Framework for The Establishment of Knowledge Repository in Polytechnic Malaysia

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ABSTRACT

One way of retaining knowledge is through the establishment of a knowledge repository. Other than preservation purpose, the repository enables the deposited knowledge be retrieved for further usage. Polytechnic Malaysia a part of Institution of Higher Learning has been implementing knowledge sharing initiative without any guide or framework. Thus, knowledge sharing is carried impulsively not according to any standard or current best practice. In addition, the factors which influence the initiative were also not known. It is the objective of this paper to propose a conceptual framework for knowledge sharing initiatives which then lead to the establishment of a knowledge repository for the Polytechnic in Malaysia. Qualitative approach is adopted by means of reviewing the literature in the area. The Technology, Organization and Environmental Theory (TOE) used as a base for proposing the conceptual framework. Such a framework could serve as a guideline for planning knowledge sharing initiatives for the Polytechnics in Malaysia.

Keywords: Knowledge repository, knowledge-sharing, Polytechnic Malaysia

1.0 INTRODUCTION

Knowledge sharing initiative can lead to the establishment of knowledge repository which in turn serve as a strategic source of information.The practice of knowledge sharing is important to preserve knowledge apart from being a source of reference for the purposes of teaching and learning, research and collaboration (Iqbal et al., 2011). The initiatives are currently appear to be social phenomena and apparently an important process in any organization. But knowledge sharing requires a prerequisite whereby organization needs to possess a culture that create, manage and share knowledge (Dukiü & Kozina, 2012) which eventually form a repository of knowledge. Since knowledge is presumed as asset, it has to be managed to enable organization to be competitive and resilient. The implementation of knowledge sharing initiative in the context of Polytechnic Malaysia, poses its own challenges. Currently, there are 35 polytechnics in the country which can be divided into three categories such as premier, conversional and metro. Malaysian Polytechnics (*Politeknik Malaysia*) is a Technical and Vocational Education and Training (TVET) organization located in Malaysia.

These polytechnics provide semi-skilled professionals in the fields of engineering, commerce and hospitality at diploma and degree levels to meet the demand of the public and private sectors. TVET institutions have transformed the nature of information because students have to be prepared to face dynamic change, so as to achieve better knowledge comprehension parallel to the current needs of the industry (Hanimastura et al. 2016). Therefore, to eliminate problems and to maximise benefits, form of repository has to be well-planned and systematically implemented. This is to ensure optimum used of knowledge besides preserving it in the form of repository (Ayalew, Bekele & Straub, 2010) for future sharing (Sulisworo, 2012). Furthermore, the preserved knowledge can be explored and fully utilised to help meeting the industrial needs. Yet, factors influencing knowledge sharing initiatives are not revealed. Thus, this paper seeks to investigate the factors that influence such initiative comprising of Organizational Culture, Information and Communication Technology (ICT) Infrastructure and Internal Policy in an effort to establish knowledge repository. As a result, a conceptual framework for establishing a knowledge repositoryfor the Polytechnic in Malaysia is proposed.

2.0   PROBLEM STATEMENT

Knowledge sharing initiative in Institute Higher Learning (IHL) both locally and globally are under explored (Fullwood, Rowley & Delbridge, 2013) with particular reference to establishing knowledge repositories. Repository of knowledge is important because part of approach the improve standard of an innovation and performance of lectures depend on existing knowledge (Kumar & Rose, 2012). In addition, knowledge repository could minimize the problem of withdrawal and transfer of academic staff, which resulted in the loss of intellectual property as academicians bring together their skills and knowledge with them. In addition, studies done thus far on setting up of repositories in IHLs only focus on the aspect of the need and the advantage of having repositories (Naiwen & Xin, 2012) and also the communication needs that interconnect the repositories. A study on knowledge sharing initiative investigating the factors influencing the initiative is deeming necessary. The finding of the study is then used to establish the formation of a repository which help in enriching the knowledge of the academic staff in the Polytechnic Malaysia and at the same time helps preserving the knowledge that the institution possess.

3.0   DEFINITION OF CONCEPTS
Knowledge Repository

Knowledge repository is a warehouse for storing knowledge that can be used as a strategic source (Sulisworo, 2012). Organizations, especially IHLs, should develop knowledge repositories to encourage knowledge sharing among its employees, particularly academic staff (Choubey, 2011). Knowledge repository will be able to gather knowledge from among lecturers (Pidun & Felden, 2013) and can be used for learning, teaching, research and publishing purposes. Apparently, forming a

repository needs support from the management especially for coordinating purpose.

Knowledge Sharing

Knowledge sharing occurs through the process of exchanging experiences, skills, events and thinking that is agreed by both the sender and the receiver (Wahab et al., 2009;Yassin, Sahari & Salim, 2011). Knowledge Sharing is also an important process in knowledge management. Knowledge sharing is important to improve performance, save time and operating costs, encourage employees to be creative (Iskandar et al. 2011) and increased the level of knowledge application especially in the teaching and learning process (Hafiza & Dang, 2012). Hence the practice of knowledge sharing is important in helping organization's objectives. In this study, sharing knowledge is referred to sharing notes, tests, quizzes and projects among lecturers in universities.

4.0   FACTORS INFLUENCING KNOWLEDGE SHARING

Information and Communication Technology (ICT) Infrastruture

Network, software, hardware and internet facilities are part of the ICT infrastructure that supports knowledge sharing activities. ICT helps knowledge sharing activities through the process of storing, circulating and adding value to knowledge (Dukiü & Kozina, 2012) either formally or informally (Ismail, 2010). Therefore, ICT encourages lecturers to share knowledge and subsequently support the process of knowledge sharing (Hu, 2010), which crosses the geographical, functional and sectional borders.

Organizational Culture

Organizational Culture is organizational environment that portrays the behavioural patterns of an individual that can influence the sharing of ideas and knowledge (Ismail, 2012). Activities in the organizational culture of sharing knowledge include conferences, discussions, meetings, and questions and answers. Hence, the lecturing community should create an organizational culture to encourage knowledge sharing activities (Lee & Roth, 2009). The organizational culture factor is one of the factors that play an important role in knowledge sharing initiative because it influences individual behaviour towards knowledge sharing activities. Organizational culture also exploits and supports the source of knowledge for knowledge sharing process from expert employees to new employees.

Internal Policy

Internal Policy is a fixed plan that is a guide to taking consistent action in order to achieve organizational objectives (Samuel & Certo, 2006) and drafted in the interest of employees and accepted as a practice. This policy can safeguard employees and share knowledge on plagiarism, accreditation and fixed assets (Paul, 2012).

5.0 KNOWLEDGE REPOSITORY IN INSTITUTION OF HIGHER LEARNINGS

For materialising a well-educated community, technical vocational education and training (TVET) institutions are responsible in providing skilled workers, in line with the needs of the industry education. Polytechnic Malaysia is a part of the Institution of Higher Learning (IHLs) has grown and developed as matured institution that lead TVET at the national level. Therefore, Polytechnic education should be a continuous effort in making it a preferred alternative academic education. Polytechnic education began with the establishment of Ungku Omar Polytechnic in 1969 under the United Nations Development Plan. To further reinforce the Polytechnic education and training, the Polytechnic Transformation comprising the following four thrust: (1) enhancing Polytechnic towards becoming the student's choice, (2) development of programmes and research in niche area, (3) equipping Polytechnic teaching personnel and support staff with high skill and competency and (4) development of an excellent work culture and image. In its endeavour to meet the growing demand for skilled human capital today, the Ministry of Higher Education is constantly upgrading the country's polytechnic system and has plans to transform polytechnic education to be more attractive to students. To fulfill these needs, the levels of knowledge of TVET intuition educators need to be enhanced from time-to-time to improve the quality of technical graduates. According to Pang (2011) the initiatives in Malaysia are Scaling up private TVET training provision, Rationalising TVET provisioning to meet economic & employment needs and Re-branding of the TVET sector to mainstream and improve perception of TVET.

IHLs are centres of knowledge that can excel through the existence of knowledge sharing initiative, especially among lecturers (Sulisworo, 2012) which take the form of discussions, conferences or publications (Cheng, Ho & Lau, 2008). However, the knowledge sharing initiative might not materialize if the culture of sharing is not instilled (Cheng et al., 2008). Hence, the management of Polytechnic Malaysia need to plan the knowledge sharing initiative in order to encourage the practice At the same time, the initiative has to be in parallel with the mission of the IHLs in ways such as increasing the performance, increasing competitiveness and improving educational services (Kumar & Raduan, 2012) and fulfilling the industry's peripheral needs (Zwain et al., 2012). Besides that, the knowledge sharing initiative can also overcome the problem of lost knowledge due to retirement (Zawawi et al., 2011) and transfer of lecturers, besides supporting the formation of the repository. Earlier studies on knowledge sharing in Polytechnic Malaysia had studied factors that influenced, impeded and contributed towards the knowledge sharing initiative.

There are several studies on factors that influence knowledge sharing practice. The factors that have been studied are organizational culture,

the role of leaders and utilization of ICT (Wahab et al., 2009) and attitude, trust and rewards (Ayalew et al., 2010). Whereas, the value of knowledge, knowledge ownership, abuse of knowledge, perception, ethics, commercial, social influence and the facilitating role was studied by Patel & Ragsdell (2011); profile, leadership, culture, structure, utilizing ICT, infrastructure and knowledge management system by Agarwal et al. (2012) and estimated effort and estimated performance by Nistor et al. (2012). Meanwhile, Alwi, Bakar & Hamid (2008) had studied factors that contributed to the knowledge sharing initiative, such as knowledge sharing practices that include organizations, culture, technology and communications. Past research had also grouped these factors as the above into three categories, which are technology, organization and individual. The study that focused on individuals was carried out by Nistor et al. (2012); while organization and technology was studied by Wahab et al. (2009); individuals and organizations by Ayalew et al. (2010). Studies that had focused on all three factors (individuals, organizations and technology) were carried out by Alhammad, Faori & Husan (2009); Agarwal et al. (2012); Rahab & Wahyuni (2013) and Fullwood et al. (2013).

However, there was no specific study focusing one factor that had influenced the knowledge sharing initiative among lecturers in IHLs, which finally lead towards the formation of knowledge repository. Hence, studies on knowledge sharing need to be explored further because each initiative differs in its focus (Ismail, 2012). Forming the repository is important as a long-term strategic source (Naiwen & Xin, 2012) in tandem with the status of IHLs as a warehouse of knowledge (Cheng et al., 2008).

6.0   THEORETICAL FRAMEWORK

The theoretical framework used to develop the conceptual framework in this paper is the technology, organization and environment (TOE) framework introduced by Tornatzky and Fleischer in 1990 and adapted from the 'Theory of Organizational Contingencies'. The TOE framework is suitable for use in research which is based on organizations (Arpaci, Yardimci & Ozkan, 2012) and performance indicators (Savita, Dominic & Ramayah, 2012). This framework has three contexts: technology, organizational and environmental, as shown in Figure 1.1 (Awa, Harcourt & Emecheta, 2012; Angeles, 2013). The technology context includes infrastructure, processes, technique and the latest ICT expertise (Tornatzky & Fleischer, 1990; Pan, 2005) that emphasises on making decisions related to ICT. While the organizational context includes size, scope, centralization, official function, management structure, quality of human resources, decision-making methods, communication, intentions, planning and structure (Tornatzky & Fleischer, 1990) that leans towards organizational characteristics (Arpaci et al., 2012). In addition, the environmental context comprises firms, suppliers, employees, customers, competitors and government agencies (Tornatzky & Fleischer, 1990).
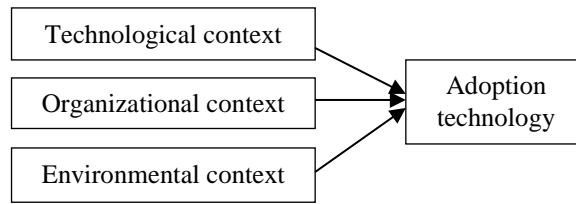
Figure 1.1: The TOE Frameworks

7.0   KNOWLEDGE REPOSITORY CONCEPTUAL FRAMEWORK

Analysis on past models and knowledge-sharing frameworks has found that the framework emphasises on two factors. First, there is a need to develop a repository, and second, the different factors that influence knowledge sharing initiatives. The factors that influence knowledge sharing are such as ICT infrastructure, organizational cultural and policy internal. Meanwhile, the process represents the knowledge-sharing activities and the output represents repository formation. The TOE framework is chosen to base the development of the conceptual framework since it suits the factors understudied the factors that influence knowledge sharing, are indeed congruent with the TOE framework.
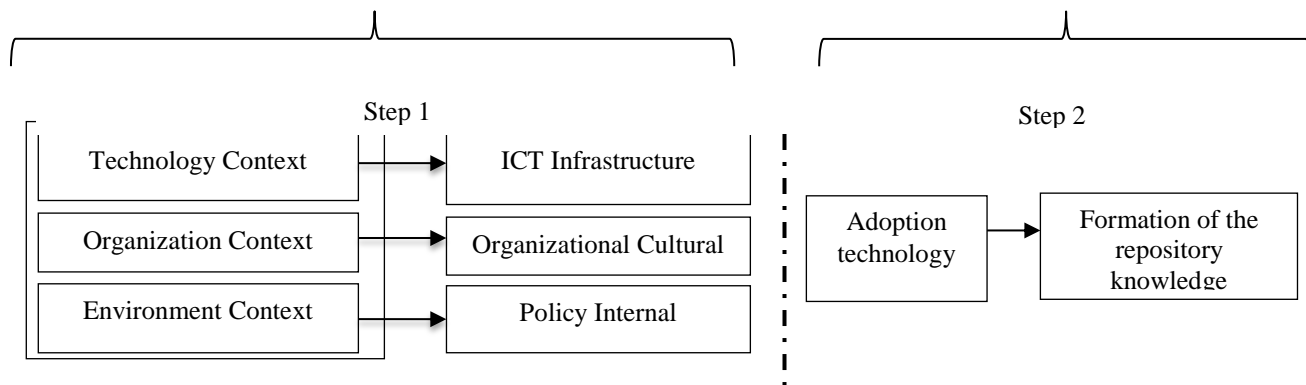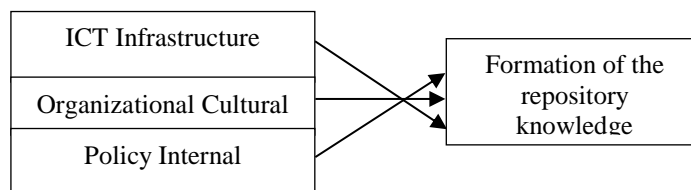

Figure 1.2: Framework Development Process

Figure 1.3: Conceptual Framework for the Establishment of Knowledge Repository

In the context of this study, the information system is in the form of the repository while knowledge management represents the knowledge sharing initiative. The conceptual framework development process is shown in Figure 1.2, while Figure 1.3 is the final form of the suggested Conceptual Framework for the Establishment of Knowledge Repository.

8.0 CONCLUSION

The development of a conceptual framework for the establishment of knowledge repository in this study has emphasised on two components - the factors influencing knowledge sharing and the need to establish the repository. Studies had shown that lecturers at the Polytechnic Malaysia do practice knowledge sharing among them. However, such endeavour is carried out without any guideline. Hence, it is timely for the management in the Polytechnic Malaysia to set strategy determines the direction and states the objectives of the endeavour clearly. The framework is deem necessary since there is as yet no such framework available.

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