Processes, Enablers And Roles For Knowledge Management Applications In Libraries

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Abstract

The application of knowledge management in organizations including libraries begins with the identification of processes that must be supported by enablers to achieve success. The paper tries to propose the processes for KM applications in libraries and the enabling organizational variables to facilitate them for successful KM in libraries. These processes as proposed included knowledge identification, acquisition, creation and dissemination. The enabling organizational factors capable of facilitating these processes were identified as top management support, human resources policy, compensation schemes and collaboration. The KM roles for librarians were discussed from the perspectives of database creation, data analysis report and indexing. The paper concludes with recommendations on the measures that libraries can adopt in conjunction with the above organizational variables to enhance their readiness for knowledge management.

Introduction

The pressures for survival and visibility in the face of competition from emerging groups of information providers have forced university libraries to begin to look for innovative ways of operation. Accordingly, these libraries are looking outside their professional boundaries for new models to serve as guidelines for innovation, value-added services and future development. To this end, university libraries have applied business management trend or business- oriented solution as a survival strategy. For instance, application of total quality management, learning organizations and knowledge management have all been discussed in the literature of Library and Information Science (LIS) extensively. Wang (2006) discussed the application of total quality management (TQM) in academic libraries. According to him, TQM caught the attention of the library world mainly in the early 1990s. Wang was of the opinion that TQM provides a model and benchmark as guidelines for new strategies in libraries facing today's great changes and that it could be worthwhile if it is introduced to academic libraries. The application of learning organization as another business-oriented solution for libraries has also been discussed by Tan and Higgins (2002). They suggested that libraries need to become learning organization to survive. A learning organization environment encourages lifelong learning, continuous professional development, mentoring, mastery and exchange of information and knowledge.

Recently, knowledge management has been perceived as another viable response to the challenges that libraries face in the new competitive information environment. Shanhong (2000) stated that the objective of knowledge management in libraries is to promote knowledge innovation, closer relationship between libraries and between a library and its users and to quicken knowledge flow. There is a widespread recognition within the library

and information science literature that KM is relevant to the library and information professions. For instance, Ajiferuke (2003) discussed the popularity of KM in Canada in relation to the roles of information professionals.

The impetus for embracing knowledge management in university libraries according to Wen (2005) is mainly for a combination of library budget shortfall and high user expectation. Budget shortfall is a primary driving force for application of knowledge management in university libraries. In recent years, budgets in university libraries including those in Nigeria have been declining. At the same time, students, faculty and university administration have a greater expectation of university libraries due to the advancement of information technology and the explosion of knowledge in the digital age. University libraries have felt the pinch from both sides-less budget and more demand. They have also sensed the threat of being marginalized by lecturers who have developed their information gathering strategies to meet their needs (Wen, 2005). Wen concluded that knowledge management is such a tool that could help university libraries to operate more efficiently with reduced funding and enhance access to information and knowledge resources.

The library and information community has had varied perceptions of KM. This is because some library and information professionals could not establish clearly the relationship between KM and Librarianship. It was because these professionals could not see clearly or rather articulate the importance of KM or why it is vital to practice KM in academic libraries. Jain (2007) summarized the reasons for KM in academic libraries thus: Due to rapid knowledge decay and consequently need to create new knowledge, high staff turnover and loss of knowledge, needs of operational efficiency to address increased demands from faculty and students, need to establish best practices, need to manage e-evolution, need to leverage the available knowledge, necessity to survive and sustain competitive edge in the global community of profession and finally, seeing KM as a great opportunity to spread out the role of Librarians to the academic community.

Concept of Knowledge Management

For proper understanding of knowledge management, certain concepts need to be explained or defined. These concepts include knowledge, knowledge work, management and knowledge management.

It has been found in the literature that knowledge is not an easy or direct concept to define (Okunoye, 2003). However, there have been several attempts to define it across disciplines. These attempts have resulted in the traditional and modern views of knowledge (Okunoye, 2003). In an attempt to define knowledge from the traditional perceptive, many views emerged. These views include the linear view, the iconoclastic view and the cyclical view. These views were based on the relationship between data, information and knowledge.

In the linear view, Alavi and Leinder (2001) maintained that data are simple facts that become information, and information is the combination of data into meaningful structures. When these meaningful structures are put into context, information then becomes knowledge. This view assumes that data precedes information and information precedes knowledge in a linear order. However, the iconoclastic view, as presented by Tuomi (1999), is in sharp contrast with the linear view. Its main assertion is that data emerge last, only after there is knowledge and information. Tuomi argued that there are no isolated pieces of simple facts, unless someone has created them, using his or her knowledge. Data can emerge if a meaningful structure or semantics is first fixed and then used to represent information.

However, it can be argued here that aside from the hierarchy of these concepts, the iconoclastic view does not question the fundamentality of each concept and as such assumes a linearity of transition. An alternative to the linear views is the cyclical view by Okunoye (2003). Its main assertion is that we can generate data directly from data, information can be extracted from information, and similarly, knowledge could produce knowledge. Therefore, the relationship between these concepts is relative to each other and is context – dependent. It is therefore worthy of note here that apart from Tuomi (1999), most analysis in the traditional views of knowledge do not consider direct conversion of data into knowledge and vice-versa.

From the modern perspective, knowledge is viewed from its various dimensions and from how it could be managed (Okunoye, 2003). There are now many definitions of knowledge from this perspective. In attempt to define knowledge, Nonaka and Takeuchi (1995) identified two dimensions of knowledge, namely, tacit and explicit. Choo (2000) added the third component in his definition of knowledge to consist of tacit, explicit and cultural. Tacit knowledge is defined as action-based, entrained in practice, and therefore cannot be easily explained or described but is considered to be the fundamental type of knowledge on which organizational knowledge is built (Nonaka & Takeuchi, 1995; Choo, 2000). For Nonaka and Takeuchi (1995), tacit knowledge can be transmitted through social interactions or socialization, and made explicit through externalization or documentation, although they agree with the idea that tacit knowledge is somewhat hidden. Explicit knowledge, unlike tacit knowledge, is defined as knowledge that can be codified or documented and therefore more easily communicated and shared (Nonaka and Takeuchi, 1995).

In an attempt to define knowledge, Spender (1998) suggested a pluralistic view of different types of knowledge used by organizations. He categorized four types of organizational knowledge: conscious knowledge, which is the explicit knowledge held by the individual; objectified knowledge, which is the explicit knowledge held by the organization; automatic knowledge, which is pre-conscious individual knowledge; and collective knowledge, which is the context-dependent knowledge manifested in the practice of an organization. Cook and Brown (1996) were of the opinion that the concepts of knowing holistically and complimentarily define and provide a unified view of knowledge. According to them "knowing'' consists of how individual and group draw on tacit and explicit knowledge simultaneously; how can what individuals know tacitly be made useful to groups and how can explicit instructions be made more useful aids for development of tacit skills.?

Closely related to knowledge and its dimensions is knowledge work, which also seems to lack a precise definition (Collins, 1998). Some authors tried to define it from the activity point of view (UNESCO, 1993; McDermott, 1995; Despres and Hiltop, 1998), Others tried to define it by examining its characteristics (Boland and Tenkasi, 1995; Livari and Linger, 1999; Schultze, 2000;). For instance, UNESCO (1995) defined knowledge work as any creative systematic activity undertaken in order to increase the stock of knowledge of man, culture and society, and use of this knowledge to devise new applications. Alvesson (1993) associated knowledge work with activities performed by managers and professionals who occupy a privileged position because of the knowledge they possess. Boland and Tenkasi (1995) characterized knowledge work as the creation of new understanding of nature, organizations or markets and their application by a firm in valued technologies, products or processes. Schultze (2000) also characterized knowledge work as the production

and reproduction of information and knowledge, manipulation of abstractions and symbols that both represent the world and are objects in the world.

Having defined knowledge and its dimensions as well as knowledge work, it is important that the other aspect of the modern view of knowledge is considered. This aspect as stated by Okunoye (2003) is the management of knowledge. Management as used here is defined by Rowley (1999) as systems or structures that facilitate knowledge work in an organization. It includes proper organization and coordination of people, resources and processes to achieve organizational goals (Edoka, 2000).

What then is knowledge management? It is a new field that draws its definitions from several disciplines, including library and information science. Literature reveals that knowledge management has its origin in information services and management practices (Clair, 2003). In information services, its origin could be traced to the purpose of special libraries (Special Libraries Association, 1999). This general purpose of special libraries captured what special librarians thought of themselves doing, and by that, it can be said that they anticipated knowledge management long before Thomas Stewart identified the management of an organization's intellectual capital as a valuable corporate function (Stewart, 1993). These special librarians see themselves as knowledge professionals who provide focused information and services to a specialised clientele, and the purpose of special libraries is to put knowledge to work (Clair, 2003). What that is of course, is knowledge management, as defined here, and the benefits that KM provides to organization that employs the specialist librarian. In management practice, Tiwana (2000) described chronologically how management of knowledge in business organizations has been coming since 1950's. Tiwana stated that by mid- 1990's KM had become like a management discipline as many people became involved in it especially those seeking new and better ways to manage their organizations. He concluded that by 2000 KM applications became widespread. Many organization including universities and their libraries became interested in KM.

The widespread applications of KM represent the awareness that knowledge is an important organizational resource that needs to be effectively managed to achieve organizational goals. This need has led organizations to establish new staff positions such as knowledge managers and chief knowledge officers (CKO). While the knowledge managers are responsible for the identification, organization and sharing of new knowledge, the chief knowledge officer is responsible for the coordination and organization of knowledge management activities in an organization. Another reason for the widespread of KM is viewed from the benefits of KM to organizations such as libraries. These benefits range from competitiveness to knowledge innovation. However, Jantz (2002) argued that significant process issues must be solved before an organization could capture the benefits of knowledge management. This paper was, therefore, focussed to address this argument by proposing processes for KM applications in libraries.

Because KM is still a relatively new concept and viewed differently by different writers from different focuses, its definitions vary. Two different views emerged from the analysis of the various definitions of knowledge management; project view and process view (Lee, 2000). Some researchers took a project view to define knowledge management (Rowley, 1999; Liebowitz, 2000; Branin, 2003). For instance, Rowley (1999), taking a project view, defined knowledge management as being concerned with the exploitation and development of the knowledge assets of an organization with a view to furthering the

organizations objectives. Based on this view, Rowley (1999) categorized knowledge management into four broad types of perspectives:

- to create knowledge repositories, which store both knowledge and information, often in documentary form;
- to improve knowledge access and transfer with emphasis on connectivity, access and transfer;
- to enhance the knowledge environment so that the environment is conducive to more effective knowledge creation, transfer and use, and which also involves tackling organizational norms and values as they relate to knowledge;
- to manage knowledge as an asset which also includes recognizing the value of knowledge to an organization.

The process view was adopted by many researchers to define knowledge management (Dufffy, 2000; Bukowitz and Williams, 1999). For instance, Duffy (2000) defined knowledge management as a process that drives innovation by capitalizing on organizational intellect and experience. Knowledge management is also defined as a process by which an organization generates wealth from its intellectual or knowledge base assets (Bukowitz and Williams, 1999). It must be pointed out here that these knowledge base assets also include the skills and expertise of employees which must be harvested or leveraged to move an organization to the next level. On this premise, Delong (1997) defined knowledge management as a process of leveraging and articulating skills and expertise of employees, supported by information technology. Holm (2001) taking a process view defined knowledge management as the process of getting the right information to the right people at the right time.

The above views have resulted in the emergence of different schools of thought in knowledge management. These schools of thought have different perceptions of knowledge management. Sveiby (1996) summarized these schools of thought into two. According to Sveiby, the first school of thought believed that knowledge management is about management of information. Researchers in this group view knowledge as objects that can be identified and handled in information systems. They also equate knowledge with information access and their focus is on building and managing knowledge stocks (Alavi and Leidner, 2001). By seeing knowledge management as management of information, these researchers believed that knowledge management is all about technology. The second school of thought believed that knowledge management is about management of people (Sveiby, 1996). The researchers in this group believed on one hand, that knowledge management is concerned with knowledge flows or knowledge processes in organizations. They also believed that these processes are found within the organizational environment and can be identified using knowledge process models.

Having defined knowledge management, it is important that its dimensions are identified. This will help further in understanding the concept of knowledge management. Apart from Brun (2005) who identified three dimensions of knowledge management, other researchers such as Okunoye (2003), and Handzic (2001) identified two dimensions of knowledge management.

The dimensions of knowledge management, according to Brun (2005), include people, process and Technology. People refer to the entire human resources to be motivated and rewarded for creating, sharing and using knowledge in an organization. Processes refer to the internal processes in the organization that are to be structured and organized for

successful knowledge management. Technology refers to the organizational tools that are used to support the people and facilitate the knowledge processes.

In their dimensions of knowledge management, Okunoye (2003) and Handzic (2001) identified processes and enablers. Perhaps, what these authors did was to put people, technology and other element together as enablers. The enablers are the factors in the organizational environment that influence or are related to knowledge management process. These enablers have been described variously in the literature as critical success factors, knowledge management infrastructures and organizational factors. These enablers will be treated in this study as organizational factors. They are factors that an organization needs to put in place for successful knowledge management. Okunoye (2003) summarized the issues raised here thus, "when we talk about knowledge management, we are primarily talking about supporting the knowledge processes with enablers, which, in the present study, are regarded as organizational factors". The implication of the above definition by Okunoye (2003) is that, firstly, the management of knowledge begins with the identification of the internal processes of the organization. Secondly, the enablers or organizational factors that support the processes should be identified.

KM Process in Libraries

The literature is replete with examples of KM processes that are used to define KM applications. Nonaka (1991) defined KM processes as the whole range of activities that support the conversion of tacit to explicit knowledge and vice versa. Nonaka went further to identify these KM processes as consisting of combination, externalization, internalization and socialization. These are also called knowledge conversion processes because they are used to convert from one form of knowledge to another. For instance, combination is used to convert from explicit knowledge to another and internalization is used to convert from explicit knowledge to tacit knowledge. While externalization is for the conversion from tacit knowledge to explicit knowledge, socialization is used to convert from tacit knowledge to another tacit knowledge.

The knowledge management process, according to Davenport (1993), is about acquisition, creation, packaging and application or re-use of knowledge. Galagan (1997) expanded this and proposed knowledge management process that consisted of gathering new knowledge, accessing knowledge, representing knowledge, embedding knowledge, transferring knowledge, using knowledge, facilitating knowledge and measurement. Rufai and Seliaman (2004) provided examples of KM processes as creating knowledge, capturing knowledge, representing knowledge, updating knowledge, disseminating knowledge and validating knowledge. Knowledge is created as people determine new ways of doing things or develop know-how. Sometimes if the knowledge is not residing in the organization, external knowledge is brought in. The knowledge that is created needs to be stored in its raw form in a database. Most organizations use many different types of knowledge repositories to capture new knowledge (Wang, 2002). The new knowledge must be placed in context so that it is actionable. This is the reason why human tacit knowledge is captured and refined along with explicit knowledge. Knowledge must be made available in a useful format to anyone in the organization who needs it anywhere and anytime. Finally, knowledge must be reviewed to verify that it is relevant and accurate.

The KM processes as identified by the Inspection Unit of the International Labour Organization (2004) consist of identification of required knowledge, capturing of knowledge,

organizing of knowledge and sharing of knowledge. Knowledge needs of clients could be found through different mechanisms such as questionnaire, survey and so on. Capturing knowledge may include identifying those external partners that could add value and enhance the knowledge assets of the organizations. Organizing knowledge is achieved by analyzing or creating knowledge. Knowledge creation involves creating databases, building knowledge repositories or data warehouses and mapping sources of internal expertise. Knowledge sharing requires the nurturing of knowledge-based communities of practice.

It is important to note that KM processes are designed to be implemented or to achieve results. According to Martin (2000), knowledge management processes should meet the following five organizational objectives: connect people with other knowledge people, connect people with information, enable the conversion of information to knowledge, make knowledge easier to be transferred, and disseminate knowledge.

Knowledge management in an organization begins with the systematic blending of the KM processes with the organization's normal work processes. This means that the KM processes must be appropriate for the organization. A number of models now exist that can help organizations to identify appropriate KM processes. In other words, applying KM successfully in university libraries requires a model for the identification of KM processes that must cover completely the range of activities in a given area of library services. The success of KM in university libraries also requires a combination of organizational factors.

From the library perspective, the following knowledge processes are being proposed for KM application in libraries:

Knowledge Identification

Knowledge in the context of an academic library can be created through identification or anticipation of the needs of the users. This will enable university libraries provide value –added services to their users. Librarians must embark on knowledge need analysis of users so as to provide quality or user – centred services. It has been found that the librarians can achieve this through careful study of the university curricular, linking library services with the university's academic programmes, participating in the teaching and research activities in the University, and finally through participating more in user's reading (Maponya, 2004). Therefore, knowledge identification refers to the knowledge activities aimed at identifying users' needs and requirements for the purpose of providing them with a variety of quality services. It is the first step in the knowledge processing chain.

Knowledge Acquisition

This is the second step in the knowledge processing chain in any organization such as libraries. Knowledge acquisition refers to knowledge activities directed at seeking and obtaining knowledge from the external sources and also from the internal environment. Generally, Maponya (2004) suggested that knowledge in academic libraries can be acquired through establishing links or networking with other libraries and with institutions of all kind, attending training programs, conferences, seminars and workshops, and buying knowledge products or resources in the form of manuals, blueprints, and research reports.

To capture internal knowledge, it has been suggested that academic libraries should devise systems to identify people's expertise and develop ways of sharing it. This requires a formal process, which includes collating internal profiles of academic librarians and also standardizing routine information (Maponya, 2004). Another approach is to begin to develop innovative ideas to add value to services. For instance, the type of enquiries that are most commonly received at the reference desk should be captured and placed within easy reach to

better serve users. This can be achieved by creating a folder of frequently asked questions (FAQ). Apart from the fact that this will help librarians to provide in –depth customized reference service, it will also help them to become knowledgeable about handling different enquiries (Maponya, 2004).

Knowledge Organization or Creation:

This step ensures that knowledge captured is organized into easily accessible formats. The convenience of the user is usually considered in organizing knowledge /information for their use. This process usually results in creation of knowledge products and services targeted at satisfying the escalating needs of users, or helping them to get the right information at the right time (Holm, 2001). Knowledge organization is defined as the analysis of information gathered from internal and external sources to create new knowledge or new knowledge products. Some of these knowledge products include lecturers' profile, database of experts, users profile and so on (Todd and Southon, 2007). In this study, knowledge organization and knowledge creation will be used interchangeably. Knowledge organization or creation is all about development of new ideas and new solutions aimed at meeting the needs of library users.

Knowledge Dissemination:

This is the fourth and last step in the model and it ensures that knowledge resources in the library are made available to users. This can be achieved through established system of communication between university libraries and their users. Knowledge dissemination refers to the knowledge activities aimed at making knowledge resources and services accessible to users. Kim (2004) noted that librarians should be able to extract, filter and disseminate external knowledge. Choo (2000) stated that, in libraries and information centres, knowledge can be disseminated through a variety of knowledge assets such as library alert system, library mailing lists and so on. It can also be disseminated through the use of new technologies such as groupware, internet/intranet and other discussion support systems (Rufai and Seliaman, 2007).

The management of the above knowledge processes requires that there must be systems and structures in place to facilitate them in organizations (Bobby, 2006; Zack, 1999). Libraries have been identified as one of the service-oriented organizations where knowledge management can be applied. University libraries the world over are applying knowledge management to provide better services for their users (Maponya , 2004). It is, therefore, important to examine the organizational variables known as KM enablers that could facilitate the process of KM applications in libraries.

KM Enablers

KM enablers are factors within the organizational environment that can influence KM applications. It has been found that successful application of knowledge management in an organization depends on the existence of a delicate blend of these factors (Holsapple and Joshi, 2000). There have been attempts by researchers and practitioners to identify these KM enablers also known as organizational factors (Holsapple and Joshi, 2000; Bobby, 2006; Jalaladeen, Karim & Mohammed, 2008). Literature reveals that there is a diverse list of organizational factors for successful application of knowledge management, and this list is by no means exhaustive. However, Bobby (2006) suggested that organizations need a much smaller core set of these factors to succeed in their application of knowledge management.

To identify the small core set of the organizational factors, this research relied on Holsapple and Joshi's (2000) study. Holsapple and Joshi carried out a literature review that

yielded eight factors that potentially influence knowledge management in organizations. The eight factors include culture, leadership, technology, organizational adjustments, evaluation of knowledge management resources/activities, employee motivation, and external factors. The authors expanded these eight factors to have eighteen factors, and they grouped them into three categories of influences on knowledge management. They are managerial influences (leadership, coordination, control and measurement), resource influences (human, knowledge, financial and material), and environmental influences (fashion, markets, competitors, time, technology, governmental/economic/political/social/educational climate). The authors described these influences as the three major kinds of forces that influence knowledge management in organizations.

In order to keep the number of organizational factors to the barest minimum as suggested by Bobby (2006), this research selected at least one factor from each of the influences on KM identified by Holsapple and Joshi (2000). Based on this, the selection was made as follows; leadership (also described as top management leadership), coordination (which involves compensation schemes), measurement (which involves collaboration), human resources and technology. Therefore, the organizational factors selected from the above three forces that influence knowledge management include: top management leadership, human resources, compensation schemes, collaboration, and technology.

There are four reasons why the above factors were selected. Firstly, these factors covered the three major influences on KM by Holsapple and Joshi (2000). Secondly technology was selected from the environmental influences because it appeared in the literature as the first approach to knowledge management solutions. Thirdly, the other factors selected were mixtures of managerial and resource influences, and they corresponded with the critical success factors for knowledge management identified by Bobby (2006). Bobby summarized these factors as top management leadership, compensation schemes, collaboration and quality of knowledge. Bobby identified these factors from Holsapple and Joshi's (2000) study which found leadership, coordination, and measurement as critical success factors for KM applications. From the Bobby's factors above, the quality of knowledge was dropped because the present research was not intended to develop knowledge management systems, or to determine factors related to the knowledge management systems success. Fourthly, they are factors within the organizational environment.

However, technological solution to knowledge management has been criticized in the literature (Brun, 2005). A study conducted in 1999 by Teletech Resource Corporation looked at 93 KM applications at 83 different companies. The study indicated that only 32% of the KM applications were technology – driven (Holowetzki, 2002). Though IT-based approaches to knowledge management dominated the early literature on the subject (Blackler 2000), literature now reveals that the efforts of many companies to manage knowledge using specific technology applications have not achieved their objectives, and many company executives have become disillusioned with the practical ways to manage organizational knowledge (De Long,2000)

Lee (2005) also argued that an organization could start to manage its knowledge with any available computer systems. This implies that an organization should not wait to procure enough technological infrastructures, before it would begin to apply knowledge management. Other authors have also argued that knowledge management technologies are very expensive and so attention should be more on factors that promote knowledge management within the organization other than these technologies (Blackler, 2000). In

summary, Zack (1999) maintained that technology accounts for 10% KM success in an organization, while the remaining 90% can be linked to other factors including the human resources.

In view of the above, the technology factor was dropped, thus reducing the core factors identified for application of knowledge management to four. These factors are: 1) top management leadership, 2) human resources, 3) compensation schemes, and 4) collaboration.

Top Management Leadership

Top management leadership refers to the extent to which knowledge management efforts are promoted by the top management of the firm, where top management refers to the individual or individuals responsible for allocating resources for knowledge management and for specifying the knowledge management programmes for the organization (Rai and Bajwa, 1997). According to Kim (2004), past research suggests that lack of commitment of top management will result in KM failure. Numerous articles have emphasized the need for an executive sponsor or KM champion, someone to take charge of knowledge management activities in an organization (Ambrosio, 2000, Huber, 2001).

Human Resources Policy

Human resources policy defines the activities that are intended to encourage staff to participate in knowledge management. Lim and Klobas (2000) stated that having strong human resources policies in an organization will affect the ways in which an organization manages its knowledge. This view was supported by Holowetzki (2002) who argued that the human resources and culture are the driving factors that determine the success or failure of knowledge management initiatives. Edem and Ani (2010) maintained that human resources management is the core of knowledge management in libraries. They stressed that libraries and librarians should attach importance to vocational training and life long education for enhanced productivity and effective performance.

Compensation Schemes

Compensation schemes consist of activities that motivate staff to embrace KM. According to Nidumolu and Knotts (1998), compensation schemes refer to mechanisms developed in the organization to recognise and appreciate the KM behaviour of staff. Leonard (1999) argued that compensation schemes or reward systems could determine how knowledge is accessed and how it flows in organizations, while O'Dell and Grayson (1998) maintained the compensation schemes can motivate staff in an organization.

Collaboration

Collaboration is defined as the extent to which individuals actively communicate, cooperate and help one another in their work by sharing knowledge and expertise with one another (Hurley and Hult, 1998; Rus and Lindrall, 2002; Lee and Choi, 2003).

Collaboration as an organizational factor for application of knowledge management demands that individuals must give what they have. What is required in this context is personal knowledge. According to Nonaka (1991), new knowledge always begins with the individual. This personal knowledge should be transformed into organizational knowledge valuable to the organization as a whole (Bobby, 2006). Making personal knowledge available to others is the central activity of the knowledge creating organizations such as universities.

KM roles for librarians

Knowledge management represents an opportunity in the sense that it creates new staff positions and new roles for librarians. Rooi and Snyman (2006) employed a content analysis approach to identify five broad roles for Librarians; facilitating an environment

conducive to knowledge-sharing, managing the corporate memory, transfer of information management and related skills to a next content that is linked to business processes and core operations, development of corporate information literacy, and finally, management of information in a digital/electronic environment. From the knowledge creation perspective, this paper proposes the following as the new roles of librarians in the knowledge management environment.

Creating database of staff publications:

Staff publications represent the intellectual heritage of each university. They are produced mostly in the course of employment and provide information that could be of high research value and relevance to undergraduates, graduates and younger academics, but the existence of these publications is hardly known and this is the vital role that the database of staff publications will fulfil. Since a database is a collection of structured intellectual works stored and accessed for information by electronic means, the database of staff publications will serve as a repository of information and knowledge generated in our university system. Since bibliographic availability is a necessary condition to indicate or alert on publication availability, librarian's role in knowledge creation is in the critical area of providing bibliographic information on publications of university staff.

Creating database of experts:

Nigerian universities fall within the classification of knowledge institution. They belong to the knowledge industry and knowledge economy. They can boast of the best scholars and researchers and there are experts in various fields of human endeavour like agriculture life or biological sciences, physical sciences, social sciences, anthropology and fine and applied art. Many of them have served as experts in international institutions like the World Bank, Unesco and .other national and international research institutions and agencies. A database of experts will provide comprehensive information on the human resources capabilities of our university system and librarians are in the best position by training and work experience to serve as creators of database of experts. Vital data or information to be included in the database are name, qualifications, areas of previous and current research interests major achievements, contact addresses and hobbies.

Creating database of staff profile:

Although this is related to the issue of creation of database of experts, the database of staff profile will go further to include pictures, photographs of staff and their comprehensive curriculum vitae (CV) which are structured in such way as to be uploadable to the university website.

Data analysis report*:*

A huge volume of information generated in our universities consists of data analysis reports. These data analysis may be contained in undergraduate works, doctoral theses and dissertations, subject-based results of experiments both in-laboratory and on-field. The existence of these reports is hardly known because majority of them are in the grey literature category. Librarians should use their skills to compile a comprehensive data analysis reports existing in the university.

Indexing of knowledge generated in the university:

Indexes are metadata systems that provide a vital bridge between the end user and the information he requires. Without these bridges, the existence of the needed information will hardly be known. It is therefore required that librarians should use their skills as

indexers, bibliographers and abstractors to build bridges across the knowledge systems existing in our university.

Cataloguing of online resources.

As more and more of the information resources of university system migrate to online platform, there is still the need to establish order in that frontier. This is necessary to ensure the retrieval of accurate information. Librarian's role in the knowledge environment will be that of knowledge systematization which will ensure that knowledge is properly catalogued and classified in the online environment.

Model of KM Application

Figure I presents the model of KM application or practice, which has been developed based on the enablers and processes identified in the field of knowledge management. Accordingly, this research proposes that KM practice or application can be observed as per the model that involves the following:

Enablers ⟶ processes ⟶ roles ⟶ improved performance

Consequently, this study postulates that KM application in a library begins with the identification of knowledge processes that define KM activities which must be facilitated by enablers to enable librarians play KM roles leading to improved performance in their respective libraries.

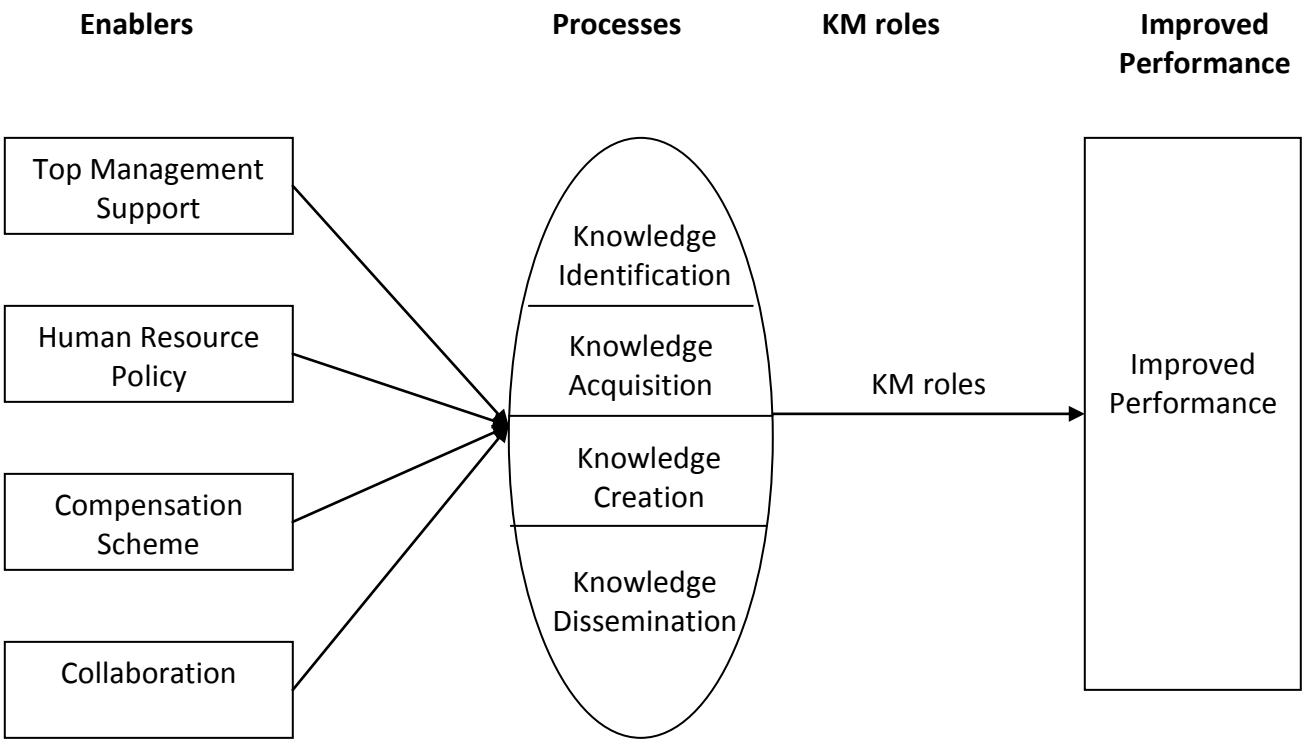

Figure 1: Model of KM application

Recommendation and Conclusion

Knowledge management has been found to be a useful strategy for the survival of libraries in an era characterized by budget shortfalls, increasing competitive information environment and serious information overload due to advances in technology. In other words, KM can be used to gain competitive advantage, to break economic and technological constraints, and to satisfy the information needs of library users. These benefits imply that professional librarians and the entire library and information staff should work closely together to put measures in place to ensure that KM takes its root in improving library and information services. These measures include:

1. Creating a learning environment: Learning organization environment is one of the conditions for the success of knowledge management. A conducive learning environment should be created. This is an environment that encourages staff to be at their best, to help one another and to become what they want to be. Team working and mentoring are characteristics of a good learning environment. Library managers are expected to ensure that a good learning environment is created to help staff refurbish themselves for KM applications.
2. Developing knowledge enabling technologies: Information technology (IT) is one of the drivers of KM in organisations. IT can support KM by facilitating the process of

organisation, storage, retrieval, dissemination and sharing of explicit knowledge and information rapidly in the organisation. It also helps to connect people with people. It must be noted that technology is not an end in itself but the means to an end. Libraries should therefore formulate IT policies to ensure that IT infrastructures are fully developed to include collaborative tools for the capturing and sharing of tacit knowledge of staff.

3. Developing of central knowledge repository: A central knowledge repository is an essential feature of knowledge management. This is because KM sees knowledge broadly or holistically. What this means is that KM is applied for organisational improvement and productivity. It considers the entire organizational knowledge. That is, it does not consider the library in isolation, rather it considers the knowledge generated in the university of which the library is an essential part. Therefore, it is very crucial to have a central knowledge repository for the university and not for the library. This will help to adopt KM successfully in the library.
4. Development of a strategic plan: Knowledge management is visionary and is based on a strategic plan. This means that KM cannot be practised without having a strategic plan. Library managers should create work-related knowledge required by the staff as one of the preparatory steps for KM adoption. They are also to identify knowledge required in the library within a specified period of time. This is because knowledge identification is the starting point of KM in any organisation. This will help to attract, recruit and retain staff for KM applications.
5. Creating knowledge sharing culture: Knowledge sharing is one of the important tenets of knowledge management. A culture that facilitates knowledge sharing needs to be created to ensure the success of KM in the library. This requires that library managers should develop incentive, reward programmes, and possibly re-align them with the human resources policy in the library. Also, professional discussions and other similar meetings should be established in the library to encourage staff to share their knowledge and experiences. This is because librarians, according to Jain (2007) need to share their intellectual and operational knowledge within and outside the library.

The above recommendations are policy considerations or issues for successful KM applications in libraries. Aside from these considerations, KM application or practice in most effective where enablers are put in place to facilitate KM activities defined by knowledge processes such as knowledge identification, acquisition, creation and dissemination. Therefore, KM in a library should be seen as supporting knowledge processes by enablers with a view to furthering the objectives or goals of the library.

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