The Culture of Knowledge Creation and Knowledge Sharing In Successful Institute Of Higher Learning (IHL): A Literature Review

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Abstract: The culture of knowledge creation and knowledge sharing play very important role in the successful implementation of Knowledge Management in any Public or Private Institution of Higher Learning. A literature review study is being conducted to explore the culture of Knowledge Creation (KC) and Knowledge Sharing (KS) among the Community of Practice (CoP) in Malaysian Public Institution of Higher Learning (IHL) and the possible framework that has been practice in the education field.

Keywords: Culture, Knowledge Management, Knowledge Creation, Knowledge Sharing, Institute of Higher Learning, Malaysia

I. INTRODUCTION

Knowledge is defined as the source in human mind and it is based on the information which is obtained through experience, beliefs and personal values where ideas, realities, concepts, data and techniques saved in human memory (Allameha et al., 2011). Gupta et al. (2000) define Knowledge management as a process by which organizations are able to detect, select, organize, distribute and transmit vital information and experiences which would be used in activities like problem resolution, dynamic learning, strategic programming and decision making.

Today, knowledge management is considered as the main source of competitiveness and skills could be used for entering inventiveness in organizations. In addition, Allameha et al. (2011) said that culture also can affect knowledge management in several ways as it happens to live within organization and change accordingly.

This study aims to point out the importance of Knowledge Creation (KC) and Knowledge Sharing (KS) specifically for academics. Plus, identify and understand the culture of knowledge creation and KS activities among Institute of Higher Learning (IHL) stakeholders in selected public institution in Malaysia. In addition, this research aims to determine the possible motivators, barriers, suggestions, and frameworks to overcome issues in KC and KS among the IHL stakeholders. Therefore, by providing potential suggestion to institution may improve the institution quality in knowledge creation and KS.

QS Ranking of Malaysia Public Institute of Higher Learning:

Quacquarelli Symonds (QS) Top World University Ranking was established by QS British to published an annual university ranking (Wikipedia, 2015). Ranking is an assessment tools that can describe the university performance. It also could be adding as profile to the university. The Director of Higher Education of Research Unit in Dublin Institute, Ellen Hazelkorn said, the university ranking become a trend nowadays. Plus, it has been reviewed by the top management in universities to plan a strategic direction for their institution. She also point out the dos and don'ts in using the university ranking (Times Higher Education, 2015).

The QS ranking are being assessed based on academic reputation, employer reputation, student ratio, citation per faculty, international student ratio and international staff ratio. These keys are assessed using indicators and based on data and survey globally gathered. Description of the key element in the assessment is stated in the table below:

Table.1The key criteria in the QS Ranking Methodology

Academic reputation	Academics review about their current best work field of expertise in the university.
Employer reputation	The employer review about the employability of the university graduate in the job market.
Student-to-faculty ratio	The number of academic staff relative to the number of students enrolled
Citation per faculty	Asses the published research paper of the university that being cited by other research paper in the Scopus
International student ratio	Measure international diversity of student in the university
International staff ratio	Measure international diversity of academic staff in the university

There are six universities in Malaysia are among 400 universities listed in QS Top World University Ranking 2014/2015; Universiti Malaya (UM) ranked at 151, followed by Universiti Kebangsaan Malaysia (UKM) ranked at 259, Universiti Teknologi Malaysia (UTM) ranked at 294, Universiti Sains Malaysia (USM) ranked at 309 and Universiti Putra Malaysia (UPM) ranked at 376. These five universities showed performance improvements when their ranking increased from the previous year. In addition, International Islamic University Malaysia (IIUM) ranked at 501 in QS World University Ranking 2014/2015. Plus, IIUM ranked at 151 in University Subject Rankings 2014/2015 and ranked at 145 in Asian University Rankings 2014/2015 (QS Top Universities, 2014).

The Malaysian Insider on September 16, 2014 reported IIUM shows no improvement in the ranking and it can be indicated that the university need help and major change is required in the knowledge structure among stakeholders especially the researchers, academicians and students (Sue-Chern, 2014).

Fig.1 QS University Rankings: Asia 2014 on Malaysian Universities focusing on citations per paper

'Citation per paper' by IIUM is low compare to other public universities with 8.1 percent as shown in figure 1, compare to USM and UM with 37.0 percent and 30.7 percent respectively. Citation can indicates how many thesis or research is published and available to get cited by other researchers or academicians. This can project that KS is not well practiced among IIUM stakeholders. It is either less research or paper made by IIUM researchers, academicians or students, or the papers and researches is unavailable to be used or sharing by others. Furthermore, from the ranking also pictures level of research in IIUM is medium compared to UM as presented in figure 2. Perhaps the institution age, influence the level of research between the universities.
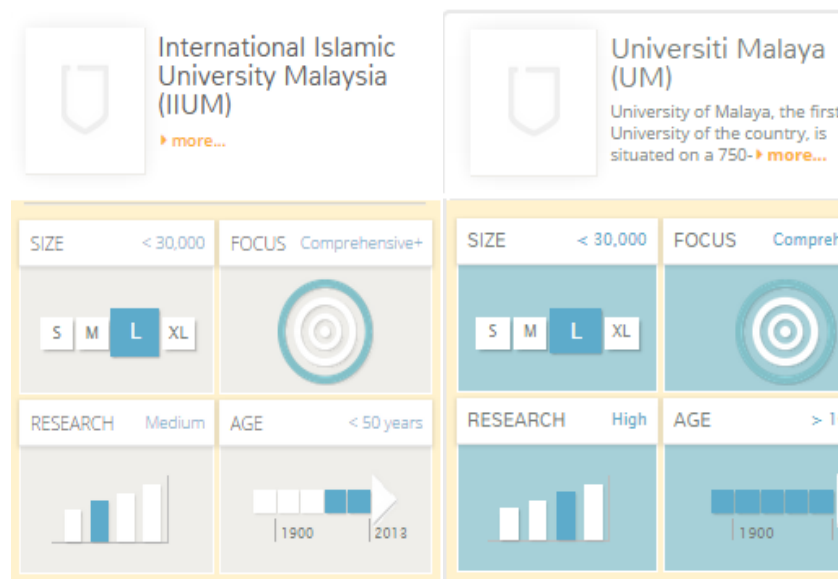
Fig.2 Comparison between IIUM and UM

Therefore, IIUM still behind in academic performance compare to the top universities because of lacking in research and can assume that IIUM less in KC and KS. From the previous discussion mentioned that culture could be one of the major factor that influence the success of the university, thus the culture of research and publication in the university could be one indicator of the KC and KS in IHL.

Based on the QS World University Ranking criteria, the academic reputation indicate the KC of the university while the citation per faculty could be indicate as the KS in the university. Furthermore, culture to share and create new knowledge can improve the IHL status especially in the Research/Renewal & Development (R&D) industry.

II.   PROBLEM STATEMENT

As mentioned in the previous section, IIUM is still lag behind in the QS Top World University Ranking compare to the other top universities. One of the elements that being assess is on research of the university. Academic is the major element which contribute 40 percent to the ranking evaluation. While the citation of the research contribute 20 percent of the evaluation. Probably the problem is because of lack of research culture in the university especially on KC and KS. Thus, these two elements bring out several questions:

1.   How IHL in Malaysia practice KC and KS?

2.   What are the possible ways for IHL to encourage participation from stakeholders in practicing KC and KS?

3.   How KC and KS increase IHL performance comparable to other top world ranked universities?

4.   How IHL made KC and KS be part of the university culture?

5.   How IHL can improve their Knowledge Management practices to ensure KC and KS become a norm or culture among stakeholders?

Therefore, researchers aim to make literature studies on the KC and KS success factor that can contribute to increase the IIUM performance and cherish the culture of KC and KS among the IIUM community.

III.   METHODOLOGY

This research apply literature review study to identify the successful factors of KC and KS culture. This paper is focus on the review of previous published materials from other researchers from the knowledge management field. The field of studies is focus on the culture of KC and KS in the IHL. Researchers try to identify and outline the successful factor that has been discussed in the previous studies.

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IV.   LITERATURE REVIEW

Knowledge Management:

Allameha et al. (2011) define knowledge as the source in human mind and it is based on the information which is obtained through experience, beliefs and personal values where ideas, realities, concepts, data and techniques saved in human memory. Nowadays, knowledge management is considered as the main source of competitiveness and skills that could be used for improving organization including Higher Institutions. Somehow, culture affect the implementation of knowledge management in organization. Culture can affect knowledge management in several ways as it happen to live within organization and change accordingly. In a journal title '*Concern & Challenges: In Information Technology Age'* written by Tyagi (2011), he said that "the crucial step in knowledge management is on creating and developing new knowledge". Implementing these two dimensions will bring big challenges especially to encourage stakeholders in IHL to participate.

In knowledge management consist of two important elements which are KS and KC. These two elements come after another in the knowledge management cycle. The following figure 3 shows that knowledge management cycle has six steps.
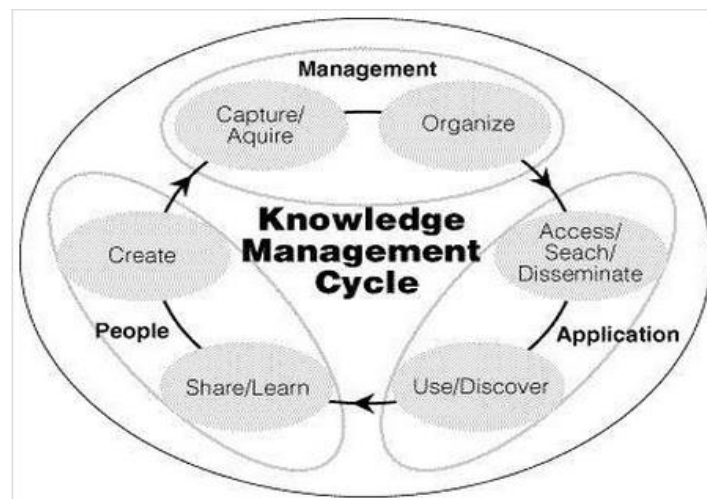

Fig.3 Knowledge Management Cycle Sources: Canadian Military Journal

Knowledge management cycle clearly showed that sharing of knowledge is one step which people exchange their views and ideas on a particular idea or knowledge. The key to knowledge management lies in sharing of knowledge as it increases the innovation and improves the overall organizational performance.

(McIntyre et al., 2003) There are three general perspectives in the Knowledge Management Cycle: management, application and people. Management focuses on capturing, organizing and facilitating knowledge. Application focuses on effective retrieval of relevant content through advanced searches and mining to conduct knowledge-related work and tasks and on the use of the results for discovery. It relies on the knowledge combination portion of the model. People focuses on learning, sharing and collaboration. This is the education component of the cycle that is within the internalization quadrant, moving into the socialization portion.

Knowledge sharing is the fundamental means through which employees can contribute to knowledge application, innovation, and ultimately the competitive advantage of the organization (Jackson et al., 2006). Most knowledge tends to be implicit as it comes from someone experience and difficult to communicate and sometimes impossible to get the knowledge documented. This is the tacit knowledge which usually provides competitive advantage for future successful organization and should be the main activity to encourage creating new knowledge. KS is the fundamental means for IHL stakeholders to contribute in knowledge creating, innovation, and ultimately the competitive advantage of the organization.

Next, knowledge is created by sharing of ideas by communities in an organization or institution. KC occurs continuously usually after KS. Their interplay results in a new knowledge, which is exploited to develop an improved design. Figure 4 schematically represents the KC during the product development life-cycle in practical settings.
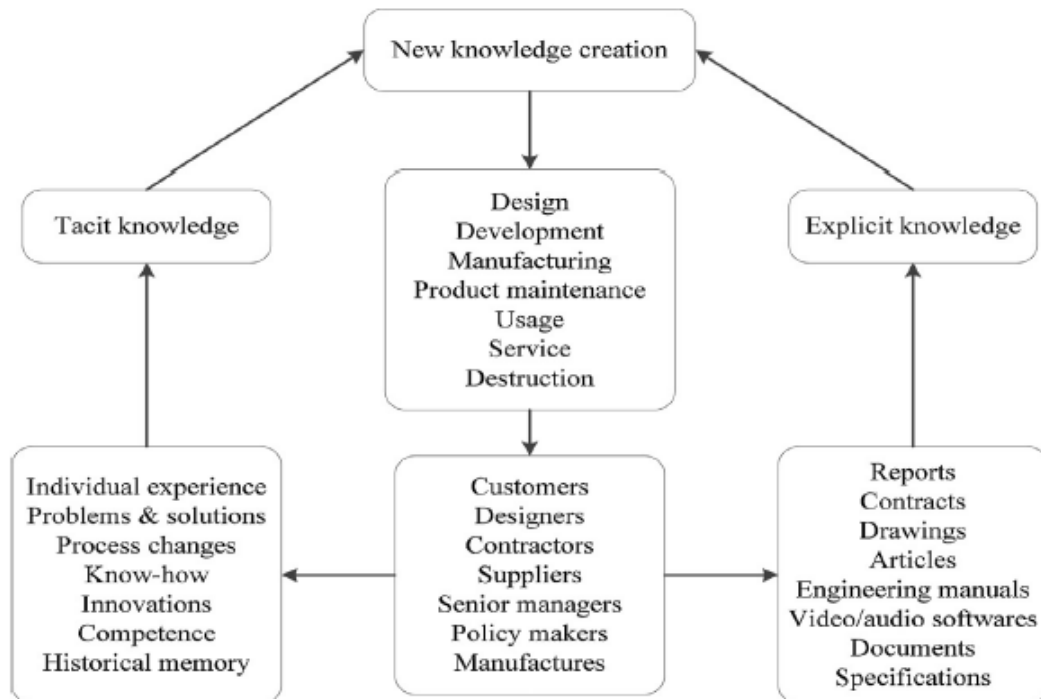
Fig.4 Schematic representation of KC in real world

Tyagi et al., (2015) again said that KC is a never ending process that should be implemented in Malaysia institution to improve development in higher education industry.

Knowledge Creation:

According to Srivastava (2011), the new KC is when the knowledge is used and applied it. KC is part of knowledge management life cycle. Tyagi et al., (2015) explained KC as the process of continuously updating or increasing the knowledgebase of what one knows now, rather than what one did not know before, and keeping it accessible and usable. KC has conscious effort from both inside and outside to examine and define appropriate knowledge and resources in organizations. It is possible to create new knowledge by finding new ways which personnel have found for doing tasks, or find new knowledge from outside sources. (Tyagi et al., 2015) Well-organized KC can decreases the knowledge gaps, and assists in future projects but also helps making the right decisions quickly for faster and improved quality products and services.

Knowledge Sharing:

According to (Nassuora & Hasan, 2010), the KS in an educational system ensures that academic staff is updated from time to time with the latest knowledge. Indeed, not only academician is necessary to practice KS. All stakeholders like researchers, students, administration staffs, and whomever living under the same roof (IHL) should together implementing KS. KS more focused on tacit knowledge or more to one's experience in their respective fields. Explicit knowledge is easily to be gained from the fact, however tacit knowledge is crucial but difficult to be captured as it comes from someone experience or skills. This is the reason why KS should be implement in IHL so that stakeholders especially academicians and students can have the tacit knowledge as the additional and supportive information other than explicit knowledge.

SECI Model:

Nonaka and Konno (1998) had been proposed the Socialization (S), Externalization (E), Combination (C), and Internalization (I) or SECI model as shown in figure 5 which could impliedly explain the function of tacit and explicit KC and KS in the knowledge management process.

This model also known as Ba-Concept. Ba in Japan means space. The concept is about space in sharing to encourage KC. The space can be physical, virtual, mental or any combination of it. SECI model are really popular in the KC and innovation field.
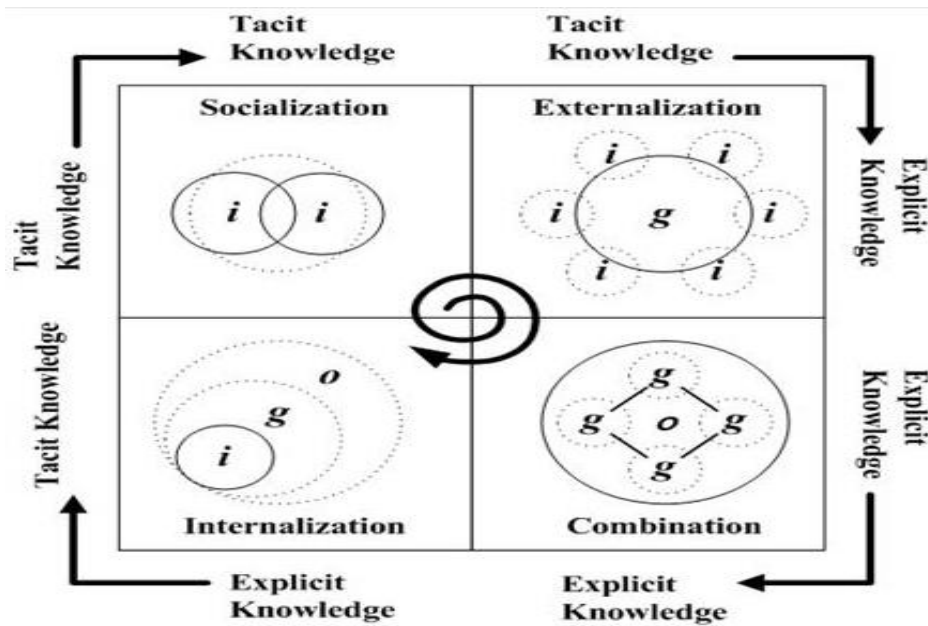
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Fig.5 SECI model

Socialization is a process the tacit knowledge is being shared among the individual. Share the personal knowledge directly to the colleague or subordinates. While, for the externalization is a process where the tacit knowledge is transform into explicit knowledge. Here is the KC process. Nonaka had been highlighted two key factor in the externalization stage.

The important factor in these stages are the approach to express the tacit knowledge among the members and the documentation factor for the tacit knowledge to be transformed into the explicit knowledge that can be understandable by the member. Thus, interaction and communication are the two factors could be a barrier if it is not encounter correctly.

Successful University:

There is no exact explanation to define a successful university. According to the researcher in Poland, smart university comprise of smart people, smart building, smart governance, knowledge grid and smart environment. From the statement they said that if we manage it by intelligent way it can be called smart. Where manage all the segments in the university by coordinated manner (Owoc and Marciniak, 2013). Other than that, if the university achieve its goal in producing an employability graduates are the successful university.

In a report with title '*an avalanche is coming: Higher education and the revolution ahead*', the author quote speech by Christensen and Eyring. They said that, the people in the university comes and go. The only remain is the university identity. The identity of the university is from the structure and the governance. Plus it include the relationship among the university communities. All of this will produce some unique identity of the university which is become the practice and culture of the university. In addition it will create good image and excellence reputation for the university (Barber et al., 2013). Lawrence and Bodger (2006) study on the characteristics of successful organization, they point out three important components; strategy, culture and operation.

Communities of Practice (CoP):

There are lots of practice in knowledge management. One of the practices is Communities of practice. Communities of Practice in Knowledge Management is highly important in the implementation of KM. People in organization could be the strong factor in the organization culture because the action is comes from its people to implement those strategies that has been plan (Lawrens and Bodger, 2006). According to Hoveida, Shams and Hooshmand CoP will be naturally develop and emerge in an organization. The group will be naturally form a group together to share ideas according to the mutual interest among the member. The role and contribution of each community related to Knowledge Management practice in IHL should be identified so that all parties can play their role and contribute in knowledge management lifecycle implementation especially in KC and KS.

One study by Suhaimee et al., (2006) regarding 'the role and contribution of each community related to Malaysia IHL in Knowledge Management' showed that the top management got the highest ranking of role and contribution in the

implementation of Knowledge Management in IHL. Furthermore, there are other parties are part of university education process that should be involve in the Knowledge Management of the university. The other stakeholders are faculty, campus director, dean, academic affairs, students, alumni, internal advisory board and external accreditors (Maher et al., 2010). All the stakeholders could be categorized as internal and external communities.

Besides internal communities, CoP involves external communities such as other universities and agencies especially recruiting company. As other universities is part of IHL in Malaysia, so all institution in Malaysia will be the external community of IIUM. Recruiting company or agencies including governments, private agencies, organization and any personal interested in IHL will be IIUM external community. These group of community will comment on the performance and achievements of university graduates and at the same time provide information related area required and should be focused by institutions.

Culture:

Culture can affect organizational knowledge in various ways. Oxford define culture as the customs and beliefs, art, way of life and social organization of a particular country or group. Merriam-Webster define culture as the integrated pattern of human knowledge, belief, and behavior that depends upon the capacity for learning and transmitting knowledge to succeeding generations. These two definition show that culture is a part of social group especially in creating and sharing knowledge as it is part of Knowledge Management. Godwyn and Gittell (2011) state that culture emphasize conceptual sharing in their book. They said, "culture, has something to do with sharing among the members of a group and language is the most aspect of sharing". This can indicates that culture can be one element that will encourage KS and KC in IHL. According to Owoc and Marciniak (2013), they conclude that the business culture of the institution also one of the influence factors that contribute to the success of the organization in implementing the knowledge management.

Madge (2012) explained, the importance of organizational culture which has influence on so many organizational elements: mission and objectives, policies and procedures, decision making, communication process, continuing professional development of employees, employee attitudes and behavior, values promoted by the organization, management style, the position libraries and information services occupy in their domain, relationships with the external environment, employee motivation, performance etc. These elements should be considered by all institutions to ensure the implementation of knowledge management is align with the institution culture. Institution can proposed changes without make a huge change on the culture itself.

The SECI model and the concept of KS and KC can be implemented in the Institution of Higher Learning to increase the institution performance. Technology also affect growth in the educational sector and give change to the higher education especially by the existence of Distance Learning (PJJ) and Online Universities that provide competition to the existing universities in Malaysia. Institutions in Malaysia should struggle to capture and reuse knowledge to compete with private institution which is increasingly and also becoming a competitor to public institutions. IHL communities can create a valuable knowledge if the Communities of Practice (CoP) sharing good ideas.

V. LITERATURE FINDINGS

Knowledge Creation:

Based on a research finding, they highlighted that the flexible organization structure could be one of the barriers in KC and knowledge transfer. It is due to many researcher are focus on project outside the organization, lack of decentralize decision and it result the number of the researcher in the existing university could not support the demand in Research and Development Department (Silva et al., 2012).

Based on European Commision Report in 2008, they highlighted that EU, USA and Japan are a head in scientific research by have the highest score in the KC World Wide Indicator. Some of the indicators are the number of researcher, the number of share and published article publication and the number of patent registered (Szentirmai and Radacs, 2012).

Cabinet on October 11, 2006 has decided to recognize Universiti Sains Malaysia (USM), Universiti Putra Malaysia (UPM), Universiti Kebangsaan Malaysia (UKM) and Universiti Malaya (UM) as a Research University. Currently, Universiti Teknologi Malaysia (UTM) also was established as a Research University. Ministry of Higher Education intends to have more institutions of higher learning (IHL) can be recognized as a Research University to strengthen research and innovation by 2020.

IIUM is also aiming to become 'the Premier Global Islamic University' which consists of the core values or six pillars under good governance and align with Islamization where Knowledge Management is a fragment of the Research and Innovation value. KC and KS are parts of knowledge lifecycle which are important and should be practice among IIUM stakeholders.

One of the indicator of the QS Top Ranked Universities is "Citation per Faculty". This indicator holds 20 percent from the overall ranking. Citation indicator assess the university research output and the number of "citation" or number of research being cited by others. When research or paper is cited more often, it increase the value. The QS ranking collect these "citation" information using Scopus, it is the world largest database of research abstract and citations. Therefore, IIUM must encourage researchers, academician and students to publish their papers under Scopus.

In addition, Malaysian Research Assessment (MyRA) has been developed by Ministry of Education (MOE) for the local universities to monitor their achievements in the Research, Development and Commercialization (R&D&C). The purposes[1] of MyRA are:-

1. To evaluate the performance of local universities in R&D&C activities

2. For application of Fundamental Research Grant Scheme (FRGS) grant by universities

3. For application to be a Research University; and

4. Evaluation on the impact on the IPT that had been given Research University status

Knowledge Sharing:

The overall findings by Nassuora and Hassan (2010) revealed that KS is vital to the success of knowledge management practices in all organizations, inclusive of IHLs and effective KS among academics is essential for IHLs. The finding showed that the big major activity among the participating academics with are publishing books, journals, or other academic materials. However, discussing projects with peers within and/or outside organization which was a favorite activity and they believed that attending or participating in symposiums and public lectures, and sharing research findings were useful activities for them. Thus, the finding indicates that KS activities were beneficial to all.

People tend to share knowledge based on the intention and attitude. Thus the attitude and preference of the people should be one of the possible factor that we can analyze. The researcher found that the support from the institution management and provide the opportunity to the community could give bigger impact to the culture of KS (Sohail and Daud, 2009).

The individual commitment could be one of the strong factor because the individual is a part of the big organization. The simple analogy that can be relate is about the bricks at the wall. The combination of many bricks could build a wall. If the bricks are in a good quality, it will make a strong wall. Furthermore, one research has been done in the UK University. They found out that the university has the culture of knowledge, but it is as an individualistic performance. They do KS for internal promotion and external appointment (Fullwood, 2013). The behavior of reluctant to share their knowledge among academicians due to the assumption of less power and expert when everyone known about something he knows. The advantages and benefits that they can get could be one of the key driver for them to share the knowledge.

In a nutshell, there are many parties involve in the culture of KC and KS. Every parties has their own role to ensure the implementation of the knowledge management can be execute successfully. Plus, the positive commitment from each parties in the CoP is really important in contributing the success of the university.

VI.   ESTABLISH INITIAL RESEARCH FRAMEWORK

Mohayidin et al., (2007) proposed a framework that illustrates the relationships among dependent and independent variables with several factors especially in research, and teaching and learning, that have been identified as important to the university's functions as shown in figure 6. In the framework, knowledge management cycle is surrounded by infrastructure, info-structure and info-culture that support the KM activities. It indicates that the university should perhaps has good infrastructure, info-structure and info-culture in implementing KM practices in university align with the university's goals.

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[1] Sources: Malaysia Higher Education Department Official Website-http://jpt.moe.gov.my/institution/myraover.html
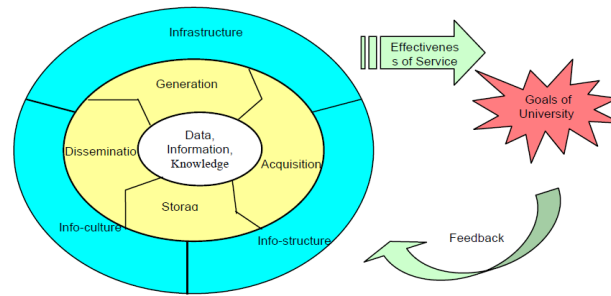
Fig.6 Conceptual framework on knowledge management model for university implementation

The universities' community can be effectively performing their core businesses if they utilize and manage knowledge in a proper way when they are aware of the benefits as well as added value that knowledge management brings (Mohayidin et al., 2007).

Moreover, Madge (2012) from University of Bucharest proposed a framework for creating a culture of learning and KS in libraries and information services. This framework (Figure 7) is designed after research is done on the performance of an organization, organizational culture, information transfer and information share, and the role in implementation.

The frameworks is flexible and can be used in any institution structure with the necessary adaptations, they can lead to improvement of performance and are a starting point for developing other specific models. KS become subset of KC. Sharing knowledge and exchange idea are highly recommended in knowledge management cycle. When stakeholders share their thought, new idea will be generate which lead to KC. New knowledge (KC) can comes from the existing knowledge by making improvements on the existing facts. This is the reason why KS and KC are interdependence.
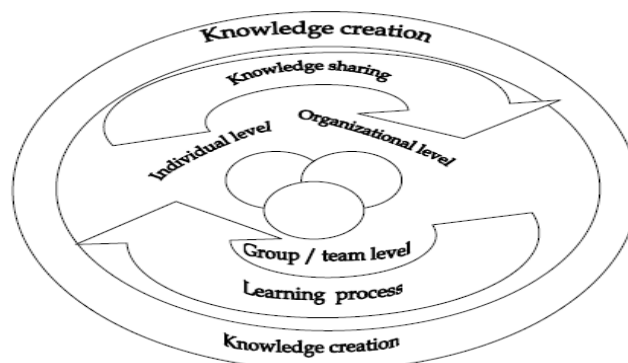

Fig.7 Learning and KS in libraries and information services

Furthermore, (Sánchez et al., 2013) proposed core process framework for creating and sharing knowledge to establish values for an organization. The framework was established as a cyclic sharing-creation process and there are strong feedbacks as the core of the knowledge management systems. This framework is proposed to promote individual competences to create a new knowledge transfer culture starting from the individual and going up through the team to the organizational level. In addition, this framework pretends to be an approximation to the processes to create knowledge within company environments and to share knowledge especially on tacit knowledge.

The framework aims to share the knowledge with others, create new knowledge and get to build teams more multidisciplinary and collaborative, to establish synergies within the team and build highly productive environments which ultimately will boost the efficiency within the project management field and within the whole company. Thus, it can be referred by any organization to maximize activity on KS and KC.

The frameworks were designed based on the structure of the university or, more specifically based on the type and stage of university infrastructure that existed at the university. The frameworks are not likely to be used by other universities because each university has different structure. However, the frameworks can be a model or a reference for universities to develop their Knowledge Management Framework. Therefore, universities will need to identify existing infrastructure, info-culture and info-structure, together with related stakeholders for the framework to be created and can be practiced by all who were under the same IHL.

VII.   FUTURE WORK

This study was conducted to explore the current state of KC and KS among Institution of Higher Learning (IHL) in Malaysia. As this paper focus on suggestion framework to overcome KC barrier, future work will be done by doing empirical study on the topic. The future study could adopt the framework from this paper as a reference. The next research could be analyze the CoP implementation in IHL. The framework that has been suggested could be test by doing some survey and questionnaire to the stakeholders.

The following empirical study will be held by distributing questionnaire which will be designed or adopted from the previous study to collect the data from the university communities which are the students, administrative staff and academic staff randomly. Few articles and related books will be referred in collecting data especially in preparing questionnaire. For this study two kinds of questionnaires has been used. The questions will be divided into four parts that consist of Knowledge Management, KC, KS and Demographic questions.

The empirical study could aim to get the response from the stakeholder of the university to share about their perception and their practice in KC and knowledge practice in their institution. This study also could compare the KC and KS culture in IIUM with other universities. The selected universities could be from the Research University and Non-research University. The aim is to benchmark IIUM with other top public universities in Malaysia. After the data collection process, the data will be analyzed and gather the outcome.

VIII.   CONCLUSIONS

Knowledge can be consider as an intellectual capital of human. Knowledge Management is required process to create, store and share the knowledge. Knowledge creation (KC) and knowledge sharing (KS) is significant to the success of knowledge management practices in all organizations, including Institutions of Higher Learning (IHL). Plus, effective KC and KS among researchers, academicians and students are essential to retain sustainable knowledge in the institution. Proper knowledge management helps IHL in developing the skill set among stakeholders and improving their efficiency at work. In addition, the culture in the university is one of the possible element that helps in knowledge management implementation. Culture can affect knowledge management in many ways.

Based on the news that reported about IIUM ranking performance, IIUM does not show improvement compare to the other public university in Malaysia. After reviewed the methodology of the QS ranking, majority of the evaluation is on the research and publication. Thus, this literature review study the possible cause and challenges in research and publication field as related to KC and KS culture. This research point out some of the successful factors and the possible barriers of the KC and KS in the university culture. Such as the structure of the university, perception and commitment of the stakeholder and etc. In this issue, an action must be taken by the top management of the institution to ratify a specific policy regarding knowledge management practice in public institutions especially on KC and KS. The aims is to control and cultivate the good practice and perhaps it will become the organization culture. Other suggestions will be the organization and the institution should be concentrated is by promoting KC and KS culture among university stakeholders.

In addition the IIUM could adopt some of the suitable frameworks that suit with IIUM culture and policies to boost the KC and KS in their communities in achieving 'The Global Premier University'. In conclusion, the collective commitment from all parties would result the best achievement for the university. Everyone has their important role in the successful university.

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