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Abstract - IslamGRID was developed to collect, preserve, disseminate and promote knowledge of Islam to all Muslims globally, whether in the administrative, industrial and commercial. With the advent of Information Technology and the increase of the amount of information that organizations have to deal with, there is a requirement to put strategic process in place to ensure the effective management of knowledge. This case study research looks into 3 main areas of a Knowledge Management (KM) System (KMS) (i. People; ii. Process; and iii. Technology) and their relationship, which might affect the effectiveness of the IslamGRID to the Islamic community (Ummah). The application of these areas would be for JAKIM, JAIN, Muslims as well as non-Muslims.

I. INTRODUCTION

Knowledge culture is part of Islam. Since the life of the Prophet (PBAH), this culture has been given a priority through the implementation of the concept of Iqra as Allah said in the Qur'an "Read: In the name of thy Lord who created" (Quran 96:1). The correct understanding of this concept in the Muslim community has contributed to the formation of the Islamic Civilization. The emergence of this civilization is partly due to the proper KM by building higher learning education institutes in Al-Andalus (present day Spain), Bahgdad and Al-Azhar. Furthermore, publishing a variety of books in various areas of knowledge such as 'Thya' Ulumuddin' by Imam Al-Ghazali. Also, other indicators of proper KM were the support of the Muslim leaders and intellectuals in the knowledge movement which lead to an advanced and developed Ummah. According to Ali A.Y. [20], "the civilization of Islam witnessed management as an important practice affecting the development of knowledge and Islamic Da'wah, wise management of the knowledge has greatly contributed to the betterment of the Da'wah Islamiyyah".

Department of Islamic Development Malaysia or JAKIM is the lead Malaysian agency managing the affairs of Muslims at the federal level as well as secretariat to the national council for religious affairs. JAKIM was established in 1969 under the instruction of Conference of Rules (Majlis Raja Raja) during their meeting on the 17 October 1968 to safe guard Islamic

matters at the federal level. In hieratical it reports to Ministry of Islamic Affairs at the Prime Minister Office under the preview of Conference of Rules. JAKIM perform three (3) main functions; i. Formulation and standardization of Islamic Law. ii. Adjusting and streamline the administration of Islamic affairs iii. Adjustment and development of Islamic education system. JAKIM uphold five values to achieve the vision set, namely: i. Jati Diri (Sense of belonging) - Having a sense of belonging in the Liberated to serve religion, race and creed of the country based on the Sunnah Wal Jamaah. ii. Amanah (Trust) - Carrying out their duties with great commitment, dedication and sense of responsibility in accordance with the undertaking that has been affirmed. iii. Kerjasama (Cooperation)- Energies, knowledge and experience of the spirit teamwork abilities to achieve its vision and mission. iv. Iman, Ikhlas, Integriti (Faith, Sincere, Integrity) -Serve with full faith, honesty and integrity through systematic work ethic, efficiency and consistency in order to produce excellent impact. v. Mardhatillah - Work is based on Shariah principles to elevate nation to achieve the pleasure of Allah SWT.

While many Islamic institutions and organizations in Malaysia, such as JAKIM and Islamic Understanding Institute of Malaysia (IKIM) have been using ICT to facilitate their work and transactions, however, the matter of cooperation and coordination among those Islamic institutions and technological-based organizations like Mimos Bhd (MIMOS), National ICT Security & Emergency Response Centre (NISER) and Malaysian Science and Technology Information Centre (MASTIC) can still be questioned. There should be some collaboration projects among these organizations in developing such systems which can enhance the quality of Islamic activities [13].

KM can be considered a practice to accomplish process about knowledge, process for knowledge, and process from knowledge that aims to improve the organization's operations [2]. Thus, it is important for KM to have an overall perspective of all activities within the organization and qualify these activities whether they produce knowledge that could help the organization to become a learning organization.

KM can also be considered as a technique to integrate knowledge processes of sharing, distribution, creation and comprehending with the organization [6].

Based on these two definitions of KM, it can be said that KM places an important role on the process itself. And KM Process is very critical for organizations to be successful, especially in the present day environment where knowledge is considered a competitive advantage and critical to the survival of the organization.

This paper will describe some of the existing KM Process Models, discuss the human role in KM process, and propose a KM Process Model for IslamGrid Portal of JAKIM. JAKIM is a pioneer in KM implementation within the Malaysian public sector.

The basic framework of KM comprises of four extensive concepts that are knowledge acquisition, knowledge storage and organization, knowledge dissemination and knowledge application.

According to Jarjis and Fauzan [8], year 2020 will be the point where Malaysians move towards becoming a developed nation. Religion is one of the factors that contribute to Malaysia's current stability. The first of the five national principles of Malaysia stresses on 'believe in God' (Malaysia Rukun Negara, 3).

JAKIM has outlined the development of Islam in Malaysia as one of the objectives to improve the quality of human life. It covers both the aspects of individual and social quality. It ranges from morality, attitude, and behavior to the quality of a lifestyle such as economy, social, politic and so forth. From this underlying view, Da'wah in Islam can be perceived as a tool to expedite the effort of Malaysia in becoming one of the developed nations [8].

II. KNOWLEDGE CONTENT

The knowledge in view can be considered as either tacit knowledge or explicit knowledge, which are mutually dependent. Tacit knowledge forms the necessary background to create and understand explicit knowledge [14]. The importance of tacit knowledge is that it forms an overlap in the underlying knowledge bases as required for one (person or organization) to understand the other. This is referred to as "shared knowledge space" [7].

Once knowledge is established or acquired they need to be stored appropriately as knowledge storage, organization and retrieval are important [16]. This is supported by empirical studies which show that organizations develop, acquire and also lose knowledge [3],[5].

A. e-Fatwa Portal Establishment

"I really hope the publication of e-Fatwa can help our society to understand more about the fatwa and fatwa produce by our Muslims Scholars and be close with them. From this effort, I hope our society can discuss openly the solution of current issues nowadays that suits to the doctrine of Islam which is very comprehensive and up-to-date." (Minister, Department of Prime Minister).

JAKIM website describes e-Fatwa as a web-based application that provides information on published juristic acts that have been endorsed by all the states in Malaysia, and is,

managed by their ICT Service Unit and updated by their Technical Committee consisting of officers from the Departments of Mufti all over Malaysia, since year 2001. The existence of e-Fatwa portal provides the Islamic information on the net. It was launched formally by Malaysian Prime Minister, Dato' Seri Abdullah Bin Hj. Ahmad Badawi during the Meeting Between Prime Minister with Muslim Scholars on 23rd December 2003 in Kuala Lumpur. It had over about 200000 guests by August 2008 [10].

"I hope this e-Fatwa can be a reference to the society to seek for certain fatwa according to certain problems. Thus, with the existence of e-Fatwa can develop more on knowledge activities." (Director General, JAKIM)

B. Technology in KM Initiatives

From the KM discussion, technology is so closely linked to KM on the 'System' aspect that one could not easily distinct both apart on any initiatives in building a KMS. An IslamGRID KM is a term that describes the creation of Islamic related knowledge repositories, where the ability to improve knowledge access and sharing as well as communication through collaboration could be established. The technology discussion focuses on the IT based social engineering disciplines, where the advancement of infrastructure, network, intelligence capabilities, processing data into becoming information and collaboration media are deemed essential. It addresses on how best to acquire and disseminate knowledge; in an effective manner, which sometime includes ways in persuading people to share and access knowledge through the system or in a certain cases ways in enforcing the system to them.

Following are the focuses technology enablers of IslamGRID KM information transformation and distribution.

- building user interaction and participations
- technology advancement, innovations, advocate users and winning competitiveness
- reducing cost, time frame and innovative ways of information distribution.
- quality, accurateness and Business Intelligence data.
- productivity and effectiveness.

Years ago, when people talked about using KMS for collaboration in an enterprise environment it usually meant transferring files by email, public websites or shared storing devices. Yet even when people invested a significant amount of time to maintaining such systems it could be difficult for others to find useful documents, or even know whether useful documents existed in the first place. The reality is that people still rely on limited personal connections and memories where the best strategy available when searching for a document is to ask around to trying to figure out who might know where to find those useful documents or information. Countless information websites and document repositories under this context suffered from neglect or were abandonment simply

because they were so impractical and couldn't gain such religious involvement from users.

For such IslamGRID KMS to be effective, it must maintain a critical mass of active participations, a mass adaptation and engagement, thus allowing it to be self sustaining or risk becoming ignored and thus irrelevant. Failures in persuading Muslim communities to use and share information within IslamGRID KMS would result in making it a "KM Graveyard", a term used by industries to refer to a technological driven KM project which failed due to lack of user participation or involvement..

Stenmark [17] defines knowledge reality as a social construct; it can only be defined in practice, in the activities of and interactions between individuals. This means that design of IslamGRID KMS must be based on an understanding not only of information architecture and structure, but also of the situation where the user develops the information needed, and analysis of the usage of the same information once it has been obtained and interpreted by the user. The internet social sites such as Facebook, Friendster and ebuzz affect the interaction between information and knowledge in today's organization by increasing the consumers' access to information and the opportunities for producers to reach a larger audience. Hence by offering workflows and coordinating routines as well as support for more informal collaboration such as shared whiteboards and project areas, the intranet provides means for organizational members to work together. When engaged in collaborative work with peers that share your objectives and understand your vocabulary, the common context necessary for knowledge sharing exists. Actions such as information creation, information seeking, and information interpretation can successfully be performed in these environments.

C. Technology as Enabler

Technology is a KMS enabler and, could enable JAKIM by providing platforms for connecting the Ummah within various topics or specializations and creating Knowledge Communities within IslamGrid. Social media technologies such as Facebook, LinkedIn, Twitter and others have gained millions of participations across races, beliefs and socio-economy, representing the most rapidly growing KM technology vehicle for knowledge sharing in the current Islamic world today.

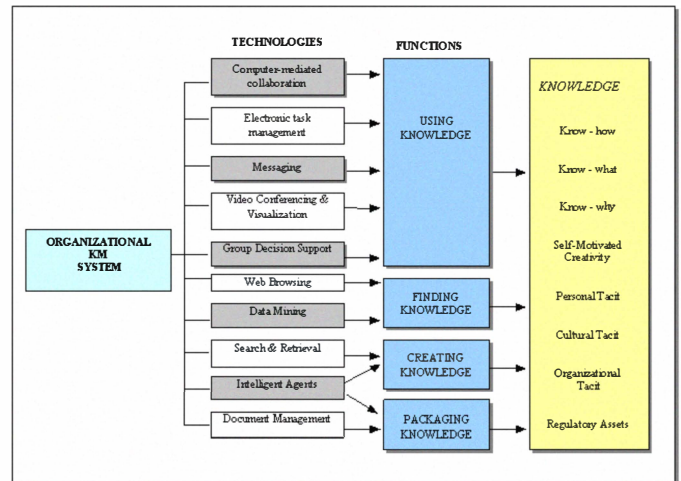


Figure 1. A Framework For KMS Implementation, Rusli et. al.[15]

Marianne and Mile [11] prove that several aspect where IT could focus in giving better impact to the KM society and shows that KM contributes to innovation performance when a simultaneous approach of "soft HRM practices" and "hard IT practices" are implemented.

Rusli et. al.[15] define technology perspective within KMS using the proposed framework of Meso and Smith [12], consisting of three components: technology, function and knowledge as shown in Figure 1. It presents how technology becomes the KMS enabler by assisting the processes for acquiring, organizing, disseminating or sharing knowledge among people in an institution.

D. KM Process Models Review

Of the many proposed models which describe the KM process, this paper initially considered three models from which the most suitable model was chosen.

The model proposed by Lai and Chu [9], divides KM Process into six parts or stages: Initiation, Generation, Modeling, Repository, Distribution and Transfer, Use and Retrospect. The Initiation stage is the stage in which the requirement for the knowledge is defined and described. The Generation stage identifies the existing knowledge within the organization, its owners, key personnel, and imports knowledge external sources or from internal learning sources. The Modeling stage analyzes and justifies the produced knowledge from the generation stage. The Repository stage creates a storage for the explicit knowledge and improves the sharing capability. The Distribution and Transfer stage manages knowledge distribution to all individuals in the organization beyond the KM team. In the Use stage, the tangible value (e.g. profit increase) of the knowledge is clearly conveyed and explained. And finally, the Retrospect stage studies the whole process and re-examines it to find areas of strength, weakness and space for improvement.

Alavi and Leidner [1] propose a KM process that consists of four stages: Knowledge Creation, Storage and Retrieval, Transfer, and Applications. The first stage, knowledge

creation, focuses on integrating new sources of knowledge with the existing knowledge within the organization. The storage and retrieval stage indexes knowledge and stores it for later retrieval. Knowledge transfer stage creates the appropriate communication channels and improves the access speed to the knowledge sources. The last stage is the application in which the knowledge is applied across the organization.

Bouthillier and Shearer [4] proposed a KM Process model of seven parts: Knowledge Identification, Knowledge Discovery, Knowledge Acquisition, Knowledge Creation, Knowledge Storage and Organization, Knowledge Sharing, and Knowledge applications. The first stage, Knowledge Identification focuses on understanding the knowledge needs of the organization. The Discovery stage analyzes and search for internal knowledge within the organization. The Acquisition stage, searches and imports knowledge from external sources and incorporates it in the internal knowledge within the organization. New knowledge is created and combined from all sources, internal or external, in the creation stage. In the Knowledge storage and organization stage the organization will aim to develop a better organization and properly store the created knowledge. Knowledge will be disseminated to all individuals in the organization in the knowledge sharing stage. Finally, the knowledge is applied and the success of KM is gauged based on successful is the application.

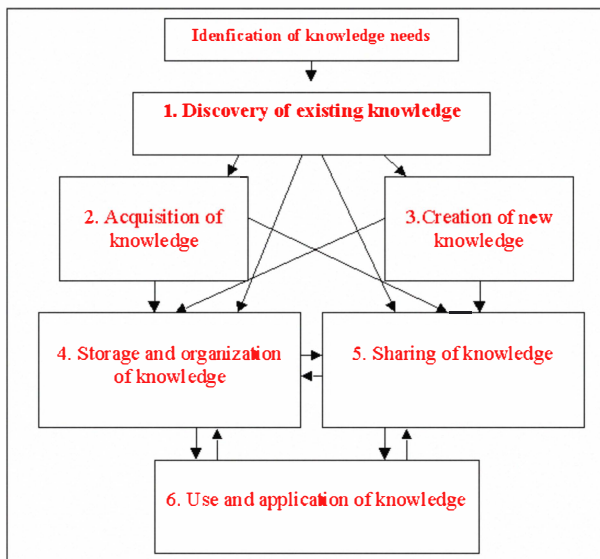


Figure 2. Bouthillier and Shearer KM Process Model [1]

III. PROPOSED KM PROCESS MODEL FOR ISLAMGRID & JAKIM

Our team believes that Bouthillier and Shearer KM Process Model [1] is a suitable model for IslamGrid project. We can breakdown the model to activities that can be implemented in the project as follows:

Stage 1: Knowledge Identification

JAKIM, the federal government, in collaboration with JAIN should come up with a clear and detailed overview of the knowledge needs related to Islam and Shariah of the Muslims in Malaysia and globally. This overview picture will provide guidance for the project team in the following stages and it will ensure that the project team understands the importance of the project.

Stage 2: Knowledge Discovery

After identifying the knowledge needs, the project team should start tracing and searching for knowledge sources that could provide enough knowledge to meet the required needs. Firstly, the project team should start searching within JAKIM. JAKIM as the federal agency for religion matters, most likely, have significant knowledge and access to a larger set of knowledge available locally and internationally. Also, by identifying the sources of knowledge within JAKIM first, the team will gain a better understanding of what is needed from the JAIN or international sources that could complement JAKIM's knowledge repositories.

Stage 3: Knowledge Acquisition

After identifying knowledge sources within JAKIM, the team must now look for external knowledge sources to complement that in JAKIM. The search should start at a state-level and the project team must ensure that there is a clear and detailed list of what is needed from the JAIN and get the support from the higher level of government. It will be a difficult phase considering that there is a possibility for some states to refuse collaboration and it could be discouraging to the team. However, we believe with the proper communication and the support of federal government the team can achieve the goal.

After knowledge is collected from JAKIM and JAIN, the team must study the knowledge. The team must analyze the produced knowledge and find any gaps that can be filled by international sources or by well-known experts in Islamic matters. After all the gaps are filled, they can consider the knowledge as successfully acquired.

Stage 4: Knowledge Creation

After the successful acquisition of knowledge from the internal and external sources, the project team should combine knowledge from all these sources and create the new knowledge source that will be stored in IslamGrid system. The knowledge must be cleaned, proofed, properly formatted and prepared to be stored in KM database in IslamGrid.

Stage 5: Knowledge Storage and Organization

In this stage, the produced knowledge will be organized and stored on IslamGrid's databases. The knowledge must be indexed and properly mapped to its sources so users can refer back to these sources if required.

Stage 6: Knowledge Sharing

In this stage, the stored and organized knowledge is made public through the website. The team must develop the interface through which the public will interact and access the knowledge in this project.

Stage 7: Knowledge Application & Use

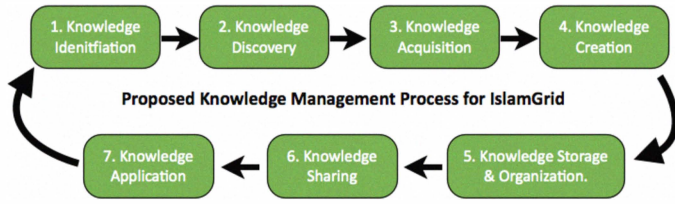


Figure 3. Humans effect in KM processing

The knowledge created through all previous stages will be used and applied by the public. The project team must realize this is not the end of the project. There must be a continuous process for searching for new sources of knowledge and analyzing the existing knowledge in order to find any new gaps that need to be filled. We can illustrate the proposed KM process phases for IslamGrid Project as show in Figure 3.

Limitation and Challenges

In Malaysia there are differences of Islamic implementation at Malaysian states due to the task in implementing Islamic law lies in under the jurisdiction of the states as provided in the Federal Constitution, for example the process of getting Islamic marriage in Perlis and Selangor are different. Thus to ensure consistency on the enforcement of Islamic laws, coordination efforts are one of the biggest challenge for JAKIM. KM is seen as the opportunity for the medium to collaborate those within the single platform. Yet the fact is still that JAKIM staff capabilities are limited to its jurisdiction and only with the collaboration and commitments between all states for KM implementation, the efforts to establish an IslamGRID knowledge management portal website would be a success.

Institution in managing Islamic affairs such as JAKIM whether at the federal or states is recognized as an important institution in the development and advancement of Muslim in Malaysia. However, claims are made that the service delivery to the mass and public are not effective. This is due the facts that there are still behind in terms of stability of the organizational structure, human resources and financial skills of its workforce. This is because the human resource for such agencies needs to be skilled in two areas, namely management and the field of religious sciences. KM initiative is seen as the opportunity to improve such delivery to public by sharing knowledge and resources between all states while coordinated by federal. Given example if the resources of IT skills could be put in together in developing a central repository portal that addresses all states requirements, there will not be any work redundancy between states and federal and better system delivery could be delivered. Currently JAKIM admits they do

not have sufficient IT skills workforce in managing all the initiatives being driven by ICT unless commitment and collaboration or workforce between states could be established.

Many organizations look at KM Process as a methodical, systematic way of managing resources, time, and money. However, the human element of project management is often given lesser importance and the metrics of cost and time take precedence. Human involvement has significant impact on the KM development process; they could be ranged from team members or application testers to end users and decision makers. While it's important to understand end user needs and requirements most critical decisions are been taken by the Project Leader, in most cases a high ranked person in the company. In the case of JAKIM there here are some areas they need to improve to uplift the project success:

- Involve decision makers at each state or sector in the decision making process and enable them to influence members of the states.
- Enable KM coordination and data sharing between all states.
- Encourage data collaboration between all states.
- Highlight the project objective to Islamic leader in Malaysia and overseas.
- Document the learning process for the KM.
- Suitable working environment for team.

IV.CONCLUSION

This paper proposed a KM process model for the IslamGrid Project based on the model proposed by Bouthillier and Shearer [4] considered suitable for this project, and described the activities of each stage of the model.

There are many reasons why knowledge should be managed properly especially using the collaborative technology such as information overload, technology advancement, increased professional specialization, competition, workforce mobility and turnover, and capitalization of organizational knowledge. Technology in the context of IslamGrid KMS is the platform for people to organize, store and access explicit knowledge and information using certain tools which make it easier and attractive for people to interact and contribute with it.

Examining the impact of the hundreds or millions of people who use Facebook, which promotes ease of use, practical results, and personal self satisfaction within collaboration systems, it has radically changed the paradigm of ways enterprise knowledge sharing and management could be done. Once the JAKIM KM or IslamGRID is able to provide similar interaction, it could then be captured and turned into knowledge. It ultimately comes down to the mindset of the people involved, on whether there is a culture of sharing information among those participants and what are the knowledge we would like to gain from it.

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