategies. Thus, regardless of system strategies and human strategies, the information technology is 'Helpful' to the teacher KM strategies.

3. Information technology systems

Information systems can manage knowledge and see

its full benefits for an enterprise. It must see information systems from a KM perspective, which is a conduit for information or data and needs to be exploited fully in order to realise its full potential[7].

As what the correlation research pointed out, the establishment of electronic information bank (ie. information system) has the positive contribution regarding the KM [7, 11].

Oliver and Omari [10] indicated that the network science and technology expanded student's study field of vision and helped the student to obtain a more widespread information.

Wang & Ariguzo [11] indicate that such an information repository for KM must be organized into a domain schema.

Wedman and Diggs [4] indicate that creating technology-enhanced learning environments is a particularly challenging task when the environment includes a complex set of actual and virtual features.

The information system facilitates the factor of knowledge transformation, which provides the foundation for the knowledge sharing automation, centralized and the drive innovation procedure.

If we can penetrate the modern science and technology network to carry on the KM information platform. Then, affiliation by network in mechanism and effectively forming a society group of KM study creates teaching openness of the KM network.

The information and the communication technology in the school application growth are quite beneficial to provide the teacher and the student with entering the knowledge which is the important origin of the course content and the teaching material.

Choi & Lee [2] point out the system-oriented style invests heavily in IT to search for professional knowledge and communication among members by using technologies such as groupware, communication systems, and repositories. Table 3 indicates the content of information technology in teacher KM strategies.

Table 3 Content of information technology in teacher KM strategies

Strategy	Human strategies and System strategies
Content	Establishment teaching resources /Knowledge library/ On-line studies/Resources networks/E-mail/ Intranet resources/ Electronic bulletin board/Electronic books Distance learning/ Electronic document

4. Samples

This study sample is a seed of information school teachers in Kaohsiuang county, Taiwan. The seed of information school is provided with funding about Taiwanese NT \$ 400,000 to Taiwanese NT \$ 600,000, which goal is to improve instructional equipment of information. And these schools with funding must hold classes about how to operate information technology, computers, DVD instruction for their teachers.

5. Method

The study is to interview teachers in a seed of information elemental school. The point of interview is to explore the role of information technology in KM strategies of teachers. We adopt semi-structured interview to investigate 30 teachers in three elemental schools. The semi-structured interview are (1) Do you think whether information technology improves your professional knowledge of KM strategies? (2) Do you think whether information technology improves your instructional document design of KM strategies? (3) Do you think whether information technology improves your teaching skills of KM strategies? (4) Do you think whether information technology plays an important role in KM strategies? (5) Do you think whether information technology helps your KM strategies?

6. Results

Table 4 is the result from our survey and interview with teachers. Of the 30 faculty completing the survey and interview, at least 27(90%) indicated that they used information technology to improve their professional knowledge, instructional document design, teaching skills in KM strategies. They all indicated that information technology played an important role and it was 'Helpful' in

their KM strategies that they used information technology. The interview results are as follows :

"The organization establishes "the knowledge library" to reach applying the goal of the knowledge flexibly. And storing the knowledge concretely and systematically is easy for teachers to operate fast."

"The development of knowledge bank in teaching resources, such as written document, computer file is helpful to let knowledge easy to express. Therefore, the school may collect teacher's teaching files and put them in offices and the library for every subject. This will be helpful to pass by and spread the teaching material and the teaching experience. "

"By learning from campus internal network and internet, such as class website, on-line information bank, teachers can obtain the knowledge which is needed. It is the development of network technology connecting with information resource that helps teachers to implement the curriculum diversely."

By encouraging members to have the dialogue through information technology in organizations, it can expand the individual and the organization's knowledge.

7. Conclusion

Our research supports information technology, which plays an important role in KM strategies. And information technology helps teachers' KM strategies. Information technology and computers are mainly useful to receive processing material. According to the interview above, we suggest advices which are as follows :

First, the individual teacher with the aid of the information technology still may improve individual KM strategy of human strategies. The individual establishes appropriate knowledge belonging to his own file, which will protect and use some known knowledge.

Table 4 Result of survey and interview

Items Description	Survey results	Frequency (Percentage)	Interview tendency
1. Do you think whether information technology improves your professional knowledge of KM strategies ?	YES	28 (93%)	Individual and organization establishes "the knowledge library"/"on-line information bank".
	NO	2	
2. Do you think whether information technology improves your instructional document design of KM strategies ?	YES	27(90%)	School domestic capital materials storehouse electronic books.
	NO	3	
3. Do you think whether information technology improves your teaching skills of KM strategies ?	YES	27(90%)	
	NO	3	
4. Do you think whether information technology plays an important role in KM strategies ?	YES	30(100%)	
	NO	0	
5. Do you think whether information technology helps your KM strategies ?	YES	30(100%)	
	NO	0	
Total		30	

Next, organizational establishment will be spreaded out by the school network information bank, individual knowledge and the experience, which will let the organization members share system strategies.

Schools penetrate information and communicate science and technology joint and may encourage share of KM between the school and the teacher, These are advantageous information of science and technology to the teacher knowledge share in the educational application.

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