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Knowledge retention and transfer: How libraries manage employees leaving and joining

Abstract.

Purpose: This study investigates how libraries prevent the loss of knowledge with people leaving or resigning, and the strategies they adopt to retain this knowledge and to transfer organizational knowledge to new employees.

Methodology/approach: Data was gathered from 101 academic librarians from 35 countries in 6 continents who provided qualitative answers to two open-ended questions in a survey questionnaire.

Findings: Documentation, training and digital repositories were found to be the primary strategies employed. A number of respondents admitted to retention and transfer being done poorly. Very few libraries had a formal KM process. The study proposes a theoretical framework for knowledge retention and transfer in libraries.

Implications: Libraries will be able to learn of retention and transfer strategies, and identify gaps in their KM process based on the mapping of a specific strategy to knowledge dimension or phase of the KM cycle.

Originality/value: This is the first empirical study in the area of knowledge retention in libraries. The study brings together the perspectives of libraries across the world. The primary research contribution is the theoretical framework which can be used to further research on knowledge retention and transfer in the context of libraries.

Keywords. *Knowledge retention, knowledge transfer, libraries, knowledge management, framework for knowledge retention and transfer in libraries*

Article classification. Research paper

Background and Introduction

Knowledge has always been embedded in the activities of organizations. This includes the knowledge generated within libraries. The value of knowledge has grown with ‘‘the emergence of the information age and the knowledge economy, which have transformed knowledge into an asset and made it the basic economic resource’’ (Beazley, Boenisch and Harden, 2002). When library employees resign or retire, they often leave with valuable organizational, customer and project knowledge. In many instances, this knowledge can be critical to the success of the library. Sutherland and Jordaan (2004) argue that the ability to retain organizational knowledge is a key characteristic for a successful organization in the knowledge economy. Similarly, new employees joining the libraries face critical challenges in gathering knowledge relevant to their jobs. There are barriers to the successful transfer of organizational knowledge, with knowledge either held in senior employees who do not share enough in order to keep themselves indispensable or thinking what they know is not important enough for others. The documents and files may be difficult for a new employee to process, and electronic copies lost in the deluge of online information and repositories, limiting their accessibility and usefulness.

Thus, with librarians and student workers leaving and joining, libraries struggle to prevent loss of organizational knowledge due to staff turnover, and transferring this knowledge to new employees. Knowledge retention should be integrated into how the library operates and start well before a key employee is about to depart. Although it is considered crucial for long term organizational success, few organizations have formal

knowledge retention strategies (Liebowitz 2009). With depleting budgets and challenges of viability, retaining and transferring organizational knowledge effectively is necessary for the survival and growth of libraries. Libraries need to develop and implement programs for capturing and retaining this knowledge before their employees walk out the door for the last time, and transferring this knowledge to incoming employees.

The research questions investigated in this study are:

How does the library:

RQ1. *retain the knowledge of people who leave or resign from the library?*

RQ2. *provide organizational knowledge to new employees?*

Using Nonaka and Takeuchi (1995)'s organizational knowledge-creation framework as well as the phases of the KM cycle (Agarwal and Islam, 2014) as a theoretical lens to guide the data analysis, we propose a framework for knowledge retention and transfer in libraries.

The rest of the paper is organized as follows. In the next section, we review the literature and discuss the theoretical lens. This is followed by methodology, findings, discussion, conclusions and implications.

Literature review

Knowledge Management in Libraries

While there are hundreds of definitions (Dalkir, 2011), a simple definition of KM is a systematic effort to enable information and knowledge to grow, flow and create value (O'Dell and Hubert, 2011). Nonaka and Takeuchi (1995) define KM as the capability of 'a company as a whole to create new knowledge, disseminate it throughout the organization, and embody it in products, services and systems' (p.3). In non-profit organizations such as

libraries, KM can improve communication among staff and between top management, and can promote a culture of sharing (Teng and Hwamdeh, 2002). The few studies on library and KM have focused on KM in academic libraries (Townley, 2001; Maponya, 2004), the need for KM in libraries (Wen, 2005), the relationship between KM and libraries (Roknuzzaman and Umemoto, 2009; Sarrafzadeh, Martin and Hazeri, 2010), librarians' awareness or perceptions of KM (Siddike and Islam, 2011), knowledge sharing behavior (Islam, Ikeda and Islam, 2013), KM in state-of-the-art digital libraries (Islam and Ikeda, 2014) and mapping KM tools to KM cycle for libraries (Agarwal and Islam, 2014). Despite varying perceptions of the Library and Information Science (LIS) community towards KM, most researchers view it positively and call for full involvement of LIS practitioners in KM (Abell and Oxbrow, 2001; Southon and Todd, 2001; Agarwal and Islam, 2014).

Types of knowledge

The knowledge in most KM definitions typically refers to one of two types of knowledge – either explicit or tacit (Nonaka and Takeuchi, 1995; Sveiby, 1997; Davenport and Prusak, 1998; Pan and Scarborough, 1999). Explicit knowledge is systematic and has been or can be articulated, codified, and stored in certain media and can be readily transmitted to others (Pan and Scarborough, 1999). Tacit knowledge, however, is created through learning by doing, is difficult to express, formalize, or transfer (Sveiby, 1997). Tacit knowledge is found embedded in action, commitment, and involvement in a specific context and derived from personal experiences (Nonaka, Toyama and Nagata, 2000). In implementing and practicing KM in libraries, these distinctions must be well understood. Only explicit knowledge can be exchanged through documents, while the more important tacit knowledge can only be exchanged through human interaction. Nevertheless, both types

of knowledge are important and interdependent. This interdependency is explained further in the Nonaka and Takeuchi (1995)'s knowledge creation model discussed below, which serves as a theoretical lens for the study.

Theoretical lens

Nonaka and Takeuchi (1995) propose a model to understand the dynamic nature of knowledge creation, and to manage such a process effectively. There is a spiral of knowledge involved, where the explicit and tacit knowledge interact with each other in a continuous process. This process leads to the creation of new knowledge (see Figure 1). Each quadrant in the figure represents the process of conversion of knowledge between the tacit and explicit forms. The central thought is that knowledge held by individuals is shared with other individuals so it interconnects to form a new knowledge.

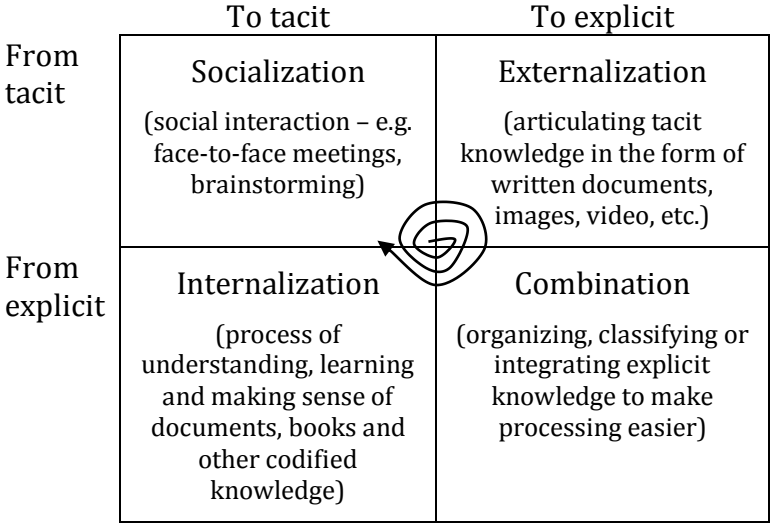

Figure 1 Nonaka and Takeuchi (1995)'s model of knowledge creation in organizations

Phases of the KM cycle

The key steps in the KM process in an organization are often represented in the form of a KM cycle. Agarwal and Islam (2014) combined various frameworks of the KM cycle (see

Dalkir, 2011) and identified 8 unique steps comprising phases of the KM cycle: knowledge 1) creation; 2) acquisition or sourcing; 3) compilation or capture; 4) organization, refinement, transformation and storage; 5) dissemination, transfer and access; 6) learning and application; 7) evaluation and value realization; and 8) reuse or divesting. These phases are also applicable to KM in libraries (Agarwal and Islam, 2014).

Knowledge retention

Knowledge retention or knowledge continuity involves capturing knowledge in the organization so that it can be used later (Levy, 2011). It is a sub-discipline of KM and is concerned with making sure that the organization does not lose the knowledge held by knowledge workers who leave the organization. Baker, Perez and An (2004) suggest that KM systems can offer viable solutions for the retention of knowledge. The Tennessee Valley Authority (TVA) is often listed in case studies where knowledge retention processes were documented and published (Landon and Walker, n.d.; Beazley, Boenisch and Harden, 2002; DeLong, 2004; Patton, 2006).

Hayward-Wright (2009) highlights that any knowledge enabling initiative requires three critical organizational elements: focus (vision/strategy), capability (tools and resources) and the will (culture). Distinguishing between technology and human interaction, Hayward-Wright (2009) lists two types of enablers necessary for knowledge retention: 1) systems-based knowledge transfer enablers – document management, procedure repository, contacts database, expert database, social network analysis, and (online) training program; and 2) people-based knowledge transfer enablers – mentoring, coaching, shadowing, joint decision making, interviews, storytelling, networking, think tanks, forums/communities of practice, etc.

A number of researchers have suggested strategies for knowledge retention. Rothwell (2004) suggests 12 strategies, some focused on general KM issues, and others on knowledge retention when personnel leave the organization: job shadowing; communities of practice; process documentation; critical incident interviews or questionnaires; expert systems; electronic performance support systems (EPSS); job aids; storyboards; mentoring programs; storytelling; information exchanges; and best practice studies or meetings. DeLong (2004) suggests eight strategies. Again, some (such as after-action reviews and communities of practice) focus on KM-in-general, while others are specific to knowledge retention when employees leave. Three of the strategies aim at improving the transfer of explicit knowledge – documentation, interviews and training – and four at transferring implicit and tacit knowledge – storytelling, mentoring/coaching, after-action reviews and communities of practice. Patton (2006) argues that organizations should concentrate on recreating tacit knowledge rather than focusing only on transferring it. Beazley (2003) posits that planning how to retain the knowledge must include defining the technology that will facilitate the process. Hayward-Wright (2009) recommends an information audit (focusing on explicit knowledge) and a knowledge audit (focusing on tacit knowledge) to decide what knowledge is critical to be retained or captured. She advises four types of questions that can be asked to a departing employee: general questions, questions pertaining to specific tasks, questions on facts or information, and questions that will draw out lessons learned, insights, etc. A number of studies (Landon and Walker, n.d.; Beazley, 2003; DeLong, 2004; Baker, Perez and An, 2004; Morgan, Doyle and Albers, 2005; Kalkan, 2006; IAEA, 2006) recommend initiating the knowledge retention process with an assessment project that estimates the risk of knowledge loss. These are similar to the information and knowledge audits recommended

by Hayward-Wright (2009). DeLong (2004) and Hofer-Alfeis (2008) emphasize implementation (see Levy, 2011), thus setting the foundations for organizations that actually want to know how to transfer the experts' knowledge across the organization.

Knowledge transfer

Like knowledge retention, knowledge transfer is the means by which expertise, knowledge, skills and capabilities are transferred from the knowledge-base to those in need of that knowledge e.g. from outgoing to current employees, or from current to incoming employees, or from databases and documents to current or incoming employees (Silke and Alan, 2000). It refers to the activities associated with the flow of knowledge including communication, translation, conversion, filtering and rendering (Newman and Conrad, 1999) and making it available for future use. Bou-Liusar and Segarra-Cipres (2006) calls this internal transfer, and highlights that knowledge transfer can also include the external transfer of knowledge between firms. Knowledge transfer is more than just a communication problem due to the complex and tacit nature of organizational knowledge, including knowledge of members, tools, tasks, and types (Argote and Ingram, 2000). Nonaka and Takeuchi (1995) show how knowledge can be transferred between and within tacit and explicit forms (see Figure 1). DeLong (2004) suggest that knowledge can be transferred from individual-to-individual, individual-to-group, group-to-individual and group-to-group. The transfer involves both the transmission of information to a recipient and absorption and transformation of knowledge by that person or group (Davenport and Prusak, 1998). To be of value to the organisation, the transfer of knowledge should lead to changes in behavior, practices and policies, and the development of new ideas, processes, practices and policies. Emadzade *et al.* (2012) posits that knowledge transfer can be made possible through the

process of combining, filtering, integrating, merging, coordinating, distributing, and reconstructing knowledge.

Factors affecting knowledge retention and transfer

While we have looked at various strategies proposed by researchers on how to retain or transfer knowledge between/among library employees, none of these will work if a few required elements are not in place. Basing their work on O'Dell & Grayson (1998), Agarwal and Marouf (2014) list 4 basic areas that must be in place for effective knowledge management. These are people, culture, processes and technology. They list these in the context of colleges and universities as a whole, but these would be equally applicable to knowledge retention and transfer in academic libraries. We could think of these are library capability or readiness for knowledge retention and transfer.

People includes factors such as awareness of KM, knowledge retention and transfer, what it means and what it can bring to them; individual intention to be involved in the knowledge management, retention and transfer process; motivation and the degree of effort one is willing to put into it, and top management openness and support, as well as proving resources, rewards and incentives (Bock and Kim, 2002) for new ideas (O'Dell & Grayson, 1998; Agarwal and Marouf, 2014).

Culture (Goh, 2002; Mills and Smith, 2011) includes whether the library encourages and facilitates knowledge sharing, retention and transfer, whether a climate of openness and trust (Levin and Cross, 2004) permeates the library; whether flexibility and the desire to innovate drives the learning and work process in the library (Agarwal and Marouf, 2014);

whether collaboration and support for collaboration management form a key part of the library's practices; and so on.

Processes include determining if any prior KM implementation is in place (Agarwal and Marouf, 2014), or if existing knowledge retention and transfer strategies (discussed in the sections above - such as mentoring, coaching, shadowing, document management, repositories, databases, etc.) are already in place in the library.

Finally, technology includes having IT-based mechanisms that link library staff and stakeholders to one another, and to public; having an institutional memory that is accessible to the library as a whole; determining whether the library fosters the development of human-centered IT; having an environment where the technology that supports collaboration is rapidly placed in the hands of faculty and staff; and where available information systems are real time, integrated and smart (O'Dell and Grayson, 1998; Agarwal and Marouf, 2014).

All these factors enable the phases of the KM cycle, which includes knowledge creation, retention and transfer processes. Before implementing any knowledge retention and transfer strategies, a capability or readiness assessment must be done (Agarwal & Marouf, 2014; Lee *et al*., 2012; Khalifa and Liu, 2003; Gold *et al*., 2001) to see the state of the library as regards to these 4 areas discussed above. Without a culture of trust (Levin and Cross, 2004) and collaboration management support, or without effective technology, implementing strategies would not be effective. E.g. a library employee would not want to transfer his/her tacit knowledge to an incoming or current employee if there is no mutual

trust. Thus, any implemented strategies must align with the state of capability, readiness or maturity of the library for KM, and phases of the KM cycle.

Motivation – Knowledge retention and transfer in libraries

As readiness assessment, and people and culture are huge areas of research within KM, this paper will not venture there. We will simply focus on processes and specific strategies and ways in which libraries facilitate knowledge retention and transfer (with a recognition that these would be ineffective without the enabling environment of culture, trust, etc.).

As seen from the discussion above, none of the past studies on knowledge retention and knowledge focus on libraries. Hayward-Wright (2009) is the only paper that discusses the importance of knowledge retention in the context of health and special libraries. However, it is a position paper where no empirical data is gathered. This study will investigate retention and transfer strategies not only from the perspective of libraries within a single region or country, but from librarians internationally. By getting to know about the actual strategies employed, we can identify the gap in recommendation versus practice.

We adopt Nonanka and Takeuchi (1995)'s and Agarwal and Islam (2014)'s work as a theoretical lens. Even though Nonaka and Takeuchi's model is very popular and commonly cited, it is closely applicable to this study. This is because while the processes espoused in their model are central to KM, knowledge retention and transfer are key processes that form a part of most definitions of the KM cycle (Agarwal and Islam, 2014).

Based on the findings from the data gathered, we extend these frameworks and propose a new theoretical framework for the knowledge retention and transfer process in the library context.

Methodology

This data for this study was gathered as part of a larger quantitative survey of librarians across the world investigating the likelihood of their library adopting KM and Web 2.0 tools (<anonymized>). The focus of the present study is the qualitative analysis of the open-ended responses to two questions that were included along with other structured questions. These were:

Q1. How does your library retain the knowledge of people who leave or resign from the library?

Q2. How does your library provide organizational knowledge to new employees?

As questions on retention and transfer have not been adequately investigated in the context of libraries, responses to these questions were best gathered in an open-ended qualitative manner.

The target population of the study was librarians across the world. The study population was academic librarians that were accessible using the International Federation of Library Associations and Institutions (IFLA) mailing list (IFLA Mailing Lists, 2014) and the IFLA KM section mailing list. Apart from these, we also reached out to academic librarians in the UK (list by University of Wolverhampton, n.d.), USA (list by University of Texas, n.d.), Canada (Universities in Canada, n.d.), Australia (Universities in Australia, n.d.) and other countries such as Bangladesh, Denmark, India, Malaysia, Norway, etc. (a total of 35

countries) where universities were found using Web search. The purpose was to reach out to a wide pool of academic libraries from different countries. We focused on academic libraries as they were more likely to adopt KM and KM practices, having played a significant role in supporting information dissemination activities, and with faculty and students stimulating the creation and transmission of knowledge. However, the concerns of knowledge retention (what to do when employees resign or retire) or knowledge transfer to new employees are as applicable to other types of libraries as they are to academic libraries.

Both the questions were self-developed and not based on any prior study. Thus, these were pre-tested to check for any question wording issues. The questionnaire and the design of the larger study was approved by the Institutional Review Board of <anonymized>. Individual personalized emails with a link to a web-based questionnaire (including the informed consent) were sent out to university librarians inviting them to participate in this study. A web-based version of the instrument was created using Google form. The questions were not mandatory. Thus, the respondents could choose not to answer them. In order to protect the identity of the librarians, no names, email addresses or library names were gathered.

Individual mails were sent to a list of 563 librarians in the UK, USA, Australia and Canada inviting them to fill out the questionnaire. Apart from these, individual librarians were also contacted in other countries mentioned above. Emails were also sent to the IFLA and IFLA KM mailing lists. In total, about 600 librarians were individually contacted, with the rest in mailing lists. 101 librarians from 35 countries in 6 continents filled out the questionnaire. The response rate was about 16.83% after multiple follow-up emails and

efforts at reaching to respondents and mailing lists. Data was gathered between August 2013 and February 2014.

Data Analysis

Demographic data was analyzed using PSPP 0.8.2, the open source equivalent to SPSS.

For the qualitative data analysis, all the data was entered in an Excel spreadsheet. The responses for the two questions were each copied to a separate worksheet. As some of the responses were in other languages such as Portuguese, Google translate (http://translate.google.com) was used to decipher the meaning of these. For each question in each worksheet, candidate categories were arrived at to synthesize the findings. Three kinds of coding were carried out – open coding, axial coding and selective coding (Corbin and Strauss, 1990). Open coding included an initial pass through the data to come up with candidate concepts for categories. After an initial level of analysis, categories were combined into major categories (axial coding). Finally, the focus shifted to core categories (selective coding), those that emerged from open and axial coding as the most important. For inter-rater reliability, the authors looked at the analysis carried out by each other and reconciled the categories. The findings for each question are discussed below.

Findings

Demographic data

Let us first look at the demographic data (<anonymized>). 23.76% of the librarians who responded were male, while the majority (75.25%) were female. The mean age was 44.83 years, with a standard deviation of 11.74. The youngest respondent was 25 years of age, while the oldest was of 79 years. The majority of the respondents (68.32%) had a

master's degree, while 12.87% had a bachelors degree. 9.9% of the respondents had a Diploma, while 8.91% had a Ph.D. The respondents had spent an average of 15.58 years in the library field (standard deviation 9.68 years). The no. of years that the respondents had been in the library field ranged from 1-37 years. A majority of the respondents (41.58%) worked in small libraries with 1-19 employees. 26.73% of the respondents worked in large libraries with 101-500 employees. 17.82% of the respondents worked in mid-sized libraries with 50-100 employees, while 13.86% of the respondents worked in libraries with 20-49 employees.

This study drew responses from libraries based in all 6 inhabited continents. 21.78% of the respondents worked in libraries based in Asia (Bangladesh 6; India 4; Vietnam 3; Pakistan 2; Malaysia, Lebanon, Iran, UAE, China, Philippines and Laos 1 each). 19.8% of the respondents were based in Europe (UK 9; Germany 2; Denmark, Belgium, France, Switzerland, Estonia, Slovenia, Italy, Hungary and Romania 1 each), 15.84% in South America (Brazil 15; Colombia 1), 14.85% in North America (USA 8; Canada 4; Puerto Rico, Jamaica and Mexico 1 each), 13.86% in Australia, and 12.87% in Africa (Zimbabwe 4; Kenya and South Africa 3 each; Ghana 2, Nigeria 1).

20% of the respondents were senior employees of the library (in the level of Director / Head), 65% identified themselves as Librarian, and 15% as Library Assistant. 42.57% of the respondents identified themselves as employees working in the library as a whole. 11.88% worked in reference, 10.89% in technical services, 9.9% in technology roles, 7.92% in customer service, 2.97% in administration, 1.98% in innovation and 0.99% in legal.

Main data

We will now look at the findings for the two research questions in this study.

RQ1. How does the library retain the knowledge of people who leave or resign from the library?

Most respondents gave more than one option in the way in which their libraries retain the knowledge of those leaving. These options were coded into separate categories (discussed below), leading to 140 coded responses by the 101 respondents. The numbers within brackets indicate the sum total for all responses in that category.

1) **Through documentation, archiving or history of written policies and procedures, or an after action review (36).** "Files - most official records should be filed, so that the next person who takes over can know what has happened previously." "Through detailed workflow documentation and process explanation documents." "Handing over notes, files" While it was not always clearly indicated, the reference to these documents was in hard-copies or physical files, but could be soft copies as well, or in both formats. Some responses listed the need for an effective finding aid to make the documentation useful. One respondent indicated that the content itself was not useful: "When I came into my position, I had files kept by previous librarians. They were interesting, although not particularly relevant to my day to day work. I have put them in document boxes and they will be organized as an archive and receive a finding aid to be a history of my branch library."
2) **Through succession or handover training, an exit interview, mentoring by or shadowing the employee who's leaving (28).** "Handover mentoring where possible" "Our library tries to put in place succession planning for the knowledge to be retained in junior librarians." "Exchange of knowledge through a changeover

process whereby the new incumbent shadows the old employee." "exit interviews" "departing colleagues often train new ones" "We try to train new people before people retire or leave."

3) **Through a digital repository in the form of a knowledge base, database, intranet, wiki, blogs, digital repository, social networking site or emails (26).** These primarily served as an archiving and sharing mechanism for electronic copies of the documentation referenced to above. "The library has instituted a policy of sharing key documents for workflows and procedures on the intranet." "We utilize TeamSites, which contains important organisational documents and procedures, as well as LibNet, which is a library intranet. The knowledge of previous employees are likely to be partially there,…" "use sharepoint" "we ensure that all documents are in our shared document management system." "I've been developing a KM wiki."

   One respondent said that this was not updated "We haven't done anything on that …. since [the last] 5 years …".

4) **By building in redundancy through communities of practice or team members working on similar areas as the employee who's leaving (9).** "also others that worked with them would have some of their knowledge." "Workforce planning. Aim to have more than one person responsible for areas of knowledge/expertise." "Build communities of practice to minimize expertise residing in only one person" "Through team work" "We are developing some cross-training protocols where appropriate." "I try to train more than one person to perform the same function."

   One response was especially curt: "Replace with younger people"

5) **Through a formal KM program (3).** "The library system has a Knowledge Management Program and throw it we develop many practices: Map of knowledge: where people put their personal and professional information. It's possible to find the networks.; Congress Report: when someone goes to a congress when come back it's to share the knowledge with colleagues by writing a report, a meeting or a small conference.; Workflow: libraries seeks to register workflow of the library's activities." "In our case, we document all the processes for any activities being conducted, thus, a post activity report has to be submitted. In this regard, we don't have to worry about the collected knowledge. If the document is in electronic format, since, all the PCs are part of the networked, regularly remote banking and back-upping of documents are conducted, this is to ensure that data are intact and have duplicates. Thus, if somebody resigns and deleted all the documents in his/her PC, the unit has still a copy of the all the documents." "Keep people profiles; Request management reports monthly or at the end of the post; Archive reports performance evaluations; In some cases if possible make the splice; Annually makes backups of information in personal computers; Update procedures manuals"
6) **Oral history/storytelling (1).** "Oral history when appropriate"
7) **By ensuring adequate notice period from the employee who's leaving (1).** "training of other colleagues 6 mos [months] before the employee retires"

Apart from the above strategies outlined for knowledge retention in libraries, there were those who cited cases of poor retention, or gave no response to the answer.

- **Retention is done poorly (employees hoard knowledge; knowledge leaves with them) or the respondent is unaware or unsure of any retention procedure (22).**

"Poorly and patchily" "Sadly, the knowledge leaves when people leave." "I don't think it does it very well." "Nothing structured, usually. Not well done." "I'm not aware of any procedure to be honest" "Nothing is done" "It doesn't. There is no formal way to retain like manuals, for example." "no systematic approach" "Though there is no framework to retain tacit knowledge here other than socialization, personal interaction etc."

Two of these responses indicated planning to keep in touch with the employee who's leaving: "we keep in contact" "i alone try to keeping relationships …by email and sms tools." One employee put the onus on retention to the rank or level of the individual staff leaving: "I think it depends on what level of staff we are talking about. Library assistants for example tend to hoard their knowledge as it makes them feel more needed. Their tasks however are reasonably basic and can be learnt without too much difficulty. The higher up the organization you go the more awareness there is of KM."

- **No response (16).** 16 out of 101 respondents did not respond to the question.

RQ2. How does the library provide organizational knowledge to new employees?

For this question as well, the respondents gave more than one option in the way in which their libraries provide organizational knowledge to new employees joining the library. These options were coded into separate categories (discussed below), leading to 152 coded responses by the 101 respondents. The numbers within brackets indicate the sum total for all responses in that category.

1) **Through training, staff mentoring, orientation or induction program, lectures or workshops (59).** "…one-on-one as well as group training sessions" "…training opportunities, onboarding process" "induction tours" "By staff inductions - giving

them some information about the organisation, in particular the area they will be working in." "…new librarians are assigned a mentor as well as a supervisor to help not with the orientation but work with the librarian up until receiving tenure. New staff are more dependent on their supervisors." "…mentoring…formal training" "Training…personal coaching" "1. Library Induction program; 2. In house training program; 3.Specific training program; 4. Use social media for training" "Structured induction with schedule of face-to-face and online learning." "New employees participate in company training workshops for orientation activities to consulting the library catalog" "Through pre-orientation activities, campus tour and other related activities. Then, job orientation are also conducted where the new entrants are oriented to his/her work, organizational set-up and all the process involved." "one on one advice…"

2) **Through documentation and written procedures (30).** "…procedural documentation…" "There is a manual for new librarians…" "reference manual" "Handbook of procedures etc." "some paper documents and the other are soft copies" "…a hard copy folder with instructions, and the new employee will go through it at their own pace. They (sic) folder contains web links to the library website and intranet ..." "by Human Resources Rules and Regulations" "You get a welcome package that includes some leaflets." "…using existing manuals, taking the opportunity to change these manuals whenever displaying a better way for them [there is a better way to present them]."
3) **Through a knowledge base in the form of a Wiki, intranet or shared drive (26).** "by using the intranet and shared drive to access documents and procedures, etc."

"Material is provided on the intranet and also using online tools" "All New library users are given access credentials to our Institutional repositories and E-learning platforms" "A lot of intranet, and internet based training modules." "documents on school server and in information center" "Through internal communication and intranet." "Process map"

A respondent mentioned a mechanism to back up documents: "documentation and procedures are in the library intranet. A copy is in the library's institutional repository"

4) **Through networking, meetings or conversations with current employees, answering any question on the job or over email (18).** "…mostly through an on the job one-on-one question and answer iterative process." "Informally by conversations with current employees…" "…promote [promoting] networking opportunities" "…meeting with supervisors and peers" "…personal meetings, informal communication, email." "face to face meeting" "Through internal communication…" "Education on demand…" "…learning by doing…" "…they can attend work groups that have periodical meetings where they discuss about subjects related to libraries." "The organizational knowledge is provided in conversations and informal instruction." "Through …daily work…" "…Periodic meetings…" "…informal networking" "…and socialization in most cases."
5) **Through storytelling (1).** "….,conversations, story telling"
6) **Through visit to other libraries (1).** "I like and is a practice that I do from the beginning of my administration, every person who comes new the first week is going

to visit the other libraries in the region and meet their peers or colleagues and see how other libraries operate."

7) **Through a KM program (1).** "Identifying the intellectual capital to build a knowledge map; standardizing routines, documentation and procedures; promoting the use of Web 2.0 tools among employees" (translated from Portuguese)

A few respondents gave no response, or provided examples of poor knowledge transfer strategies.

- **No response (13).** 13 out of 101 respondents chose not to respond to this question.
- **Knowledge is provided poorly or the respondent is unsure of any mechanism (5).** "Again, not very well." "It doesn't yet." "No formal mechanism in place." "All together, there's little communication [apart from some documentation provided]" "Not sure I know what you mean by organizational knowledge."

Discussion

Based on the findings of the study, a few key strategies emerged as important for both knowledge retention of outgoing employees and transferring knowledge to new employees. These were documentation, training and digital repository. While documentation is a useful method in transferring tacit knowledge to explicit (for the outgoing employee), and to find out what's been documented before (for the incoming employee), a digital repository is a good place to organize and house them. The degree to which documentation is useful is also dependent upon the degree to which it is accessible (see Agarwal, Xu and Poo, 2011 on the role of accessibility versus quality in information seeking). Thus, the role of an accessible

and easy to use digital repository becomes pertinent for effective use of the knowledge retained coded in the form of documents.

Handover training (for outgoing employees) and induction program, orientation or training (for incoming employees) are both effective ways for the transfer of tacit knowledge. It helps the employee focus on what's important, where to look, and get access to knowledge that is not documented anywhere, or one which cannot be easily documented. As Polanyi said, "….we can know more than we can tell." (Polanyi, 1966/1989, p.4).

The three strategies of documentation, training and digital repository form the first three rows in Table 1 below. Table 1 summarizes the key findings on knowledge retention strategies for outgoing employees, and the knowledge transfer strategies for incoming employees. The code in the first column of the table is a term used to represent the findings arrived at through the analysis of the data. E.g. the term documentation includes archiving, written policies and procedures, after action review, etc. The rest of the findings for knowledge retention and transfer strategies are also included in the table.

Table 1 Comparing knowledge retention and transfer strategies for outgoing and incoming employees of the library

Code	**Retaining knowledge of outgoing employees**	**Transferring knowledge to incoming employees**	**Mapping to Nonaka and Takeuchi (1995)**
Documentation	1) Through documentation, archiving or history of written policies and procedures, or an after action review (36)	2) Through documentation and written procedures (30)	*Outgoing employee:* tacit-explicit (externalization) *Incoming employee:* explicit-tacit (internalization)
Training	2) Through succession or handover training,	1) Through training, staff mentoring,	*Outgoing or incoming employee:*

	an exit interview, mentoring by or shadowing the employee who's leaving (28)	orientation or induction program, lectures or workshops (59)	tacit-tacit (socialization)
Digital Repository	3) Through a digital repository in the form of a knowledge base, database, intranet, wiki, blogs, digital repository, social networking site or emails (26)	3) Through a knowledge base in the form of a Wiki, intranet or shared drive (26)	*Outgoing or incoming employee:* explicit-explicit (combination)
Done poorly	4) Retention is done poorly (employees hoard knowledge; knowledge leaves with them) or the respondent is unaware or unsure of any retention procedure (22)	6) Knowledge is provided poorly or the respondent is unsure of any mechanism (5)	*Outgoing or incoming employee:* tacit (no or little conversation taking place)
No response	5) No response (16)	5) No response (13)	Not applicable
Networking	6) By building in redundancy through communities of practice or team members working on similar areas as the employee who's leaving (9)	4) Through networking, meetings or conversations with current employees, answering any question on the job or over email (18)	*Outgoing or incoming employee:* tacit-tacit (socialization)
KM program	7) Through a formal KM program (3)	9) Through a KM program (1)	*Outgoing or incoming employee:* Complete KM cycle / spiral
Storytelling	8) Oral history/storytelling (1)	7) Through storytelling (1)	*Outgoing employee:* tacit-explicit (externalization) *Incoming employee:* explicit-tacit (internalization) tacit-tacit (socialization)

Notice period	9) By ensuring adequate notice period from the employee who's leaving (1)		Not applicable
Library visit		8) Through visit to other libraries (1)	*Incoming employee:* tacit-tacit (socialization)

In the last column of the table, we map the strategies for retention and transfer (as they apply to outgoing and incoming employees respectively) with Nonaka and Takeuchi (1995). While documentation helps the outgoing employee externalize (conversion of tacit knowledge to explicit knowledge), it helps the incoming employee internalize (conversion of explicit knowledge to tacit knowledge). In the case of training and orientation, socialization is taking place with tacit to tacit conversion of knowledge. The digital repository combines and synthesizes knowledge for easy access. Here the conversion from explicit to explicit rarely happens on its own and typically involves human intervention. The process moves from explicit to tacit (a person trying to read or understand some documentation produced by a current or outgoing employee), and then from tacit to explicit (a person trying to change, summarize, synthesize or create something on the basis of what s/he has read or understood). However, if automated computer processes are used, then this conversion would be from explicit to explicit knowledge.

When knowledge retention or transfer is done poorly and when people hoard what they know, then knowledge remains tacit and is not transferred (or not transferred effectively). This is when people do not share what they know. Networking between outgoing and current employees, or between current and incoming employees is again a case of socialization where tacit to tacit conversation of knowledge is taking place. In the few

cases where the respondents mentioned having a formal KM program, a (mostly) complete KM cycle is taking place. Here, all 4 quadrants of Nonaka and Takeuchi (1995)'s framework (Figure 1) are activated, and may be represented with the spiral in the center of the framework (which indicates the various conversions taking place within and between tacit and explicit knowledge).

For outgoing employees, storytelling may involve tacit to tacit conversion (if the current employees are listening), but is more often a tacit to explicit conversion as the knowledge of the outgoing employee is often being recorded – either in the form of notes or transcripts, or a video recording (with appropriate release forms for reuse). For an incoming employee, storytelling may happen in the process of socialization with current employees (tacit to tacit), or internalization, where a new employee listens to or reads previously recorded stories (explicit to tacit).

Finally, library visits for an incoming employee often entails interaction with people working in those libraries and involves socialization (tacit to tacit conversion of knowledge).

Based on the findings of this qualitative survey of 101 international librarians, we propose below a process framework for knowledge retention and transfer of outgoing and incoming library employees (see Figure 2). The enabling conditions or KM capability/readiness/maturity (people, culture, processes and technology), though not all investigated in the data gathered, are necessary conditions for effective retention and transfer of knowledge. E.g. tacit knowledge means power (Scott, 2000). Without a culture of mutual trust (Levin and Cross, 2004), a library professional will not share what s/he knows.

Enabling conditions: people – culture – processes – technology

	To tacit		To explicit	
Employee:	*Outgoing*	*Incoming*	*Outgoing*	*Incoming*
	Socialization		**Externalization**	
From tacit	training; networking	training; networking; storytelling; library visit	documentation; storytelling	not applicable
From explicit	**Internalization**		**Combination**	
	not applicable	documentation; storytelling	digital repository	digital repository

[1]Knowledge remains tacit when retention or transfer is done poorly
[2]KM program applies to the spiral and all 4 quadrants
[3]Spiral denotes the phases of the KM cycle

Figure 2 Knowledge retention and transfer process for outgoing and incoming library employees

The framework extends Nonaka and Takeuchi (1995)'s knowledge creation framework. It demonstrates how knowledge retention and transfer strategies (based on the study findings) are central to knowledge creation within the library. In each quadrant, the strategies listed on the left are those identified by the respondents as pertaining to knowledge retention of outgoing employees. The strategies listed on the right pertain to knowledge transfer to incoming employees.

The finding of this study can also be mapped to phases of the KM cycle (see Table 2). The spiral in our proposed framework (Figure 2) represents the cyclical and iterative phases of the KM cycle (Agarwal and Islam, 2014).

Table 2 Mapping knowledge retention and transfer strategies for outgoing and incoming library employees to phases of the KM cycle

Phase of the KM cycle	Applicability to outgoing employee	Applicability to incoming employee	Mapping to Nonaka and Takeuchi (1995)

1.	Knowledge creation	Documentation KM program		*Outgoing employee:* Tacit - explicit
2.	Knowledge acquisition or sourcing		Training Documentation Digital Repository Networking Storytelling Library visits KM program	*Incoming employee:* Explicit/tacit - tacit
3.	Knowledge compilation or capture	Documentation Digital Repository KM program Storytelling		*Outgoing employee:* tacit - explicit
4.	Knowledge organization, refinement, transformation and storage	Documentation Digital Repository KM program		*Outgoing employee:* explicit – explicit
5.	Knowledge dissemination, transfer and access	Training Networking KM program Storytelling	Documentation Digital Repository KM program	*Outgoing employee:* tacit – tacit *Incoming employee:* explicit – tacit
6.	Knowledge learning and application		Training Documentation Digital Repository Networking Storytelling Library visits KM program	*Incoming employee:* tacit/explicit - tacit
7.	Knowledge evaluation and value realization			Not applicable
8.	Knowledge reuse or divesting	KM program	KM program	*Outgoing employee:* Tacit - explicit *Incoming employee:* Explicit - tacit

For an outgoing (or current) employee, knowledge creation can happen through documentation and by participating in the KM program (see Table 2). The knowledge of the outgoing employee is compiled or captured in through documentation, digital repository,

storytelling, and a KM program. Either paper-based documentation or the digital repository can be used to organize, refine, transform and store this knowledge. This knowledge is disseminated to other employees through training, storytelling and networking/communities of practice. Finally, an outgoing (or current) employee can decide if certain knowledge is no longer necessary and can be divested.

An incoming employee acquires or sources knowledge through participating in training, reading documentation, accessing the digital repository, networking with current employees, listening to organizational stories, visiting other libraries and by participating in a KM program. This employee gets access to explicit knowledge in the form of documentation or through the digital repository. The strategies that the incoming employee uses to acquire knowledge help the employee learn and apply this knowledge to his/her work. A formal KM program also helps the new employee reuse existing knowledge.

The empty cells of the table show which strategies do not apply to outgoing or incoming employees. E.g. knowledge acquisition and sourcing applies largely to incoming employees and not to outgoing employees, who are preparing to transfer what they know.

In the last column, we map the finding of the study (as they apply to different phases of the KM cycle) to Nonaka and Takeuchi (1995)'s knowledge creation process dimensions where knowledge is converted between or within the tacit and explicit.

Conclusions and Implications

This study has shown that the strategies for the retention and transfer of both explicit knowledge (through documentation, digital repositories, etc.) and tacit knowledge (though

training and other means) are important. The proposed framework is empirically supported. The spiral in the framework maps to the cycle that knowledge moves through within a library (Agarwal & Islam, 2014). The study also showed that the strategies used by most libraries were not part of a formal KM program, or that retention or transfer was done poorly in some libraries. For knowledge retention and transfer to be truly successful, it needs to be part of a formal KM program and done on an ongoing, organic basis for all current employees, and not just in the last few days or weeks before a particular employee leaves.

This is an important area of exploration, especially in the field of librarianship. This is the first empirical study in the area of knowledge retention and transfer in libraries. With the lack of previous studies on this in the library domain, it should trigger interest for similar studies to be carried out. The proposed framework helps extend Nonaka & Takeuchi (1995)'s framework. The most important implication is the mapping of strategies (pertaining to both incoming and outgoing employees) to the four quadrants of the framework based on empirical findings. Future research can use the framework as a theoretical base and further validate it.

Findings from the study should be3 transferrable to other libraries. As far as the library profession is concerned, the research could assist in the formulation of more established policies in knowledge retention and transfer, where more systematic KM programs could be carried out in the library. Library practitioners can see what retention and transfer strategies were found important by other librarians, and adopt some of the practices in their own libraries. The framework will help librarians evaluate the studies they

employ critically, and see which of the strategies help in transfer of tacit versus explicit knowledge, or impact a particular phase of the KM cycle.

The study has two major limitations. First, it was limited to open-ended responses to two simple questions, with data for the study gathered as part of a larger quantitative study. Second, a bigger sample than 101 would yield more data.

Future studies should take the findings and design a structured quantitative survey to probe librarians further on the retention and transfer choices of libraries. Principal components of the variables (retention and transfer) could be derived based on the literature. E.g. the constituent elements of knowledge transfer as per Emadzade et al. (2012) are combining, filtering, integrating, merging, coordinating, distributing, and reconstructing knowledge. This could be one example of principal components investigated. The role of other factors such as enabling KM capabilities (people, culture, processes and technology) could be investigated. A survey questionnaire could then be designed based on it. See <anonymized> for an example of a study design using principal components.

The data could be further analysed by individual countries/continents to see how the findings differ across these. Face-to-face interviews of librarians in a region can also be carried out. Interviews or focus groups of librarians associated with organizational policy matters (chief librarian, head of division, etc.) could be carried out to investigate knowledge retention and transfer strategies, as they would be directly associated with these policies, and could provide further insights. Finally, a case study of a specific library in a region would help understand the retention and transfer strategies, challenges, and solutions in a particular context. Such a study could use the proposed framework as a theoretical lens, and

validate it against the library's practices. Gathering data using mixed methods would help in the triangulation of study findings.

References

<anonymized>

Abell, A. and Oxbrow, N. (2001), *Competing With Knowledge*, Library Association Publishing, London.

Agarwal, N.K and Islam, M.A. (2014), "Knowledge Management Implementation in a Library: Mapping tools and technologies to phases of the KM cycle", *VINE: The Journal of Information and Knowledge Management Systems*, Vol.44, No.3, (in press)

Agarwal, N.K. and Marouf, L.N. (2014), "Initiating Knowledge Management in Colleges and Universities: A template. *International Journal of Knowledge Content Development & Technology (IJKCDT)*, Vol. 4, No. 2, Dec (in press).

Agarwal, N.K., Xu, Y. (C.) and Poo, D.C.C. (2011), "A Context-based Investigation into Source Use by Information Seekers", *Journal of the American Society for Information Science and Technology*, Vol. 62, No. 6, pp.1087-1104.

Argote, L., and Ingram, P. (2000), "Knowledge transfer: A basis for competitive advantage in firms", *Organizational behavior and human decision processes*, Vol.82, No. 1, pp. 150-169

Baker, K.L., Perez, A.L. and An, J. (2004), "Knowledge management for public utilities: a strategic approach for the retention of intellectual capital", *Proceedings of Joint Management Conference* 2004.

Beazley, H. (2003), "Knowledge Continuity: The New Competitive Advantage" available at http://www.asaecenter.org/Resources/EUArticle.cfm?ItemNumber=11836 (accessed 22 March, 2014)

Beazley, H., Boenisch, J. and Harden, D. (2002), *Knowledge Continuity*, John Wiley & Sons, Hoboken, NJ.

Bock, G.-W., and Kim, Y.-G. (2002), "Breaking the myths of rewards: An exploratory study of attitudes about knowledge sharing", *Information Resources Management Journal*, Vol. 15, No. 2, pp.14-21.

Bou-Llusar, C.J and Segarra-Cipres, M. (2006), "Strategic Knowledge Transfer and its Implications for Competitive Advantage: An integrative Conceptual Framework", *Journal of Knowledge Management,* Vol. 10, No. 4, pp.100-112.

Corbin, J. and Strauss, A. (1990), "Grounded Theory Research: Procedures, Canons, and Evaluative Criteria", *Qualitative Sociology*, Vol. 13, No. 1, pp.3-21.

Dalkir, K. (2011), *Knowledge management in theory and practice, 2nd* edition, MIT Press, Cambridge, Mass.

Davenport, T.H. and Prusak, L. (1998), *Working Knowledge: How Organizations Manage What They Know*, Boston, MA, Harvard Business School Press.

DeLong, D.W. (2004), *Lost Knowledge: Confronting the Threat of an Aging Workforce,* Oxford University Press, New York, NY.

Emadzade, M.K., Mashayekhi, B., and Abdar, E. (2012), "Knowledge management capabilities and organizational performance". *Interdisciplinary Journal of Contemporary Research in Business.* Vol. 3, No. 11, pp. 781-790.

Goh, S.C. (2002), "Managing effective knowledge transfer: an integrative framework and some practice implications", *Journal of knowledge management*, Vol. 6, No. 1, pp. 23-30.

Gold, A.H., Malhotra, A. and Segars, A.H. (2001), "Knowledge management: An organizational capabilities perspective", *Journal of Management Information Systems*, Vol. 18, No.1, pp. 185-214.

Hayward-Wright, N. (December 2009), "Knowledge retention and the departing employee", *HLA News: National News Bulletin of Health Libraries,* Australia, available at http://www.alia.org.au/sites/default/files/documents/our-communities/HLA.News-Dec09.pdf (accessed 15 January, 2014)

Hofer-Alfeis, J. (2008), "Knowledge management solutions for the leaving expert issue", *Journal of Knowledge Management*, Vol. 12, No.4, pp. 44-54.

IAEA (2006), "Risk Management of Knowledge Loss on Nuclear Industry Organizations" *IAEA Proceedings Series,* IAEA, Vienna.

IFLA Mailing Lists (2014), available at http://www.ifla.org/mailing-lists (accessed February 28, 2014).

Islam, M. A., and Ikeda, M. (2014), "Convergence issues of knowledge management in digital libraries: steps towards state-of-the-art digital libraries" *VINE: The Journal of Information and Knowledge Management Systems*, Vol. 44, No. 1, pp.140-159.

Islam, M. A., Ikeda, M., and Islam, M. M. (2013), "Knowledge sharing behavior influences: A study of Information Science and Library Management faculties in Bangladesh", *IFLA Journal*, Vol. 39, No. 3, pp.221-234.

Kalkan, V.D. (2006), "Knowledge continuity management process in organizations", *Journal of Business & Economics Research,* Vol.4, No. 3, pp. 41-46.

Khalifa, M., and Liu, V. (2003), "Determinants of successful knowledge management programs". *Electronic Journal on Knowledge Management*, Vol. 1, No. 2, pp. 103-112.

Landon, A. and Walker, B. (n.d.), "*Knowledge retention: preventing knowledge from walking out the door. An overview of processes and tools at the Tenessee Valley Authority*", available at: www.tva.gov/knowledgeretention/ (accessed 6 June, 2014)

Lee, S., Kim, B.G., and Kim, H. (2012). "An integrated view of knowledge management for performance." *Journal of Knowledge Management*, Vol. 16, No. 2, pp. 183-203.

Levin, D. Z., and Cross, R. (2004). The strength of weak ties you can trust: The mediating role of trust in effective knowledge transfer. *Management science*, Vol. 50, No. 11, pp. 1477-1490.

Levy, M. (2011), "Knowledge retention: minimizing organizational business loss, *Journal of Knowledge Management*, Vol. 15, No. 4, p.582-600.

Liebowitz, J. (2009), *Knowledge retention: strategies and solutions,* CRC Press, New York, NY.

Maponya, P. M. (2004), "Knowledge management practices in academic libraries: a case study of the University of Natal Pietermaritzburg Libraries", *SCECSAL Proceedings*, pp.125-148.

Mills, A.M., and Smith, T.A. (2011), "Knowledge management and organizational performance: a decomposed view", *Journal of Knowledge Management*, Vol. 15, No. 1, pp. 156-171.

Morgan, L.J., Doyle, M.E. and Albers, J.A. (2005), "Knowledge continuity management in healthcare", Journal *of Knowledge Management Practice*, Vol.6, available at: http://www.tlainc.com/articl84.htm (accessed 10 May, 2014)

Newman, B., and Conrad, K. (1999), *A Framework for Characterizing Knowledge Management Methods,* Practices *and Technologies*, George Washington Univ. Course EMGT, 298.

Nonaka, I and Takeuchi, H (1995), *The knowledge creating company: how Japanese companies create the dynamics of innovation*, Oxford University, New York, NY.

Nonaka, I., Toyama, R., and Nagata, A., (2000), "A firm as a knowledge-creating entity: a new perspective on the theory of the firm", *Industrial and Corporate Change,* Vol. 9, No.1, pp.1-15.

O'dell, C. and Hubert, C. (2011), *The new edge in knowledge: How Knowledge Management is changing the way we do business*, Wiley, Hoboken, NJ.

O'dell, C. and Grayson, C.J. Jr. with Essaides, H. (1998). *If Only We Knew What We Know: The Transfer of Internal Knowledge and Best Practice*. New York, NY: The Free Press.

Pan, S. L., and Scarborough, H., (1999), "Knowledge Management in Practice: An Explanatory Case Study"*, Technology Analysis & Strategic Management,* Vol. 11, pp.359-374.

Patton, S. (2006), *How to beat the baby boomer retirement blues*' *CIO Magazine*, available http://www.cio.com/article/16548/Knowledge_Management_KM_How_to_Beat_the_Baby_Boomer_Retirement_Blues (accessed 23 March, 2014)

Polanyi, M. (1989), *The Tacit Dimension*, University of Chicago Press, Chicago, Illinois, Originally published in 1966.

Roknuzzaman, M., and Umemoto, K. (2009), "How library practitioners view knowledge management in libraries: A qualitative study", *Library Management*, Vol. 30, No. 8/9, pp. 643-656

Rothwell, W.J. (2004), "Knowledge transfer: 12 strategies for succession management", *Impha-HR News*, February, available at www.psc.gov.sk.ca/Default.aspx?DN ¼ 50c32e82-75d8-46a0-bb1a-379e672cc48f (accessed 18 February 2014]).

Sarrafzadeh, M., Martin, B., and Hazeri, A. (2010), "Knowledge management and its potential applicability for libraries", *Library Management*, Vol. 31, No. 3, pp. 198-212.

Scott, J. (2000), ''Facilitating interorganizational learning with information technology'', *Journal of Management Information Systems*, Vol. 17, No. 2, pp. 81-113.

Siddike, M.A.K., and Islam, M.S. (2011), "Exploring the competencies of information professionals for knowledge management in the information institutions of Bangladesh" , *The International Information & Library Review*, Vol. 43, No. 3, pp.130-136.

Silke, B. and Alan, F. (2000), "The transfer of knowledge and the retention of expertise: the continuing need for global assignments", *Journal of Knowledge Management*, Vol. 4, No. 2, pp.125–137.

Southon, G. and Todd, R. (2001), "Library and information professionals and knowledge management: conceptions, challenges and conflicts", *The Australian Library Journal*, Vol. 50, No. 3, pp.259-281.

Sutherland, M., and Jordaan, W. (2004), "Factors affecting the retention of knowledge workers", *SA Journal of Human Resource Management*, Vol. 2, No.2, p.55.

Sveiby, K. E., (1997), *The new organizational wealth: managing and measuring knowledge-based assets*, Berret Koehir, San Francisco.

Teng, S. and Hawamdeh, S. (2002), "Knowledge management in public libraries", *Aslib Proceedings*, Vol. 54, No. 3, pp. 188-97.

Townley, C.T. (2001), "Knowledge management and academic libraries", *College and Research Libraries,* Vol.62, No.1, p.44-55.

Universities in Australia (n.d.) available at https://www.universitiesaustralia.edu.au/australias-universities/university-profiles (accessed February 28, 2014).

Universities in Canada. (n.d.). available at http://university-canada.net/ (accessed, February 28, 2014).

University of Texas (n.d.) "U.S. Universities, by State" available at http://www.utexas.edu/world/univ/state/ (accessed February 28, 2014).

University of Wolverhampton (n.d.). "UK Active Map of Universities and HE Institutions", available at http://www.scit.wlv.ac.uk/ukinfo/ (accessed February 28, 2014).

Wen, S. (2005), "Implementing knowledge management in academic libraries: a pragmatic approach" In *3rd China-US Library Conference*, Shanghai, March 22-25.