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The Role of Information Technology to Support Knowledge Management Processes in Higher Education of Malaysian Private Universities

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Abstract- The consideration of knowledge as an important asset that has a valuable position more than the physical asset leads to an increase in the implementation of knowledge management in business organizations and higher education institutions. The knowledge assets need to be implemented efficiently and effectively in the higher education institutions to increase the education level as well as the competitive advantage. The information technology plays an important role to support the knowledge management processes like the processes of acquisition, conversion, sharing, utilization, and application. The stakeholders of higher education institutions should perceive the role of information technology in implementing the KM processes successfully .This study investigates the role of information technology in implementing the KM processes in Malaysian private university as a case study . A quantitative and qualitative approach has been used in this paper for data collection to gain insights into the case that being investigated. A questionnaire has been used to collect data from 46 technical employees in Malaysian private university and the interview has been conducted with three head managers of the technical departments. The results indicates that weak information technology infrastructures that lead to weak implementing of KM processes .The main aim of this paper is to highlight the importance of IT to achieve a successful KM processes that lead to successful KMS . Some recommendations has been given to increase the integration between the IT and KM processes and to give each KM processes the IT infrastructure and services that compatible with it systematically and organizationally.

Index Terms- Knowledge management , knowledge management system, knowledge management processes and information technology.

I. INTRODUCTION

The growing use of knowledge in businesses, education and health contributes to the emergence of the theory of knowledge management (KM) and knowledge management systems (KMS) [1]. The terms KM and KMS are used interchangeably in organisations with KM initiatives. KM is defined as a systematic approach in managing knowledge through KM activities such as knowledge creation, storage, dissemination, and application while KMS is defined as information systems that support KM activities [2]. To understand the concept of KM, the definition of knowledge is necessary. Although there is no fixed definition of Knowledge, the general definition is a combination of experience; values and expert insight that assist evaluate and incorporate new experience and information [3].Generally knowledge is divided into two types: explicit and tacit knowledge. Explicit knowledge is experience and skills, which are easy to be captured, retrieved, shared and used because it can be expressed in words and numbers that can be managed more easily. Tacit knowledge is defined as knowledge that resides in the people's mind that includes experience, thinking, competence, commitment and deed [4] .Tacit knowledge is the most valuable knowledge since it combines information with experiences, skills and understanding of people, which can help people to find best solutions and reduce opportunities of repeating mistakes [5]. It is important to distinguish these types of knowledge because the goal of KM is to convert tacit knowledge to explicit knowledge [6]. (KM) is considered as one of the most important parts of any organization and a complement to the organization activities.

Previous studies have identified various KM processes. For example, [7] identified key processes of KM such as finding existing knowledge, creating new knowledge, packaging knowledge created, and externally using existing knowledge. [1] Identified KM processes as acquisition, identification, dissemination, and application. Thus, information systems designed for support and augmentation of KM need to complement and enhance the KM activities in organisations. Many industries with KM initiatives rely on IT as an important enabler. Companies like Hewlett Packard, Dell, and Siemens use IT in various ways to aid their KM activities. For example, they use IT for finding an expert or a recorded source of knowledge using online directories and searching databases, access to information pass projects. Although IT has been demonstrated to aid KM activities in business industries, there is a lack of empirical study on how IT supports KM activities in higher learning institution. [8] Conducted a study on the role of IT to support KM in higher education without providing empirical data. Thus, the objective of this study is to investigate the role of IT to support KM processes in higher education by conducting an empirical study on one higher education in Malaysia. We investigated the current situations of KM processes and the real status of IT system that support these processes.

II. LITERATURE REVIEW

1. Knowledge management in higher education

Universities are recognised as organisations that are knowledge-intensive as their business success relies on intellectual capital. Most of the activities in the universities are knowledge-based activities that involve creation, and transfer of knowledge among their employees especially among lecturers, and students. Thus, universities do have a significant level of knowledge management activities but have not had any formal KM practices. Therefore, it is important to recognise these, and use them as foundations for further development, rather than to invent a whole new paradigm [9].

Although the interest in KM is rapidly growing, KM is still considered as a new concept that has been merely implemented in higher education institutions. Implementing KM processes such as sharing, conversion, utilization and acquisition of both tacit and explicit knowledge in higher education can lead to significant improvement [10]. These processes are considered as the nature of the member staff job inside universities. Therefore, the higher education should adopt the KM and use KM best practices in their universities as a means to continuously save their knowledge asset due to the risk of loss the knowledge without a management system that can preserve it systematically and organizationally. However, the most important challenge of KM implementation in higher education is to convert the tacit knowledge that resides in individual's academic staff mind and make it explicit knowledge widely and easily available to staff member [6].

The KM implementation in higher education can help to achieve the following advantages:

- Increase competitive advantage for responsive to the research grants, improvement the libraries , E learning and directly react to commercial opportunities [10].
- Reduce the amount of time required to conduct the researches [10].
- Reduce the wasted resource time and costs which are spent to administrative the universities [10].

2. Knowledge management processes

Knowledge management (KM) consist of various processes that are established to manage the knowledge flow efficiently and effectively. It can be defined as managing the corporation's knowledge through a systematically and organizationally specified process for acquiring, organizing, sustaining, applying, sharing and renewing both the tacit and explicit knowledge of employees to enhance organizational performance and create value [11]. Many previous studies identify different processes and mechanism to manage the knowledge successfully inside the organizations environment. First of all, knowledge needs to be obtained in the organization through the process of acquisition [12] or through the generation process [11]. The acquired knowledge need to enter another process in order to use it efficiently, this process called the conversion process [13] or codification process [11] which is responsible of standardising and categorizing knowledge. Eventually this codified knowledge need to be available to be used by the organization employees. The process that is responsible of making the knowledge available to use is called the distribution process [14] or it called the sharing process [15] .after the knowledge shared successfully, it need to apply and implement practically in the organization ,this process is called the application process [2] and utilisation [16],[15]. Accordingly, the knowledge management life cycle as it is demonstrated in the literature review consist of processes of knowledge acquisition, conversion, sharing and application [13].

a. Knowledge Acquisition

Knowledge acquisition is a fundamental process in the KM implementation. It is the process that enables an organization to obtain the knowledge from external sources. External knowledge sources are important and one should therefore take a holistic view of the value chain [17]. Sources include suppliers, competitors, partners/alliances, customers, and external experts that can extend well outside the firm. Knowledge acquisition capabilities consist of processes and techniques for collecting information and creating knowledge from internal and external sources. Acquisition of external knowledge indicates the identification function, which represents the "generator" of intelligence for the organization. External environmental signals are identified, and information on those signals are gathered and transmitted across the organizational boundary. The more knowledge that can be collected in the firm, the better the acquisition capability works. Information and knowledge may be acquired through several processes from various sources, by learning, when observing other organizations, by implementing knowledge possessing components and by intentional search and monitoring. The speed of a firm's efforts to identify and collect knowledge can determine the quality of a firm's acquisition capabilities. The greater the effort, the more quickly the firm will build requisite capabilities [18].

b. Knowledge Conversion

The knowledge conversion is a critical process that play important role in the knowledge life cycle. It means converting the knowledge from one form to another form, tacit knowledge to explicit knowledge which is one of the most difficult processes due to the difficulty of converting the tacit knowledge that is embedded in the human mind to a formal structural knowledge that can be dealt with directly. In this process it is important to know what the knowledge that can be converted is and what is the kind of knowledge that is more easily transferable. [19]defined four types of conversion processes are that considered the most important processes to convert the knowledge efficiently from the tacit to explicit and vice versa. these processes can be classified as Tacit-to-tacit (socialisation) - individuals acquire knowledge from others through dialogue and observation, Tacit-to-explicit (externalisation) - the articulation of knowledge into tangible form through elicitation and documentation, Explicit-to-explicit (combination) - combining different forms of explicit knowledge, such as that in documents or databases explicit-to-tacit (internalisation) - such as learning by doing, where individuals internalise knowledge into their own mental models from documents.

c. Knowledge Sharing

Knowledge sharing is considered one of the fundamental KM activities, It can be defined as a multitude of processes including exchanging knowledge skills, experience, and

understanding [20].The ultimate function of knowledge sharing is to spread and make knowledge accessible and usable between the employees in the organization environment and it requires the willingness of employees to share their knowledge . Thus, knowledge sharing between employees and within and across teams allows organizations to exploit and capitalize on knowledge-based resources [11]. The sharing process can lead to many advantages that can minimize the completion of new product development projects, team performance, organization innovation capabilities, and organization performance. These advantages will increase sales growth and revenue from new products and services [21].Thus, the right activation of knowledge sharing process may produce many advantages that enhance the performance of the organization broadly and the employee's effort particularly.

d. Knowledge Utilization application

The knowledge application can be defined as the organization's ability to effectively apply the existing knowledge to create new knowledge and to take action from the basis for achieving competitive advantage from knowledge-based assets [2]. [22] identified three primary mechanisms for the knowledge application to integrate the existing knowledge to create organizational capability: directives (specific set of rules, standards, procedures, and instructions developed through the conversion of specialists' tacit knowledge to explicit and integrated knowledge for efficient communication to non-specialists), organizational routines (the development of task performance and coordination patterns, interaction protocols, and process specifications that allow individuals to apply and integrate their specialized knowledge without the need to communicate what they know to others), and self-contained task teams (teams of individuals with prerequisite knowledge and specialty are formed for problem solving -in situations in which task uncertainty and complexity prevent the specification of directives and organizational routines). Thus, technology can support knowledge application by embedding knowledge into organizational routines. In these operations it can improve and support the knowledge application by facilitating the capture, updating, and accessibility of the knowledge and thus, lead to enhance the speed of knowledge integration and application.

3. Knowledge Management Systems in Higher Education

Information technology is considered a backbone enabler that supports the KM processes and implementations robustly [23] .By applying the IT, the KM converts directly into KMS. [2] Defined KMS as "IT-based systems developed to support and enhance the organizational processes of knowledge creation, storage/retrieval, transfer, and application". The IT infrastructures provide many facilities and tools that enable the implementations of KM by converting the old traditional tools and techniques that were used to manage the knowledge into modern forms. These tools and techniques can be grouped into one or more of the following categories: business intelligence, knowledge base, collaboration, content and document management, portals, customer relationship management, data mining, workflow, and search [24]. The IT infrastructures enhance the KM processes inside many organizations such as business, health care and industries by providing many attractive features such as Interactivity, Mobility, Convertibility, Connectivity and Globalization. However, the IT has not yet been implemented widely in the higher education's institutions. Although the tools and services of IT infrastructures are used commonly in the higher educations' such as emails, blogs, and network technologies, they are not formally categorized as KMS. Therefore, the people in the higher educations like teachers, students, researchers need KMS that are formally implemented to enhance the learning progress and to support the knowledge transfer activities inside the various higher educations' institutions. This achievement can lead to minimize the total cost and maximize the organization performance simultaneously.

Nonaka and Takeuchi's SECI model is the most standard model that is used in KM theories. Knowledge in this model can be converted from one form to another ,converting progress can be implemented by Appling (SECI) the four processes which are Socialisation, externalization, combination, and internalisation processes.(1)socialisation(from tacit knowledge to tacit knowledge),(2)Externalisation (from tacit knowledge to explicit knowledge),(3)combination(from explicit knowledge to explicit knowledge),and(4)internalisation (from explicit knowledge to tacit knowledge). However, the conversion processes needs IT support to transfer Nonaka and Takeuchi's SECI model from its theoretical exist into a real practical usage inside the higher educations' institutions. [8] Identified and classified different IT tools and types that fit to each conversion process of SECI model. Furthermore, by distinguishing the suitable IT type for each conversion process, different types of knowledge can then distinguished to be used in the appropriate process. The IT types for each conversion process are classified in the figure 1 based on the roles of information technologies for each method of knowledge conversion in SECI model [8] .

Tacit to Tacit Knowledge Via Socialization	**Tacit to Explicit Knowledge Via Externalization**
Lecturer shares tacit knowledge with students directly through face to face interaction such as through discussion, observation, imitation and practice **Information Technology:** video conferencing – distance learning ,virtual postgraduate supervision Internet-Community of Practice (CoP) Knowledge directories-consultation, advice electronic discussion forum/ collaborative tools - exchange of ideas and allow that ideas to be stored for later retrieval	Articulate tacit knowledge about academic, research and administration procedures into explicit form via policy, models, reports and etc. (e.g. administrative rules, program structure for undergraduates and postgraduates, and program requirements) **Information Technology:** Knowledge repository- store rules, policies, solutions, work flows, processes, research reports, the result of discussion by academicians in workshops Explicit

Explicit to Tacit Knowledge Via Internalization	**Explicit to Explicit Knowledge Via Combination**
Consolidate knowledge gained and internalize the knowledge by embedding own's beliefs and values. Associated with the learning process and making use of that knowledge. **Information Technology:** electronic discussion forum/ collaborative tools, Blog – story telling method of sharing experiences social media- opinions, ideas and feedback	Knowledge are combined, analysed, rearranged, added, categorized, and exchanged via students' performance analysis, end of semester report, assessments strategy (e.g. assignment, final exam, lab exercises, class project) **Information Technology:** Portal Blogs Electronic document management systems- access information, store new knowledge

FIGURE 1: The roles of information technologies for each method of knowledge conversion in SECI model [8].

By implementing the IT type's classification for each knowledge conversion, the learning and teaching progress will speed up, the flow of the knowledge can be freely managed and eventually The KMS can be implemented efficiently and effectively in the higher educations' institutions in Malaysia. Accordingly, this study investigates the current KM processes and the IT role in implemented KM in higher education institution as an empirical study that are conducted based on the theoretical study of classifying the role of IT for each conversion process in SECI [8].

III. Research purpose

This research conduct under the scope of what is the current situation of KMS processes and implementations in UNITEN university, what is the real level of IT in KM implementation, to achieve the research purpose, the literature review demonstrate the effective KM processes that are needed to manage the knowledge contents and the importance of IT to manage the KM processes in order to maximize the overall performance of the organizations efficiently. However, KMS may not implement efficiently due to the weakness of IT system, and the incompatibly between the IT system and the organization objectives. Therefore, the current situation of KM processes and the role of IT as enabler that support the KM processes inside UNITEN working activities will be investigated.

IV. Data collection and analysis

This research uses both quantitative approach (questionnaire) and qualitative approach (interview) to collect research data as the following:

- Questionnaire adopted from [25] study are used to collect data from technical employees inside UNITEN University based on 7-likert scale (1 for Strongly Disagree (SD), 2 for Disagree (D), 3 for Tend to Disagree (TD), 4 for Neutral (N), 5 for Trend to Agree (TA), 6 for Agree (A) and 7 for Strongly Agree (SA). The questionnaire consists from 44 items divided into 5 sections; (1) knowledge acquisitioning, (2) knowledge conversion, (3) knowledge sharing, (4) knowledge application/ utilization, and (5) IT system. The numbers of responses for this questionnaire were 46 responses.
- Interview designed are used to collect data from head managers of technical department inside UNITEN University based on open questions in order to analyze the real situation of KMS processes. The interview contain 30 question divided into two section; (1) knowledge management processes, and (2) challenge of knowledge management processes inside UNITEN university. The interview respondents are three head managers from technical department.
- Data gathered through questionnaires were submitted to a set of statistical analyses tools, using Statistical Package for Social Sciences (SPSS) version 20. According to the research purposes performed several of analyses which are: (1) Reliability analysis. And (2) descriptive analysis.

V. Questionnaire Findings

1. Questionnaire reliability

Reliability is used to describe the overall consistency of a measure. A measure is said to have a high reliability if it produces similar results under consistent conditions. For example, measurements of people's height and weight are often extremely reliable [26]. In statistics, coefficient alpha is the most frequently method used for calculating internal consistency that used as a measure of reliability for the dependent variable of the study, when $\alpha > 0.7$, that indicates satisfactory internal consistency reliability [27]. Table2 shows that coefficient alpha is .97for the scaled variables which contain 44 items (part 2, 3, 4 and 5) and 46 respondents.

Table 1: Reliability Statistics

Cronbach's Alpha	N of Items	NO of Respondents	% included Respondents
.97	**44**	**46**	**100%**

2. Descriptive Analysis

This section presents the descriptive analysis of the questionnaire parts; knowledge acquisitioning, knowledge conversion; knowledge sharing, knowledge application/utilization, and information technology.

a. Knowledge Acquisition

This variable consists from 12 items to measure the organization processes of acquiring the needs of knowledge to support working activities. Table 1 shows that the respondents' answers means are agree with items number 1, 5 and 9 and trend to agree with items number 2, 3, 4, 6, 7, 8, 10, 11, and 12.

Table 1: Descriptive Analysis of Knowledge Acquisitioning

Item No	Item	SD	D	TD	N	TA	A	SA	Mean
1	Our organization has processes for acquiring knowledge	0	1	0	9	4	28	4	5.52
2	Our organization has processes for generating new knowledge from existing knowledge	0	2	0	10	4	26	4	5.39
3	Our organization has processes for acquiring knowledge about our suppliers	0	2	0	11	7	25	1	5.21
4	Our organization uses feedback from projects to improve subsequent projects	0	3	0	8	2	31	2	5.39
5	Our organization generates new knowledge through collaboration with business partners	0	2	2	5	6	26	5	5.45
6	Our organization has processes for acquiring knowledge about new products and services within our industry	0	2	1	9	6	23	5	5.34
7	Our organization has processes for acquiring the knowledge about competitors within our industry	0	1	1	9	7	24	4	5.39
8	Our organization has processes for benchmarking performance	0	3	1	4	6	29	3	5.43
9	Our organization has teams devoted to identifying best practice	0	1	0	7	3	27	8	5.71
10	We regularly carry out environmental scanning for the purpose of acquiring knowledge	0	2	2	10	5	23	4	5.23
11	We encourage employees to document their experiences	0	1	2	9	8	22	4	5.30
12	We routinely benchmark ourselves against our competitors	0	2	2	6	10	24	2	5.26

According to table 1, the responses show that the UNITEN has clear processes to acquire the tacit and explicit, the UNITEN generate explicit and tacit knowledge supporting external resources, and the UNITEN has teams to identify the best ways to develop the tacit knowledge. Also, UNITEN has clear vision to classify the explicit knowledge for best knowledge identifying. On the other side, the employees are not clearly sure of the following issues of knowledge acquiring:

- UNITEN is active in generation of new tacit and explicit knowledge to support the existing situation of knowledge.
- UNITEN is active about acquiring feedback of knowledge implementation benefit.
- UNITEN is active in provide collaborating sharing to acquire new solution of tacit and explicit knowledge.
- UNITEN is active in archive the tacit knowledge of expert employees
- UNITEN is active in manage the tacit and explicit knowledge based on structured method for purpose of efficient acquiring of knowledge

b. Knowledge conversion

This variable consists from 7 items to measure the organization activities of knowledge conversion processes (tacit and explicit knowledge). Table 2 shows that the respondents' answers means are agree with items number 15 and trend to agree with items number 13, 14, 16, 17, 18, and 19.

Table 2: Descriptive Analysis of Knowledge conversion

Item No	Item	SD	D	TD	N	TA	A	SA	Mean
13	In our organization, the knowledge of individual is record in an structured way, so that others in the organization may be benefit from it.	0	3	0	9	9	23	2	5.19
14	In our organization the knowledge is represented in standard way.	0	4	0	6	7	25	4	5.32
15	In our organization the knowledge is cataloged for easy retrieval	0	6	2	11	7	17	3	5.45
16	Our organization has process for integrating knowledge from different resources	0	0	3	11	4	25	3	5.17
17	In our organization the knowledge is organized in a useful way.	0	1	2	5	10	23	5	5.28
18	Our organization has process for replacing out dated knowledge.	0	0	4	11	6	23	2	5.06
19	Our organization has process for filtering (i.e. exciting out only the most useful knowledge**)**	0	2	2	11	3	22	6	4.93

According to table 2, the respondents are not sure of the following points:

- In UNITEN the knowledge is represented in standard way.
- In UNITEN the knowledge is categorized for easy conversions.
- UNITEN has process for integrating knowledge from different resources.
- UNITEN organize the knowledge in a useful way.

- UNITEN has process for replacing out dated knowledge.
- UNITEN has process for filtering (i.e. exciting out only the most useful knowledge**)**

This variable consists from 8 items to measure the organization activities of knowledge sharing processes in order to motivate the employees to adopt the knowledge that deal with businesses strategies. Table 3 shows that all items means are trend to agree.

c. Knowledge sharing

Table 3: Descriptive Analysis of Knowledge Sharing

Item No	Item	SD	D	TD	N	TA	A	SA	Mean
20	Our organization has systems and venues for people to share their knowledge with others in the company	0	5	0	11	4	23	3	5.02
21	Our employees regularly share knowledge with their superiors	0	5	1	10	10	14	5	4.93
22	Our employees regularly share knowledge with their subordinates	0	8	0	6	8	17	7	5.06
23	Our employees regularly share ideas with other employees even if they are based in different departments	0	4	4	11	3	20	4	5.30
24	Our organization has processes for distributing knowledge throughout the organization	0	4	2	9	7	20	4	5.23
25	Our organization has processes for exchanging knowledge between individuals	0	1	0	8	13	23	1	5.26
26	Our organization makes knowledge accessible to those who need it	0	2	1	10	8	21	4	5.15
27	Our organization promotes sharing of knowledge between work groups/teams	0	3	2	7	10	16	8	5.00

According to table 3, the responds are not sure of the following issues:

- UNITEN motivates the employees through share knowledge through the organization.
- UNITEN supports the collaborative sharing of knowledge among individuals.
- UNITEN supports the employees' readiness of knowledge through share the employees nee of knowledge.

On the other hand, there are integrations problems to address the following processes:

- Applying knowledge learned from experience.

- Matches sources of knowledge to problems and challenges.

d. Knowledge Application/Utilization

This variable consists from 9 items to measure the organization systemically processes in order to ensure the business value of working activities. Table 4 shows that the respondents are agree with item number 34 and trend to agree with all other items.

Table 4: Descriptive Analysis of Knowledge Application/Utilization

Item No	Item	SD	D	TD	N	TA	A	SA	Mean
28	Our organization has process for applying knowledge learned from experiences.	0	4	3	6	8	19	6	5.02
29	Our organization has process for using knowledge to solve new problems.	0	4	3	7	10	19	3	5.06
30	Our organization matches sources of knowledge to problems and challenges	0	2	4	8	10	21	1	5.02
31	In our organization knowledge is used to improve efficiency.	0	1	6	8	10	16	5	5.06
32	Our organization effectively applies knowledge to deal with changing competitive conditions.	0	3	1	11	8	18	5	5.13
33	Our organization quickly applies knowledge to critical competitive needs.	0	1	6	8	5	20	6	5.19
34	We use our organization assets to solve problem quickly	0	4	3	14	6	15	4	5.80
35	Our organization has process for using knowledge in the development of new products and services.	0	2	5	6	10	21	2	5.06
36	Our organization has process for converting knowledge into action plans.	0	4	4	7	4	24	3	5.0652

According to table 4, the responses show that UNITEN focus on solves the problems quickly as a main strategy of UNITEN services. However, UNITEN are not clear of improves the services efficiency and changing competitive conditions. The responses show that there are no efficient processes to:

- Using knowledge to solve new problems.
- Using knowledge to develop new products and services.
- Convert knowledge into action plans.

e. Information Technology

This variable consists from 8 items to measure the IT services and infrastructures roles in knowledge management implementations. Table 5 shows that the respondents are agree with item number 24 and trend to agree with all other items.

Table 5: Descriptive Analysis of Information Technology

Item No	Item	SD	D	TD	N	TA	A	SA	Mean
37	Our IT systems are modular	0	2	2	10	6	22	4	5.21
38	Our IT systems use commonly agreed IT standards	0	2	2	8	5	23	6	5.36
39	We have a high degree of integration among our IT applications	0	3	3	8	2	23	7	5.30
40	Our IT system support the conferencing meeting between employees	0	5	0	7	4	22	8	5.34
41	There are electronic Blogs to share the knowledge for employees	0	3	4	12	6	18	3	4.89
42	The notifications of knowledge delivered using electronic contacts such as emails and mobiles	0	3	0	5	4	22	12	5.69
43	The knowledge delivered through employees accounts of university	0	5	0	5	5	27	4	5.32
44	The employees trained to use knowledge management systems practically i.e. workshops	0	4	3	7	3	17	12	5.34

According to table 5, the employees are sure that UNITEN use the IT system to deliver the notifications that support the KM through many applications such as e-mails and mobile messages. On the other hand, the employees are not sure clearly about the following issues of using IT systems in working environment.

- UNITEN has active electronic blogs to share the knowledge for employees.
- UNITEN has online conferencing to support the meeting among employees.
- UNITEN train the use of knowledge using practical approach to support IT services.

Actually, the responses show that the employees are not sure that there is a standard IT system to gain benefit of KM implementation. However, this shows that the notification of knowledge delivered supporting external IT services in order to share the knowledge at right time.

Normally, the organization address business objectives using efficient IT system, services, and application to share the right knowledge to the right employee at right time in order to support the working activities based on business objectives. The responses show that there are no efficient IT solutions to support business objectives in UNITEN which represent a bold challenge of KM implementation benefit in UNITEN.

f. Interview Analysis

Table 6presents the findings of interview of this study based on IT roles in UNITEN.

Table 6: Findings of KM Process based IT roles

Processes of KM	IT
Acquiring	The tacit knowledge managed based on the tasks roles of employees i.e. technical, mechanicals and fitters.

	The explicit knowledge stored as instructions documents. The archiving processes of explicit knowledge has specific duration peer year. The systems not open any time.
Conversion	The socialization processes adopted to transfer the old tacit knowledge to new employees. The training is the main method that used to develop the tacit knowledge of employees.
Sharing	The explicit knowledge shared with employees as clear instruction manually. The electronic sharing of explicit knowledge adopted in some cases through employees accounts. The employees need to have advance permissions to accesses the explicit knowledge.
Utilizing	The Tacit knowledge evaluated through assessment system called KPI and manual observing. KPI is system to evaluate the employees' achievements each semester.

VI. Findings Discussion

1. Questionnaire Discussion

According to relations between items 37, 38, 39, 40, 41, 43, and 44 in part 5 and items 2, 3, 4, 6, 7, 8, 10, 11, and 12 in part 1, there is weak integration between knowledge acquiring and IT system in UNITEN. There are no standard IT processes to generate new tacit and explicit knowledge to support the existing situation of knowledge, acquire feedback of knowledge implementation benefit, provide collaborating sharing to acquire new solution of tacit and explicit knowledge, archive the tacit knowledge of expert employees, and manage the tacit and explicit knowledge based on structured method for purpose of efficient acquiring of knowledge

According to relations between items 37, 38, 39, 40, 41, 43, and 44 in part 5 and items13, 14, 16, 17, 18, and 19 in part 2,there is weak integration between knowledge conversion and IT system in UNITEN.The knowledge is not represented in standard way and it is not categorized for easy conversions, there are no standard process for integrating knowledge from different resources and for replacing out dated knowledge, there are no process for filtering (i.e. exciting out only the most useful knowledge**),** and finally The knowledge is not organize in a useful way

According to relations between items 37, 38, 39, 40, 41, 42, 43, and 44 in part 5 and items 20, 22, 23, 24, 25, 26 and 27 in part 3, there is frailer integration between knowledge sharing and IT system in UNITEN. There is simple information technology that used to support the sharing process such as Email and mobile. Actually, these simple systems have many problems .for example, there are no support for the collaborative sharing of knowledge among individuals and there are no support for the employees' readiness of knowledge through share the employees need of knowledge .accordingly there is no standard information technology to enhance knowledge sharing process inside UNITEN.

According to relations between items 37, 38, 39, 40, 41,42, 43, and 44 in part 5 and items 28,29,32, and 36 in part 4, there is not clear support from information technology to UNITEN Application/Utilization. Accordingly, there are no efficient processes for using knowledge to solve new problems, develop new products with new services, and to convert knowledge into action plans. This mean there is no standard IT system to support the KM processes in UNITEN.

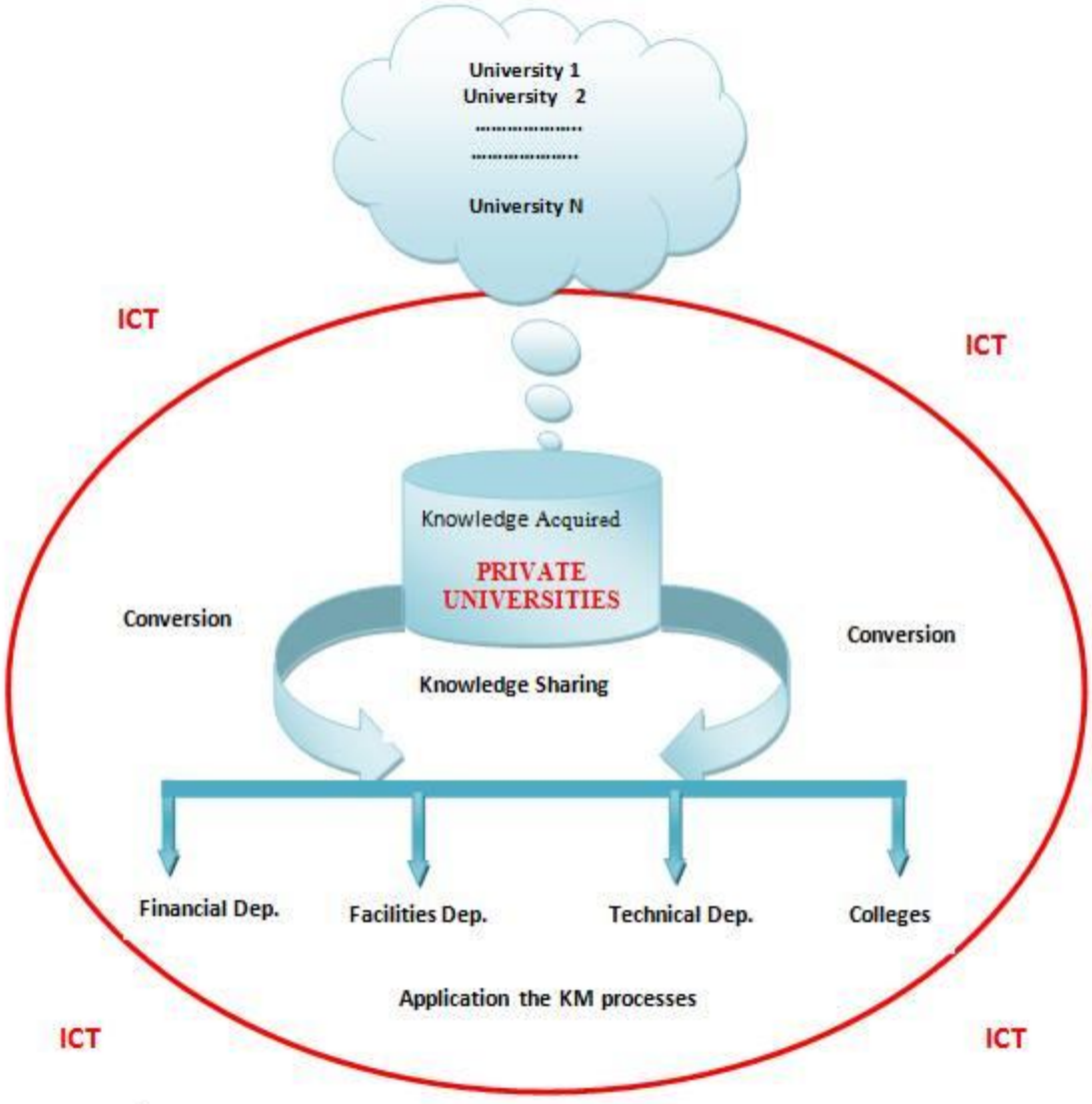
2. Interview Discussion

The conducted study in this paper reveals the current situations of the KM processes and the current status of IT system inside UNITEN University; accordingly, much challenge has been discovered and investigated to have a whole picture of the difficulties that faced the KM implementation in UNITEN. The investigation clarify that UNITEN university don't have effective documentation system to carry the related work and activities, this shows by storing the explicit knowledge as instructions documents that can only provide abstract information that don't have a meaningful value to the organization. This kind of documentation can lead to minimize the efficiency of KM implementation. Thus, lead to minimizing the outcome performance of UNITEN University. On the other hand ,the poor and limited interactivity between the system of standard instructions (KPI) and the employees lead to minimizing the employees effort especially and the organization performance generally, this weaknesses in the interactivity can be realized through the current drawbacks that the (KPI) system can open for updating the knowledge in a certain period of time and not for the entire year and the employees need to have advance permissions to access the explicit knowledge. In

addition to the previous drawbacks, the IT roles are not implemented efficiently in KM processes, the IT system does not support the KM process due to many reasons which are the IT system are not integrated well within KM processes, the IT system is incompatible with the current KM processes, and the IT system are not implemented correctly inside the KM processes. Therefore, most explicit knowledge in UNITEN departments are still archived as hard copies. These challenges are addressed carefully and specific recommendations are highlighted to resolve the weaknesses aspects in KM processes and the IT system inside the UNITEN University.

VII. Recommendations

The data analysis demonstrates that, the UNITEN have limitations in KM processes that lead to KM disadvantage. To solve these problems and enhance the KM implementation in term of knowledge conversion, sharing, Knowledge Utilization, and ICT, we propose that UNITEN should using integration IT system support all the KM processes which are acquire the knowledge ,knowledge conversion, knowledge sharing, Knowledge Utilization, and using ICT to as enabler to KM implementation in UNITEN. This system have to provide systematic services such as (1) acquire knowledge from other universities have success KM implementation , (2) conversion the acquired knowledge based on support the education processes or support the UNITEN development ,(3) share the knowledge based on where can benefit inside UNITEN for example used in Collage , facilities or Technical , (4) all these processes performed under IT , the IT have to help in acquiring ,sharing and conversion processes as the figure 1.2 view these processes.



VIII. Conclusion

Successful KM in any organization requires that, this organization should implement KM processes (Acquiring, Sharing , conversion and Utilization) the knowledge, as well as there are many required factors to support the KM implementation such as (culture, IT systems, competition , intelligent , managerial strategies) in order to get an efficient KM implementation . In UNITEN there are strengths and weaknesses

aspects in KM implementation. UNITEN has clear processes to acquire the knowledge, while there are lack procedures in the other processes such as knowledge conversion, knowledge sharing and Knowledge Utilization. Furthermore, IT system not integrated with KM system inside UNITEN .The drawback processes need to addresses and the challenge need to solve in to overcome for all barriers of KM system then get highest benefit. Finally, this study recommendation can offer several solutions to achieve the KM system objective that belongs to UNITEN University.

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