



CONFERENCE PAPERS

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COPING WITH TECHNOLOGY IN ACADEMIC LIBRARIES

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Abstract

Technology has provided tremendous improvements to library services. The transfer of digital information to meet all the requirements for preservation, distribution and manipulation of knowledge are significantly faster today. Radical changes are occurring in digitizing collections, preserving digital archives and improving data storage and retrieval methods. The emergence of a digital lifestyle has challenged the traditional role, vision, purpose and operation of libraries. The transition from automation to digitization meant that librarians had to acquire new skills and competencies and be educated in the new technologies, which in turn added a further burden and stress to them. Due to this transformation and the lack of formal technical qualification among librarians, it is not highly surprising that many find their job responsibilities demanding and strenuous. This paper serves as a preliminary background into the nature of librarians who are supporting library operations through the application of technologies in academic libraries. The focus is on systems librarians because they are in a better position to see issues that relate to the overall implementation and management of technological resources within the organisation. The study then discusses several strategies to cope with technologies based on a study conducted by Nicole Engard and Rachel Gordon (2012).

Keywords: Technology; Academic libraries; Systems librarians; Role of libraries and librarians

INTRODUCTION

Technology has provided tremendous improvements to library services. The transfer of digital information to meet all the requirements for preservation, distribution and manipulation of knowledge are significantly faster today more than ever before. Radical changes are occurring in digitizing collections, preserving digital archives and improving data storage and retrieval methods. The emergence of a digital lifestyle has challenged the traditional role, purpose and operation of libraries. Many years ago, the technology in libraries only revolved around automation. Librarians, systems analysts and programmers together combined their respective talents and use technologies to improve library efficiency (Wilson, 1998). The use of technology was simply a means for improving, enhancing library resources and services via automated cataloguing, circulation and acquisition systems. Today, automation has been elevated to a robust technological environment comprising of arrays of

institutional networks, hardware and application needed to provide users with access to resources and services in diverse settings. Amidst this technological evolution, the traditional library's mission of services and access to resources is still relevant. These services and resources however are taking on new meaning and constructs. With increasing level of automation in libraries, both users and staff often have to deal with concern over how technology is impacting their jobs as more and more information are available now in a wider array of format. The transition from automation to digitization meant that librarians had to acquire new skills and competencies and be educated in the new technologies, which in turn added a further burden and stress to them. Librarians, especially if they are also managers, face not only the responsibility for staying abreast of new technological developments, but also the task of trying to eliminate some of the stress these factors are causing (Mishra, 2012).

Eventhough the principles of librarianships have not changed, the containers of information and the methods we use to access such information have. What is more distressing to many is the rapidity of such change; an organization may have moved from providing print only collections to a frenzied installations of ezy proxy to provide access for subscribed databases. In another instance, Marcoux (2012) discussed how teacher librarians can integrate technology into practice. Discussing the role that smart phones, tablet PCs and other portable computing devices should play in the classroom, She said that "educators have the responsibility to determine how best to use various technologies, in what capacities and also when not to use them". She argued that teacher-librarians should provide leadership in the use of technology in teaching and learning. "Librarians must not simply be the wards of technology. We must have a new worldview. We must actively seek out new technologies and become the experts" she advocated. Issues seem to fall in the lack of teacher librarians' technology competencies as compared to students who fit the digital native profile.

Due to this transformation and the lack of formal technical qualification among librarians, it is not highly surprising that many find their job responsibilities demanding and strenuous. This paper serves as a preliminary background into the nature of librarians who are supporting library operations through the application of technologies in academic libraries. It is based on a study conducted by Engard and I Gordon (2012). The focus is on systems librarians because they are in a better position to see issues that relate to the overall implementation and management of technological resources within the organisation. The study then discusses several strategies to cope with technologies.

METHODOLOGY

Since technology is interwoven into library operations, systems librarians are essential in ensuring that technology always serves the needs of the institution. If a library lacks systems supports or lacks librarians who are able to interface with its IT department, technology may fail to meet institutional needs. As such, it would appear that systems librarians are an integral component in ensuring that institutions are able to cope with technology. In view of that, an online survey was distributed to systems librarians from more than 15 academic libraries involved in the management of technology in the library. They were required to fill in a questionnaire consisting of ten questions to get an insight on how librarians manage and interact with technology. The questions sought information in areas such as job titles and responsibilities, qualifications, IT skills that they wish were taught in library schools, skills they use as a librarian to perform systems duties effectively, percentage of systems responsibility, technical support resource and the ups and downs of running technology in the library.

FINDINGS AND DISCUSSION

It appears that job titles of those assigned to work with technology in libraries vary from library to library. A random sampling of titles from the systems librarian survey results in labels as diverse as Senior Deputy Chief Librarian, Head of Systems and Information Technology Division, Head of Automation Development, Head of System and IT Unit, E-Resources Librarian and Librarian.

About 50% or more respondents are saying that 70% of the working time is devoted to systems responsibility including automation support, help desk, computer training, troubleshooting and web development. Table 1 shows the percentages of respondents with related responsibilities. It is worth noting that at some libraries a systems librarian will personally perform all these duties while at others he/she may handle some of them directly, delegate and coordinate others and facilitate the process in yet others.

Table 1: Respondents with related responsibilities

No.	Responsibilities	%
1.	Webpage design and maintenance	80
2.	Liaison between library staff and computer services staff	80
3.	ILS maintenance and automation migration, upgrades and training	75
4.	Staff and patron technology training	65
5.	Writing/reviewing requests for proposals and required system specifications for vendors	60
6.	Desktop publishing for inhouse publications including brochures, posters, banners etc	55
7.	Computer hardware & software selection, installation, purchasing and troubleshooting	50
8.	Electronic resource selection and implementation Including Database vendor liaison	50
9.	Project management	50
10.	Managing library social network presence	45
11.	Inhouse Database development and programming	45
12.	ICT Help desk functions	40
13.	Creating technical documentation	35
14.	LAN and/or wide area network administration and security responsibilities including router, wireless, proxy server and firewall configuration	25
15.	Computer programming	20

Respondents were then asked what they wish they had learn in library school that instead have had to be learnt on the job. IT management and web development were ranked highest at 31% each followed by programming at 27%. Others include ICT project management and digitization, troubleshooting hardware and software problem, database creation and maintenance as well as data centre backup and recovery.

When asked how they use their skills as librarians to perform systems duties effectively, 27% said that they have better knowledge on how information is organised and the ability to communicate with other staff and patron on library issues which are technically related, 24% said the ability to search for information effectively and 19% on broad professional network. This is commendable because core principles of librarianship would be used to communicate with all library constituents and determine

how technology could be used most effectively. This includes communication to bridge the gap between techies and nontechies; communication with library patrons to ensure their needs are being met by the current technological environment; communication with library staff and patrons when training, providing technical support or creating documentation with library's administration to ensure they understand the importance of funding technology and training; and communication with software and hardware vendors to convey the library's unique needs and existing technological environment.

In the *Accidental Systems Librarian*, Gordon has suggested that specific technical skills can always be acquired. To succeed, what is more important is the openness to learning, capacity to embrace and facilitate change and foundation in the principles of librarianship.

The study shows majority of the systems librarians (65%) are relying on online information for tech support while 15% are in favour of IT training and assistance from vendors with only 5% on their colleagues.

Demands of systems librarian such as knowledge of library automation, computing and networking are too disparate and no one could possibly be expected to function adequately in all arenas. It is interesting to note however systems librarians tend to flourish in this environment and find satisfaction in the very thing that causes stress. When asked what they like most about systems work, 31% said because of the challenge, 25% said they like being able to troubleshoot, 21% it is never boring and 19% said they get the change to conduct analytical work. Similarly, when dealing with technology librarians found heavy and risky responsibilities the most frustrating (40%), both having to cope with change and having to learn very fast at 15%, meeting deadlines, low pay and lack of recognition, lack of IT knowledge and slow response from vendors all at 10%.

RECOMMENDATIONS

While there is no right or standard formulae that can suit every institution, the followings are suggestions derived from recent literatures which can serve as a guide on how to stay on top of emerging technologies.

1. Knowledge is power

Know the technological environment of the library, the goals of the institution and the needs of users. Decision makers must carry out an internal audit of what is currently being delivered, the way in which this is being done, and if it meets the institution's vision. Acquire the knowledge necessary to support the technology effectively and to extend the knowledge to improve users' interaction with technology.

2. Know your limits

Know precisely what the organisation and people are capable of and what level of change they will accept before deciding whether change is both necessary and realistic. It is recommended that the impact of these changes are evaluated. No change is without risk or disruption, so ensure that you have assessed this against the expected benefits.

3. Stay in control

Despite the numerous changes taking place in the world of technology, it is important that ultimate control is retained and to work responsibly. This is easier said than done especially when change involves the cloud or multiple consultants and contractors. If a project is spiraling out of control then there is a need to question whether the change should take place or whether it is done in the best way. Ensuring that current location and destination are known as well as limits and responsibilities before

investigating new technologies is an important starting point and one that can be built to make a positive change for the organization.

4. Read

- i. The most important thing that can be done is to read both print and online on technology. It does not have to be overwhelming. Skimming headlines can be useful on its own to discover new terms and product names.
- ii. Set aside time to read everyday. Have a professional reading schedule and change the sources for what is read.
- iii. For an in-depth analysis or overview on maturing technologies, refer to trade journals such as *Library Journal* or *Library Trends*.
- iv. Watch out for the cross functional world of the digital humanities as it is closer to the cutting edge. The exploration of computing and humanities frequently examines up and coming technologies that will have an impact on research, teaching, creation and preservation.
- v. Use social media and create professional social media accounts on Facebook, Google+, Twitter and follow tech specialists on Blogs,

5. Play

- i. The only way to learn a new tool is to use it and play with it. Playing with technology opens up to seeing the possibilities of how it can be useful to oneself, the library and its patrons.
- ii. Whenever possible get a piece of technology and see how it works. Start pushing buttons and see what it can do.
- iii. Write about it in blogs, emails or simply jot down one's own thoughts. The more we talk or write about what we have experienced, the more we have learned.
- iv. Communicate effectively with others in the institution. Keep the audience in mind and do not inflict excessive jargon on nontechnical library staff and do not overload with extraneous information.
- v. Informal one-on-one conversations to formal training classes.
- vi. Create regular newsletter or blog of technology tips for staff.
- vii. Create tip sheets and brochures describing various aspects of the library's computer technology that public services staff could hand out to patrons and refer to when assisting library visitors.
- viii. Create a "what's new in computers" that staff can run on their own PCs. Publish these guides online and make sure they are searchable. This way they will help both the new and existing staff in finding answers.
- ix. Send emails on how to accomplish specific tasks.

6. Teach

- i. Teach others about them. After reading, playing and understanding a new piece of technology, offer to run a workshop about it for the staff or the public.
- ii. Research a little, read a few articles or books and read what others are saying about the technology.
- iii. Listen to questions asked during sessions or class as this may provide ideas for the next marketing or promotional segments.

CONCLUSION

As mentioned earlier, this study provides an overview of librarians who are responsible of technology in a library setting. More investigations need to be carried out to identify the level of technology competencies of other librarians within the same organisation. Everyone working in libraries today is

part of a technological revolution whether they want to be or not. As such, an assessment of competencies is necessary to ensure all librarians have basic capabilities with technology.

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