

Knowledge Management in the 21st Century: a Librarian's Perspective

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Abstract²

This paper looks at knowledge, knowledge management, stages of knowledge management, knowledge management tools as well as strategies of efficient knowledge management use. The information age has made knowledge the key to competitiveness. In today's world, knowledge dominates and has to be effectively managed in order to increase organizational effectiveness. Knowledge management, if properly harnessed, has the potential to be of great benefit to organizations, academic libraries inclusive. This is because it would equip them with the capabilities to not only effectively navigate the increasingly complex knowledge landscape wrought by technological development but also adequately attend to the needs of a more enlightened and tech savvy generation of users.

Keywords: Knowledge, Knowledge Management, Information Age, Knowledge Dissemination, Librarianship

1. Introduction

Knowledge could be seen as applied information. Information, of itself is simply information. It is when this information has been internalized and used to deal with a specific situation that is when it could be referred to as knowledge. This implies that the information has to transform itself from the realm of simply existing (information) to the realm of being useful (knowledge). It is worthy of note that this transformation process requires active human participation.

Sood and Chaubey (2011) describe knowledge as the full utilization of information and data, coupled with the potential of people's skills, competencies, ideas, intuitions, commitments and innovations. They also define knowledge as an intellectual capital when people out of creation add value to information. Sood and Chaubey classify knowledge into three as follows:

- Tacit – This is personal knowledge that lies in the human mind and is difficult to formalize and communicate
- Explicit – this is knowledge that is formal and easy to communicate to others. It is knowledge that has been captured in some sort of tangible form such as words, images, audio and video recordings
- Cultural – this is knowledge which includes assumptions and beliefs. It is used to understand, describe and explain the reality as well as conventions.

In today's world, knowledge is king. Knowledge is probably the primary and most important factor before any other factor. In other words, knowledge dominates. Some would wonder why knowledge is of such importance. The simple answer to such ruminations is that human beings are now living in a knowledge-driven economy. An economy where knowledge, rather than capital, labour or any other resource, is the foundation and of paramount importance. Some have even referred to knowledge as being the

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² **To cite this article:** Akintomide Olatunji Adimabua (2015). Knowledge Management in the 21st Century: a Librarian's Perspective. Journal of Education and Literature, 3(2), 72-80.

be-all and end-all. This brings to the fore that in the information age which we live in, knowledge rather than physical resources is the key to competitiveness. As knowledge is such an important commodity in our present society, it stands to reason that this knowledge should be effectively managed. Efforts should be made to not only manage this knowledge, but also preserve it to ensure it is easily transferred from generation to generation. In other words, knowledge management is a key concept that must be mastered in order to get the best out of available knowledge.

From its humble beginnings, libraries have, till today, been closely associated with the concepts of knowledge and information (Issa, 2009). He goes further to say that knowledge and information have remained the “focus of interest” of libraries and librarianship which is probably why libraries have been variously referred to as “purveyor of information”, the “custodian of knowledge”, the “house of learning”, among other names all of which point to this inextricable relationship between libraries and the concepts of knowledge and information. Since time immemorial, libraries and librarians have played key roles in the collecting, storing, organizing and disseminating of knowledge because librarians and information professionals are trained to be experts in information searching, selecting, acquiring, organizing, preserving, repackaging, disseminating and serving (Yaacob, et al 2010). According to Kademani et al (2003) the basic objective of a library is to collect, organize, preserve and provide access to knowledge and information. The Mortenson Center for International Library Programs (MCILP, 2004) agrees with this assertion by describing the mission of every library as being to facilitate access to systems of knowledge relevant to the pursuit of inquiry and study. In other words, libraries are in a pole position when it comes to issues bordering on knowledge and information and should be in the forefront when it comes to collection, organizing and sharing of knowledge.

The rise of the internet brought dire predictions about the obsolescence of libraries. People might ask themselves why they should bother going to a dingy building to look for information when one can easily log onto the internet from a myriad of devices and access all sorts of information from virtually anywhere? This, more than anything, makes the role of libraries and librarians even more important. A view shared by Yaacob et al (2010) when they argue that libraries are not only crucial, but librarian’s role as knowledge providers have become even more significant. Someone has to help users navigate through this convoluted knowledge landscape. Someone has to help users sort through what is useful and what is not useful. Someone has to bring the user to the information that suits his/her specific requirements. In addition to serving as a gateway to this information, someone has to master knowledge in all its ramifications both within and outside the organization so as to offer relevant services and improve their effectiveness. Who is in a better position to do this than libraries and librarians? McKnight (2006) is of the opinion that library and information professionals have a significant role and expertise in managing vast amounts of information, of enhancing information resource discovery, ensuring quality control, providing information management and information literacy skills training and connecting people with the resource they require. This point of view further underlines the importance of libraries and librarians and is an indication that they cannot be relegated to the background as at this point in time or at any time in the near future.

According to Issa (2009) libraries are living agencies of progress, cultural enrichment and public enlightenment as they are not only embedded in the foundations of cultural process, they also form part of the foundations of a civilized life. These lofty ideals can only be accomplished by libraries when there are adequate knowledge management and preservation procedures available. It is therefore vital to have a firm understanding and grasp of not only knowledge management and preservation but also its applicability in the library setting.

2. Knowledge Management

In the earlier definition of knowledge, it was surmised that there is a process that information has to go through to be transformed into knowledge. This process of transforming information into knowledge is what is referred to as knowledge management.

A definition of knowledge management is actually hard to pin down as so many authors have taken a stab at explaining what exactly it is. This view is shared by McKnight (2006) when he says there are many different meanings of knowledge management many of which overlap. He sees knowledge management as comprising a range of practices used by organizations to identify, create, reproduce and distribute knowledge for reuse, awareness and learning. According to Dalkir (2005), knowledge management is the deliberate and systematic coordination of an organization's people, technology, processes and organizational structure in order to add value through reuse and innovation. Malhorta (1997) defines knowledge management as catering to the critical issues of organizational adaptation, survival and competence in the face of increasingly discontinuous environmental change as well as an embodiment of organizational processes that seek synergistic combination of data and information processing capacity of information technologies and the creative and innovative capacity of human beings. Gartner Group (2005) defines knowledge management as a discipline that promotes an integrated and collaborative approach to the process of information asset creation, capture, organization, access and use.

In librarianship, according to Asogwa (2012), knowledge management is the creation, storage and collaborative sharing of employees' information within the academic library environment. He goes further to say that knowledge management in academic libraries may include the following:

- A process of collecting, organizing, classifying and disseminating information throughout a library so as to make it purposeful to those who need it
- Capturing tacit and explicit knowledge that employees really have but are needed by the employer and the users in the library and filter the surplus out
- Involves identification of categories of knowledge needed to support the overall library activities by combining indexing, searching and technology to help libraries in organizing data stored in multiple sources and deliver only relevant information to users

Knowledge management has a lot of similarities with collecting, organizing, storing and transmission of knowledge, which is the main function of libraries and librarians. Knowledge management is not a new phenomenon and has, in all likelihood, been in existence since the first libraries in Alexandria. According to Hazeri, Martin and Sarrafzadeh (2009) knowledge management should not be regarded as a new phenomenon as librarians have always operated as intermediaries between people who have knowledge and those who need to know.

Lee and Guthrie (2010) assert that there is a growing awareness that know-how adds significantly to the value of a business and in some cases, represents almost the entire value base. Some are of the opinion that application of knowledge management allows organizations to not only change the way they function, but also enable them keep up with future trends and staff change. When one knows how to do something better than someone else, one usually has an advantage over the less informed individual. Small wonder that both the business world and academia have taken to knowledge management like fish to water as they have seen merits of adopting knowledge management. The marked difference between the world of business and the world of academics is that businesses look to knowledge management to foster competitive advantage while academia look to knowledge management to promote sharing of knowledge as well as the expansion of knowledge frontiers.

Whether the key objective of academic libraries is to provide resource and information services to support the university community, the key resource that is required is knowledge of not only library operations, but also knowledge of library users and their needs, knowledge of library collections, knowledge of library facilities as well as knowledge of technologies available. Knowledge of these must be put together so that new knowledge is created and subsequently lead to the development and improvement of services to the users (Asogwa, 2012).

3. Stages of Knowledge Management

There are three major stages of knowledge management as follows:

- Knowledge capture and codification
- Knowledge sharing
- Knowledge application

Knowledge capture refers to the identification and recording of existing knowledge (both internal and external) as well as the development of new knowledge, ideas or innovations which previously did not exist. When this is done, the next logical step is to assess what has been recorded along specific institutional goals to determine whether it is valid, whether it is an improvement on what previously obtained and whether it is of sufficient value to warrant sharing and dissemination. If it is discovered to be of value the next step is to contextualize the said knowledge, that is, maintain a link between the knowledge and those knowledgeable about the content as well as identify key attributes of the content in order to better match it to a variety of users. Contextualizing knowledge is done so as to better understand it and better use it (application).

Knowledge Capture and Codification

Knowledge capture could be quite challenging especially tacit knowledge which is non-formalized knowledge in the human mind unlike explicit knowledge which has already been captured in some sort of tangible form. Whether tacit or explicit, once captured, this knowledge has to be organized in a kind of structured manner that lends itself to multipurpose use by someone else at a later date.

A number of techniques could be used to capture knowledge as follows:

- Road Maps – facilitated problem solving meetings that are convened to solve day to day problems in a public forum which often leads to development of guidelines and even standards for continuous process improvement
- Action Learning – groups formed by participants who share common issues, goals or learning needs that meet regularly, report on progress, brainstorm alternatives, try out new things and evaluate results
- Adhoc Sessions – short brainstorming sessions which could be via face-to-face meetings, instant messaging, email, teleconferencing, etc. of informal professional network mobilized rapidly in response to members call for help
- Learning from Others – this could involve learning the best practices of leaders through site visits, publications etc., then adapting and adopting what was learnt. It could also involve attending conferences, workshops, inviting guest speakers, etc.
- Grafting – learning process whereby organizations gain access to knowledge that was not previously available to them and could be achieved through mergers, acquisitions, employing new experts, etc.
- Experiential Learning – knowledge acquired by doing and practicing

It should be noted that no single method is to be used exclusively but rather a combination of all or a select few, as dictated by the requirements of the organization in question, would better serve the knowledge capture requirements of any organization. It is also vital that records generated such as original transcripts, recordings, reference materials, key findings, etc., from such methods be judiciously kept. Such information should be systematically recorded and carefully organized in some sort of knowledge repository.

After capturing the knowledge the next step is to codify it in such a way that it can be easily shared, understood, maintained and, if need be, improved upon. This can be done through techniques which include:

- Knowledge Taxonomies – a graphical representation of knowledge in such a way that it reflects the organization of key concepts within a particular field of expertise
- Decision Trees – also graphical, usually in the form of a flow chart showing alternate paths which indicate the impact of different decisions being made at particular points in a process or activity

- Cognitive Maps – a mental model of a person’s knowledge. It is a very powerful codification tool as it captures context and complex interrelationships between different key concepts as well as individual views, perceptions, judgments, beliefs, etc.
- Creating knowledge repositories – usually intranets or portals of some kind that serve to preserve, manage and leverage organizational memory

Knowledge Sharing

Learning is essentially a social activity and as such knowledge management needs to view knowledge as something that is actively constructed in a social setting (McDermott, 2000). Knowledge is easily shared when it is visible, that is, explicitly determining who knows “what”, where “what” is, who is an expert in a particular process or function so that anyone who needs help in any particular field, process or function knows who to contact or where to go searching for the information. Establishment of knowledge sharing communities, community yellow pages and communities of practice, e-mail and other push technologies that notify users of changes to knowledge, etc. also helps in sharing knowledge throughout an organization. According to Jarrar and Zairi (2000), knowledge sharing processes could also include searching, evaluating, validating, implementing, reviewing and routinizing.

Benefits that could be derived from knowledge sharing include:

- Linking professionals
- Learning from others experiences and avoiding mistakes
- Reducing time to talent
- Reputation building

Knowledge Application

Knowledge management can only be said to be successfully completed if the captured, coded and shared knowledge is put to use. Anything short of this implies that the entire knowledge management exercise has been an effort in futility. To ensure optimal application of knowledge it is absolutely vital to understand individual characteristics such as personality style, learning preference, information receipt preference, among others, which play a role in how effective the said individual would be at finding, understanding and making use of organizational knowledge (Dalkir, 2005). Not only is it important to have an understanding of the individuals characteristics, but it is also equally important to know what the individual is doing or what he or she is trying to accomplish in order to offer the best support possible that would ensure effective application of knowledge. Sometimes this might even involve re-contextualization, which is, making the knowledge specific to the situation at hand. All in all, the easier people locate, understand and internalize knowledge, the easier it would be for them to apply the knowledge to whatever situation might be staring them in the face.

4. Knowledge Management Tools

A varying number of tools come into play at different stages of the knowledge management process. It is worthy of note that these various tools need to be combined appropriately depending on the requirements of the organization in question. According to Ruggles (1997), knowledge management tools are tools that:

1. Enhance and enable knowledge generation, codification and transfer
2. Generate knowledge (e.g. data mining that discovers new patters in data)
3. Code knowledge to make knowledge available for others
4. Transfer knowledge to decrease problems with time and space when communicating in an organization

Bearing this in mind, knowledge management tools could include:

- Blogs – otherwise known as a web log, it is a frequently updated, publicly accessible journal that is used by individuals, businesses, policy makers, libraries, etc. to share information and communicate with their patrons, customers, etc.

- Teleconferencing – a conference with participants in different locations linked by communication devices like telephones, etc.

- Videoconferencing – communication between multiple people in different locations where participants can not only hear but also see the other participants

- Chat Rooms – synchronous text-based media through which individuals communicate with one another in real time via a web server

- Newsgroups – used for messaging large groups of people and they show messages to a user when explicitly requested for

- Mailing Lists – essentially the same thing as newsgroups, the only difference being that rather than messages being delivered when requested, they are delivered as they become available

- Wikis – web-based software that supports concepts such as open editing which allows multiple users to create and edit content on a website. Wikis could be public or corporate

- Knowledge Repositories – Collection of declarative knowledge (concepts, categories, definitions, assumptions – knowledge of what), procedural knowledge (processes, events, activities, actions, manuals – knowledge of how or know-how), causal knowledge (rationale for decisions or rejected decisions – knowledge of why), and context (circumstances of decisions, informal knowledge, what is and what is not done – knowledge of care-why)

- Knowledge Portals – a means of storing and disseminating organizational knowledge such as business processes, policies, procedures, documents and other codified knowledge

- Decision Support Systems (DSS) – designed to facilitate decision making by providing tools for brainstorming, critiquing ideas, putting weights and probabilities on events and alternatives and voting

Other examples of knowledge management tools include e-mail, expert systems, Electronic Performance Support Systems (EPSS), intelligent filtering tools, statistical analysis tools (e.g. SAS), data mining suites (e.g. EnterpriseMiner), Web Miner, e-mail, collaborative mining systems, workflow systems, newsletters, instant messaging, news aggregators, etc.

5. Strategies to Ensure Efficient Use of Knowledge Management

The first thing to be done to ensure successful knowledge management is to engage every single individual in the organization from the most senior to the most junior in the discussion about knowledge management and help them understand what the benefits could be for them. This serves as an opportunity to not only enlighten everyone about the advantages but to also get their own input on pitfalls to be avoided.

Robertson (2004) is of the opinion that a good knowledge management strategy should identify the key needs and issues within the organization and provide a framework for addressing these issues. These issues could include anything from imminent retirement of key personnel to need for innovation to compete in a dynamic, challenging business environment to the need and internal efficiencies to reduce cost and effort.

It is also necessary to establish laws and principles which would guide knowledge management strategies. McKnight (2006) says that establishing principles that would guide the information management and knowledge management strategies are crucial as they provide checklists against which decisions can be made about future policies, practices and systems. Embedding these principles within the organization is critical if there is to be a clear understanding about the value of information and the value of sharing knowledge across the organization.

Including information management and knowledge management principles in induction for new staff (so that they are made aware of the principles and the implications for these in their work), performance development and review (requiring objectives and targets that demonstrate alignment with the information management and knowledge management strategies and principles; codifying at least one or two pieces of knowledge that may not be known by other employees) and in the job descriptions (explicitly setting out expectations regarding information management and knowledge management) are ways of achieving this.

With the above in mind, a good knowledge management strategy should have the following components:

- 1) A well-defined organization strategy (This could include mission statement, products/services offered, clientele, etc.)
- 2) A description of organization-specific knowledge-based issues such as need for collaboration, addressing information overload, etc.
- 3) An inventory of available knowledge resources in the organization
- 4) An analysis of what can be done with the identified knowledge resources
- 5) Procedures and modalities for updating and improving knowledge resources

6. Conclusion

Information is becoming more diverse. The sheer volume of information that the average man has to deal with in this day and age can be absolutely staggering. The technologies that enable communication and collaboration now associated with web 2.0 and library 2.0 enable individuals to create information and repurpose information in ways previously unimagined (McKnight, 2006). Information and communication technologies have created the knowledge society which would impact the whole world. Librarians and information professionals need to realign their services in line with the knowledge demands of their users. Essentially Libraries need to not only contribute in their traditional ways (providing access, working in partnership, structuring knowledge, imparting skills, preserving heritage and inspiring trust) but they also need to move forward and reinvent themselves in order to keep pace with the ever changing knowledge landscape so as to avoid becoming obsolete. It's expedient that today's librarians should have appropriate ICT skills in addition to their normal information literacy and research skills.

In today's networked environment, any library action must be part of a wider institutional infrastructure committed to furthering new educational approaches (Kumar, 2010). To do this there must be a strong communication and an effective partnership between the institutions library and its ICT department. Information technology is very important in today's libraries as it enlarges the scope of knowledge acquisition, increases knowledge acquisition speed as well as reduces cost. It is worthy of note, at this point, that caution needs to be exercised that technolust (technology for the sake of technology) does not set in. Librarians need Technologist's systems, computing, network and other technical expertise while information technologists can learn much from the libraries knowledge of users' needs. This is a symbiotic relationship that should, as much as possible, be encouraged. A lot of the time we find librarians at loggerheads with information technologists and vice versa. But for a beneficial and successful environment it is vital for both parties to be in harmony and indeed complement one another in a manner that facilitates their learning from one another.

With knowledge management around us in the 21st century, academic libraries are assigned newer and more challenging roles because an economy built on knowledge is much different from one built on physical resources. Nowadays librarians have to look to more creative ways of meeting the information needs of their patrons' above and beyond the traditional means of simply adding to their collections. In fact, a library's status is no longer defined by only the collection it houses but it is extended to include online and seamless access to information resources (Kumar, 2010). Budd (1998) suggested that changes wrought by electronic media requires a transformation in the way librarians think about their jobs, the users of information and the

communication process of which they are part of and they must strive to remain competent navigators of each medium in order to adequately assist library users. Indeed Asogwa (2012) believes that librarians have to be willing to move outside the walls of the traditional library and work assiduously with technologists, faculty and students. Nowadays libraries have to ensure that many, if not all, of their services have to be available online as most of their patrons are no longer bound by time and space and may wish to learn and access information at any time of the day from anywhere in the world even from their own personal learning space. This is probably why Sood and Chaubey (2011) state that the new roles of libraries in the 21st century need to be as learning and knowledge centers for their users. They are also of the opinion that as a result of the exponential growth in human knowledge in a variety of formats, libraries need to develop their resources, access and sharing strategies from printed to electronic digital resources and also having the burden of limited funding, technology, staff and space, libraries must carefully analyze the needs of their users and seek to develop cooperative acquisition plans to meet the needs of users.

Asogwa (2012) enunciates that in this fundamental shift in the way libraries attend to their patrons, academic librarians would be:

- Knowledge management developers working more closely with faculties and students to design, organize and maintain a broader range of digital assets; they are knowledge brokers that have a network of contacts as consultants and specialize in providing expert advice within and outside the library

- They are knowledge management integrators who have a more active role in the educational and research mission of university, integrating information resources and services in their course and research projects and at the same time knowledge gatekeepers who are acting as subject experts

- Academic librarians are knowledge management educators who are teaching and training students and faculty in information literacy programmes and how to organize, preserve and share their own information resources

- As research assistants for both personal and professional development and for providing up-to-date assistance to library users, they are also knowledge editors that repackage knowledge into the most accessible and most appropriate formats for patrons

- Knowledge management researchers applying library and information science and new digital technology to create new organizational (metadata), retrieval and storage (preservation) options

Knowledge is a key asset of any organization, some might even go as far as saying knowledge is more important than the classic assets of facilities, labor and capital and even though higher education has long held scholarship as an asset, it must now recognize the value of organizational knowledge applied to organizational processes and services. Thus it is clear that knowledge management has a significant future in academic libraries and the academic institutions which they serve.

Every organization and institution generates huge amounts of information and without effective management, it is more or less useless. It is at this point that Knowledge Management comes in as it is a means through which organizational knowledge can be effectively harnessed and put to good use. Knowledge management is no longer a fad and should be a key part of any respectable forward-looking library's knowledge strategy.

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