



IMPLEMENTING KNOWLEDGE MANAGEMENT IN TECHNICAL LIBRARIES: AN PROFESSIONAL APPROACH

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Abstract

Knowledge management (KM) is an emerging field, much touted or hyped since late 1990s. However, due to the complicated nature of knowledge per se and its consequent management, it is often difficult to estimate or demonstrate the value of knowledge management. Technical libraries, with limited budget and human resources, may hesitate to follow the business sector and plunge into the uncharted sea of knowledge management. This paper suggests a pragmatic approach to the implementation of Knowledge Management for Technical libraries: utilizing the existing staffing, technology, and management structure.

Introduction

The concept and name--“Knowledge Management”--was started and popularized in the business world during the last decade of the 20th century. It was the business world that first recognizes the importance of knowledge in the “global economy” of the “knowledge age”. In the new knowledge economy, the possession of relevant and strategic knowledge and its unceasing renewal enables businesses to gain competitive advantage. The applications of knowledge management have now spread to other organizations including government agencies, research and development departments, universities, and others. The management of information has long been regarded as the domain of librarians and libraries. Librarians and information professionals are trained to be experts in information searching, selecting, acquiring, organizing, preserving, repackaging, disseminating, and serving. However, professionals in information technology and systems have also regarded information management as their domain because of the recent advances in information technology and systems which drive and underpin information management. One of the clearest evidences of this is that the positions of “Chief Information Officer” (CIO) in many organizations are generally held by information technologists instead of librarians. In fact, most of the work of CIOs has to do with developing and managing the IT infrastructure and systems, not the managing of information per se.

Technical libraries are information centers established in support of the mission of their parent institutions to generate knowledge, and people equipped with knowledge in order to serve the society and advance the well-being of mankind. In the digital age, Technical libraries face challenges from both within (academia) and without (the business sector). Technical departments, or even faculty and students, may purchase or build their own portals to meet their technical and/or research needs. Will that marginalize the services provided by technical libraries? Commercial companies have entered the field of information services. Will that encroach upon or erode into the territory of technical libraries?

To prove their relevance and value, Technical libraries must strive to provide the right amount of information to the right clientele at the right time with a right expense of financial and human resources. With a stagnant or dwindling library budget, technical libraries have to increase their operational efficiency in order to meet the challenge. One management tool that can help in this regard is Knowledge Management (KM).

Knowledge Management is a new-emerging field. Since late 1990s, both academia and the business sector have shown unprecedented interest in Knowledge Management and conducted much research in underpinning its theories and ventured in its implementation.

Equipped with rich research information and skills, librarians are quick at work. The International Federation of Library Associations (IFLA) 69th General Conference and Council (Berlin, Germany; August 2003) devoted a session on Knowledge Management. The 3rd China-US Library Conference (Shanghai, China; March 22-25, 2005) addressed Knowledge Management as a sub-theme of the conference.

Knowledge Management as Reflected in Library Literature

A cursory review of library literature on Knowledge Management reveals the following trends: 1) of all types of technical libraries, special technical libraries, especially business and corporate libraries, are taking the lead on Knowledge Management research; and 2) of technical libraries, public services and digital libraries are in the limelight.

Trend in Technical Libraries: business/corporate libraries taking the lead

In the realm of Knowledge Management in technical libraries, Townley (2001) concludes that “Special technical libraries have taken the lead, but some applications now are taking place in other technical libraries.”

Literature review confirms his assertion. A Boolean search, conducted on October 30, 2004 with the query term “knowledge & management” in Library Literature/First Search, with “language limit” set as “English” and the “record type” as “article”, retrieved 632 hits. The search was further qualified with the following terms and retrieved the respective hits: Library (159), libraries (93), technical (8), college (27), university (44), business (56), corporate (26), special (41).

Combining “library” and “technical libraries”, the hits are 252. That constitutes about 40 percent of the total hits. Sixty percent of English articles on “knowledge management” in Library Literature are not directly related to library or technical libraries.

Grouping by type and divided by 252 (the total hits of “library” and “technical libraries”), “academic”, “college”, and “university” have a total hits of 79 (31%), and “business”, “corporate”, and “special” have a total hits of 123 (49%).

With an understanding that there are duplicate counts of any given terms, these figures show that most Knowledge Management researches in technical libraries are done by or about business or corporate technical libraries. Jantz (2001) maintains that “Many consider knowledge management to be primarily a business activity in which the use and reuse of knowledge creates business value in terms of profits, improved return on investment or some other quantitative measure.” As corporate technical libraries are closely bound to their parent companies, there is a compelling need for them to support their companies for the survival and success in the business world.

Trend in Technical Libraries: public services taking the lead

The literature review also reveals that within technical libraries, public services are taking the lead in the research and implementation of Knowledge Management.

Jantz (2001) examined important issues of knowledge management within technical libraries and how reference librarians can become more effective as information intermediaries.

Stover (2004) points out that no matter how erudite a reference librarian may be, it is impossible for him or her to be an expert in all disciplines. Ideally, the reference desk should be staffed with all subject librarians 24 by 7. In reality, few, if any libraries, can afford that kind of staffing at the reference desk. So a reference librarian has to answer questions in all subject areas. Therefore, he stresses the need “for reference librarians to make explicit and codify their tacit knowledge base if reference services are to be provided efficiently and effectively.”

Branin (2003) surveyed the field of collection management over the last fifty years and discerned an evolutionary path from “collection development” to “collection management” and now to “knowledge management”. In that sense, he echoes Corral’s claim (1998) that Knowledge Management, when applied to libraries, often becomes how to manage recorded knowledge, that is, library materials.

Digital library is another area Knowledge Management has been actively applied. Rydberg-Cox, et al. (2000), equate Knowledge Management to “the new document delivery and knowledge management tools” in a digital library.

Few articles on Knowledge Management dealt with the operation of the technical services. Turvey and Letarte (2002) argue that “The library world is characterized by fast-paced change, and perhaps no other area as much as the field of cataloging.” And they tried to define cataloging as a very important aspect of Knowledge Management in an increasingly digital world.

Missing Piece: How to improve the efficiency of library operations

Such research has deviated from the original intent of Knowledge Management. The concept of Knowledge Management originated in the business sector, the purpose of which is to maximize the utilization of the corporate knowledge so as to run a company more efficiently and make the company more competitive in the market. The current trend in library literature on Knowledge Management is a twist of the original intent of Knowledge Management.

As how to present library materials to users is focused in library Knowledge Management research, little effort has been devoted to the study of how to improve library operations through Knowledge Management. As a matter of fact, the lion’s share of a library’s budget is allocated to its staff and the acquisitions and cataloging of library materials. How to effectively use our staff (human resources) and how to improve the efficiency and effectiveness of our technical services operations should be the real focus of Knowledge Management in technical libraries.

Knowledge Management in Technical Libraries

Knowledge Management has been tooted and hyped since late 1990s, (DiMattia, 1997) first in the business sector, and then in higher education and now in library management. The impetus for embracing Knowledge Management in technical libraries is mainly from a combination of library budget shortfall and higher user expectations.

Rather than adopting an often trumpeted high-tech approach, it is more practical to utilize the existing staffing, technology and management structure for technical libraries.

Impetus

Where there is a new phenomenon emerged, there must be an impetus. In Knowledge Management, the driving force is the necessity to survive in the business sector in face of fierce competition with rival firms or other competitors. The goal of Knowledge Management is to make full use of the knowledge existed in a corporation to increase the productivity and/or operational efficiency so as to build an edge in the competition. What's the driving force for technical libraries?

Budget shortfall is a primary driving force for the implementation of Knowledge Management in technical libraries. In recent years, budgets in technical libraries are stagnant at best and declining in general.

At the same time, students, faculty and university administration have a greater expectation of technical libraries, due in part to the advancement of information technology and in part to the explosion of knowledge in the digital age. To provide the right amount of information at the right time (Ghosh & Jambekar, 2003) is more critical than ever to the fulfillment of the mission of technical libraries and their parent institutions.

In other words, technical libraries have felt the pinch from both sides – less budget and more demand. Moreover, they have sensed the threat of being marginalized by Internet-based information services and students and faculty's own information gathering efforts.

It is, therefore, paramount for technical libraries to operate more efficiently with reduced financial and/or human resources. Knowledge Management is such a tool that could help in this regard and at this crucial moment.

How to implement Knowledge Management in technical libraries

Most researchers consent that Knowledge Management consists of two components: human factor and technology. And most proponents of Knowledge Management advocate a top-down approach

under a Chief Knowledge Officer (CKO). While a top-down approach is preferable, a bottom-up approach might be more practical in many instances.

Human Factor

Knowledge Management is a new paradigm in technical libraries in the sense that concerted efforts need to be exerted to manage knowledge systematically. (Ahmed, Lim, & Loh, 2002) Instead of establishing a new network of Knowledge Management managers under a Knowledge Management tsar or CKO (Chief Knowledge Officer), it is more practical to utilize the current management structure. Managers at all levels shall be charged to implement Knowledge Management in their respective units so that a network of Knowledge Management managers is in place. In addition to managing staff and workflow in their units, each manager is responsible for managing knowledge pertaining to their unit's goals and operations. This calls for not only gathering knowledge existing currently in their units but also knowledge relevant to their operations from other units/departments and even other libraries or professions.

A handy example is how to peel the security strip from the top of a CD or DVD jewel case. For a long time, our staff in the Acquisitions Department use the combination of a knife and their fingernails to peel it off. It is time-consuming and pains-taking. One day, we accidentally learned that a staff in the Cataloging Department had a trick to peel the security strip more easily. And it turned out that he found the trick from the Internet! The example illustrates the importance of knowledge management and sharing between departments. And what's more, knowledge acquisitions should not be confined to one's own unit or even the library. In a sense, a Knowledge Management manager is like an intelligence agent. S/he should spare no efforts to acquire information/knowledge to improve the operational efficiency of his/her unit.

The same shall be true for managers at higher levels. They need to look both within and beyond their departments or libraries and see what workflows, organizational structures, services, technologies, etc. out there that may be imported or adapted to better serve their own clientele.

Technology

Now how to record knowledge pertaining to library operations? What is more: How to retrieve such knowledge when needed? Many advocators of Knowledge Management stress the importance of

using advanced technology to store and retrieve knowledge. And many advocate for a centralized turnkey Knowledge Management software product or system. Theoretically, a Knowledge Management system could encompass anything. In reality, no such systems exist. A centralized Knowledge Management product entails a pricy initial capital investment whether purchased from the market or developed in-house. Besides, subsequent and on-going maintenance and upgrades of hardware and software may not be affordable with the ever-shrinking library budget. More importantly, such an approach overlooks the technology competence and preference of individual Knowledge Management managers. It would be costly and unrealistic to train all staff to use such a Knowledge Management system.

On the other hand, the value of an investment in knowledge management is often difficult to estimate or quantify. (Ahmed, 2002) At a time when libraries face tight budget or budget reduction, it is only too natural for the library administration to hesitate to invest in such a Knowledge Management system.

Another fact to bear in mind is that most knowledge is context specific. Knowledge is usually created for a particular use. (Ahmed, Kok, & Loh, 2002) In other words, a particular knowledge is valuable only in particular situations. Therefore, it does not make much sense to incorporate it in a centralized Knowledge Management system, for it would be irrelevant to most people outside a certain unit or not performing a particular function.

I'd advocate that we make use of the existing technology to store and retrieve knowledge for promoting knowledge management in library operations. Open source technology and software are ideal. However, they require pretty high level of programming skills to utilize. In contrast, most libraries have Microsoft Office Suite installed on their staff's workstations. Why not to make full use of it? MS Word is good for creating operational procedures and other documentations related to library operations. MS Excel is good for keeping statistics and creating charts at the unit/department level. And MS Access can store data for easy retrieval with customizable queries. They can also be easily converted to web pages, be they static or dynamic, to facilitate retrieval. Most, if not all, staff are familiar with MS Word and Excel at least.

To prevent the loss of knowledge at a staff turnover, all operational documentations should be stored on a library network or in a shared space.

In addition to the Microsoft Office Suite, discussion lists, online help desk, virtual reference desk, web portals, etc. can all be employed to implement Knowledge Management in technical libraries. The beauty of the digital age is that all documents are created in a digital format, which can be later ported to other storage and retrieval media/carrier.

Top-down or Bottom-up

Depending on the priority of the library administration or the library structure, Knowledge Management can be started from either bottom-up or top-down (Quintas, 2003) or in the middle. A top-down strategy has the advantage of the support and direction from the library administration. In places where such an option is not available, Knowledge Management can be implemented first in the front-line units. Operational knowledge can be collected and shared within the unit or beyond. A concerted effort will surely yield more efficiency. If Knowledge Management starts by middle managers, they can coordinate units to reduce the redundant or overlapping workflows and thus ensure a better efficiency. No matter where it starts, Knowledge Management will definitely increase the operational efficiency and thus enhance our services and benefit library users.

Implementing Knowledge Management from bottom-up with existing staffing and technology is “a valuable low-cost and low risk way of proving the viability of a Knowledge Management approach” (Quintas, 2003). Experience gained and benefit reaped shall encourage the library administration to implement Knowledge Management in the whole library.

What to cultivate in Knowledge Management implementation

According to Grant, only 10 percent of an organization’s knowledge is explicit (Grant, 1996). That estimation might be low. But it points to a fact that a large portion of knowledge in an organization is tacit, “deeply embedded within individual experience, judgment and intuition” (Ahmed, Lim, & Loh, 2002). As such, it is “difficult to express and communicate” (Nonaka & Takeuchi, 1995). Rather than trying every means to extract such tacit knowledge from individual staff, I’d advocate that we delegate this task to the human resources and staff development to manage. If tacit knowledge is hard to express or communicate, why bother to extract it? Also, as tacit knowledge is closed related to one’s personal experience and intuition, we might run the risk of violating privacy to extract it.

On the other hand, Nonaka and Takeuchi (1995) maintain that tacit knowledge lies at the very heart of organizational knowledge. Therefore, it is too dear to ignore or not to manage. Library human resources and staff development should be charged to work closely with managers at all levels to identify staff with valuable tacit knowledge and take every measure to retain such staff.

How to motivate staff to contribute and share their knowledge is not an easy task. Some staff may not want to share their knowledge for fear that once their knowledge is shared, they might no longer be valued or deemed indispensable. Some staff may not share their knowledge for free, as there are free riders (Susarla, Liu, & Whinston, 2003) who only take for granted others' knowledge but never share their own. To encourage staff to contribute their knowledge, we need to have an incentive or reward system in place.

Unlike the private or business sector, technical libraries typically do not have extra financial resources to reward staff who have contributed their knowledge. Again, I'd like to advocate that we incorporate such an incentive or reward system within the current management structure. To be specific, we can write in the job descriptions that each staff is required to share knowledge pertaining to their tasks and that each manager is required to gather and manage operational knowledge. Knowledge sharing/management should also be configured into the staff annual performance review or the librarian's portfolio for tenure or promotion.

Conclusion

Knowledge Management is an emerging field, much tooted or hyped since late 1990s. However, due to the complicated nature of knowledge per se and its management, it is often difficult to estimate or demonstrate the value of knowledge management. In spite of the fact that there are many knowledge base products on the market (Serban & Luan, 2002), none of them is well suited for libraries nor flexible enough to cope with the dynamically changing environment in the digital age, not to speak of the initial capital investment and future upgrade and maintenance costs. Libraries, with limited budget and human resources, should utilize the current management structure and technology to implement Knowledge Management, either bottom-up or top-down. With a concerted effort,

Knowledge Management will help to increase libraries' operational efficiency and cater to the ever-increasing needs of our clientele.

Bibliography / References

- Ahmed, P. K., Lim, K.K., & Loh, A.Y.E. (2002). *Learning through Knowledge Management*. Oxford: Butterworth-Heinemann.
- Alavi, M. & Leidner, D. (1999). *Knowledge Management Systems: Issues, Challenges and Benefits*. *Communications of the Association for Information Systems*, Vol. 1, Article 7.
- Albert, S. , & Bradley, K. (1997). *Managing Knowledge: Experts, Agencies and Organizations*. Cambridge, UK: Cambridge University Press.
- Branin, J.J. (2003). *Knowledge Management in Technical Libraries: Building the Knowledge Bank at the Ohio State University*. *Journal of Library Administration*, 39(4):41-56
- Burton-Jones, A. (1999). *Knowledge Capitalism: Business, Work, and Learning in the New Economy*. Oxford, UK: Oxford University Press.
- Corrall, S.(1998). *Knowledge Management: Are We in the Knowledge Management Business?"* *Adriad*, 18. URL: <http://www.ariadne.ac.uk/issue18/knowledge-mgt/>
- Dahlman, C.J. & Aubert, J. (2001). *China and the Knowledge Economy: Seizing the 21st Century*. Washington, DC: The World Bank.
- DiMattia, S. & Oder, N. (1997). *Knowledge Management: Hope, Hype, or Harbinger?* *Library Journal*, 122(15):33-35.
- Ghosh, M. & Jambekar, A. (2003). *Networks, Digital Libraries and Knowledge Management: Trends & Developments*. *DESIDOC Bulletin of Information Technology* 23(5):3-11.
- Helmstadter, E., (2003). (Ed.). *The Economics of Knowledge Sharing: A New Institutional Approach*. Cheltenham, UK: Edward Elgar.
- Holsapple, C. W. (2003). (Ed.). *Handbook on Knowledge Management*. Berlin: Springer.
- Jantz, R.C. (2001). *Knowledge management in technical libraries: special tools and processes to support information professionals*. *Reference Services Review*, 29(1):33.
- Milne, P. (2001). *Rewards, Recognition and Knowledge Sharing: Seeking a Causal Link*. *Australian Technical & Research Libraries*, 32(4):321-31.
- Milner, E.M. (2000). *Managing Information and Knowledge in the Public Sector*. London: Routledge.

Quintas, P. (2003). *Managing Knowledge in Practice. In Measuring Knowledge Management in the Business Sector: First Steps*, (pp.29-49). Paris, France: Organisation for Economic Co-Operation and Development.

Rydberg-Cox, J., et al. (2000). *Knowledge Management in the Perseus Digital Library. Ariadne*, 25. URL: <http://www.ariadne.ac.uk/issue25/rydberg-cox/intro.html>

Serban, A.M. & Luan, J. (2002). (Ed.). *Knowledge Management: Building a Competitive Advantage in Higher Education*. San Francisco: Jossey-Bass.

Shukla, A. & Srinivasan, R. (2002). *Designing Knowledge Management Architecture: How to Implement Successful Knowledge Management Programs*. New Delhi, India: Response Books.

Susarla, A., Liu, D, & Whinston, A.B. (2003). *Peer-to-Peer Enterprise Knowledge Management. In Handbook on Knowledge Management. Pt. 2: Knowledge Directions*, pp 129-139, Berlin: Springer.

Stover, M. (2004). *Making tacit knowledge explicit: the Ready Reference Database as codified knowledge. Journal: Reference Services Review*, 32(2):164-173.

Townley, C.T. (2001). *Knowledge Management and Technical Libraries. College & Research Libraries*, 62(1):44-55.

