Challenges and opportunities in university librarianship: the way forward

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Abstract

Libraries and information services are now moving towards an extremely challenging information environment where the principle change is the shift from print to networkable e-media. Up to now, the foundation of the library was provided through the print media where all library traditions and practices were built upon. Alternatively networked e-media could be accessed anytime anywhere and some part of it which belongs to the popular domain is visible through extremely popular search engines and some other means. These changes will yield to users information seeking behavior gradually moving away from libraries. However, as seen from a University College London research study, the concept of a 'Google generation is a myth' and popular approach of dependence on search engines to deliver everything, will neither provide access to all mostly appropriate information sources nor equip them with versatile Information Literacy (IL) skills and web skills. This aspect opens up an avenue for library professionals to plan their strategies to meet the future challenges. In this respect strengthening of the skills base too become essential. Innovative thinking and change management will be the key areas where library professionals could start their future courses of action and as a basic principle, the convenience of users has to override the convenience of the library staff. This paper presents an overview of the situation giving special attention to the prevailing domestic atmosphere.

The present era is characterized by continuous improvements in the services, consumer products and infrastructure facilities etc. available for the general public. The ultimate goal is the refinement of products, adding more features, improving efficiency and effectiveness, elimination of barriers to wide scale usage, reduction of prices or costs; and user convenience. The key driver behind these changes could be identified as research and developments in technology. Developments taking place in Information and Communication Technology (ICT) has become the leading force behind this technological revolution. Developments in ICT has had a tremendous impact on publishing, dissemination and accessing information along with the users' information seeking behavior. To visualize the magnitude and speed of this process, it is useful to understand the phenomenon known as Moore's law. Contributing an article to 'Electronics' magazine dated April 19, 1965 , Gordon Moore, a co-founder of Intel Corporation observed that "the number of transistors installed per square inch of 'Integrated Circuit' (IC chip) has doubled every year". This could be expressed as the doubling of computing power every year. According to a recent press release issued by Intel Corporation, this doubling takes place in approximately 24 months at the rate of present developments. (Intel Corporation, 2014). In order to visualize this scenario from another perspective, it is useful to go through the statistics published in the 'Global Internet Report 2014' of the Internet Society. Accordingly, there were 2,893,587,260 Internet users by May 10th, 2014 and over one billion hosts by January 2014. (Internet Society, 2014)

In order to identify the challenges and opportunities looming ahead in the future path of library profession, a brief scanning of LIS literature carried out and foregoing present a selected few most pertinent discussions.

1. Literature Survey

In a research study carried out by **Wijethunga (2014)**, the use of recommended text books, library shelves, encyclopedias, and Wikipedia and search engines by undergraduates of University of Peradeniya was given in Table 1.

Item	Minimum percentage value observed and the (faculty)	Maximum percentage value observed and the (faculty)	University average (percentage)
Use of recommended reading	58 (Agriculture)	95 (Dental)	76
Encyclopedias	14 (Dental)	46 (Science)	29
Library shelves	45 (Agriculture)	88 (Arts)	60
Wikipedia	43 (Dental)	83 (Science)	57
Search engines	41 (Dental)	96 (Agriculture)	72

Table 1 – Use of selected information sources and search engines by undergraduates of University of Peradeniya (Extracted from Wijethunga, 2014)

These findings reveal that in comparison with print resources available in the library, a significant portion of users are now using Wikipedia as well as search engines. (Wijethunga, 2014) Contributing an article titled 'Libraries on the clouds: a new wave of technology' Singh (2013) has focused on the suitability of cloud computing in libraries and how cloud computing based services could be used in libraries. Quoting Hand (2007), she has mentioned that "in cloud computing not just data resides within the cloud, but software too! The data center of hardware and software are called cloud, which when available to public is called Public Cloud. Using cloud computing libraries are not required to invest on costly IT infrastructure, and yet could derive large amount of processing power. ..." Apart from these, Singh has mentioned seven advantages in the use of cloud computing.

The **Association of College and Research Libraries (ACRL)** of the American Library Association has carried out an extensive study, and a discussion forum held at the 2012 ALA Midwinter meeting to identify top trends in academic libraries. The top ten trends identified were listed (in alphabetical order) as follows:

- Communicating value : academic libraries must prove the value they provided to the academic enterprise;

- Data curation : deal with more cloud-based repositories;

- Digital preservation: long term planning for preservation of digital collections;

- Higher education: libraries have to be sensitive to changes taking place in higher education, such as online instruction and globalization;

- Information technology: academic libraries have to be sensitive to the users' desire for information and access to social media anytime / anywhere;

- Mobile environments: provision of services through mobile devices;
- Patron-driven e-book acquisition;
- Scholarly communication: to keep pace with the changing patterns of scholarly communication and publishing;
- Staffing: to hire new staff and deploying / retraining of existing staff; and
- User behavior and expectations: convenience affects all aspects of information seeking (ACRL,2012)

Discussing the academic challenges and opportunities posed to university librarianship, **Raghavan (2010)** has summarized the multiple roles to be played by the university librarians as follows: "as teachers in designing knowledge literacy programs and evaluation of resources; as technocrats in adopting new technologies; as chief executives in recruitment, training, developing, new projects and managing the operations; as researchers in identifying and new theories and solutions in providing services to a large user group from a range of academic campuses; consultant of information systems; fund raisers in taping the resources from industry and research bodies ; and as quality expert in assessing the user behaviours and improving the facilities for optimum use" .(Raghavan, 2010)

Jayasuriya (2010), under the topic `Academic libraries: challenges ahead' has mentioned that state of the art technology as the driving force changing the face of the traditional library. Further, she stresses the need for the library professionals to develop the set of skills which includes teaching, research and management of ICT based resources and services. She also points out the need to possess higher degrees in the field of LIS as well as other subject disciplines taught at the university. (Jayasuriya, 2010)

In presenting the report of the Libraries and Information Network of the Association of Commonwealth Universities (ACU) , **Harle (2009)** identifies the priority areas as identified by university librarians across the British Commonwealth countries in the following order: Digital / e-libraries including digitizing collections, information literacy skills training, library website / online library services, learning commons or other changes to library learning skills, institutional repositories / online research publishing, library or institution ICT and information systems development. Accordingly, it is emphasized the need to inculcate new skills that are required to keep pace with the emerging trends. (Harle, 2009)

Ramana (2010) emphasizes the need to make effective use of technology as a key to future librarianship. In discussing the important aspects which needs attention of university library professionals, he cites the creation of comfortable learning environment, management of digital information resources, development of institutional repositories, organization of virtual reference services, development of digital library services and teaching information literacy skills as the most important aspects As this paper does not warrant a lengthy literature survey, it is limited to a few most noteworthy discussions mentioned above.

These findings and observations help us to create a mental picture about the emerging situation about the publishing industry, library information service provision and user behavior. However, it is important to note that the changes and impacts observed in the developed world may not take place at equal pace in the developing countries. This factor is also applicable to Sri Lanka, which is now regarded as an emerging economy. The above mentioned changes, trends etc. have to be viewed from a point of view of the situation prevailing in Sri Lanka and constraints or limitations that may arise domestically. The foregoing discussion takes place in light of the above considerations. Accordingly, listed below are some universal changes or trends which are important in shaping the future academic library services in the country.

2. Challenges and opportunities

Shift from print to e-formats

There is a clear shift from print to e-formats in the publishing industry. Unlike in print media, electronic documents can be copied at a key stroke without consuming additional resources. They could be sent across the globe instantly without any transport or delivery cost. At the library level, multiple users can use it anytime anywhere. Besides, almost all academic papers etc. are prepared by authors as machine-readable copies which is a few clicks away from publishing electronically . In addition to all these factors, libraries do not require additional shelving and library space to store such sources and maintenance too become a thing of the past.

In case of academic journals, a vast majority of titles are published in electronic or print+electronic formats, the general tendency being the move towards electronic only publications. Similarly, books are increasingly being published as e-books. These are available for access through libraries as 'bundles or packages containing a number of titles' or as individual titles . At the same time individual users can buy and use them with portable devices such as "Amazon's Kindle Book Reader".

Another trend associated with the shift from print to e-formats is the publishers and vendors offer of subscriptions to a number of full text journals and e-books etc. bundled as a package. These are based on broader disciplines and any subscription to such a package will allow access to a mixed bag of periodicals, which includes essential, some what essential as well as not essential titles for a given library. Discussions with such publishers and their agents or vendors reveal that they like libraries to form as consortia and reach agreements to subscribe for longer periods such as three to five years.

In considering the complete switchover from print to e-mode, one of the important necessities is the ability of individual users to use them at their residential places which is still a far away target. Another important constraint is the lack of relevant e-books in Sinhala language.

Open Access Initiatives (OAI)

Budapest Open Access Initiative defines Open Access (OA) as follows : "By open access to this , we mean its free availability on the public internet, permitting any user to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself". (Swan, n.d.) Open access can be provided in two ways: A researcher can place a copy of each article in an open repository or can publish articles in open access journals. In addition, any researcher may place a copy of each article in a personal departmental website. The Directory of Open Access Journals (DOAJ), a service offered by University of Lund is a best example to illustrate a website providing access to OA content.

OA initiatives are supported by learned societies, universities and individual researchers etc. worldwide. One of the best examples is the initiatives taken by the highly prestigious Harvard University in this sphere. Availability of open source software such as DSpace, Greenstone, FEDORA and Eprints for the development of digital libraries also ensures the generation of OA content at will. Alternatively, OA resources assist university libraries to offer library information services economically. Swan's observation that "a typical UK university might save some £ 500,000 – 600,000 per annum" signifies the economic impact of OA initiatives. (Swan, n.d.)

Open Source Software

During the latter part of the past century, one of the biggest constraints preventing the use of ICT based library applications in developing countries was the need to acquire expensive commercial

software meant for such applications. However, subsequent development of 'Free Open Source Software' which are commonly referred-to as FOSS, has greatly relieved librarians from this financial burden. At present, there is open source software for a variety of library and information service applications, some of which are listed below:

Operating systems	:Linux
Database management systems	:WINISIS, MySQL
Integrated library management systems	:KOHA, PMB, Evergreen
Digital library development	:DSpace, Greenstone, EPrints, FEDORA
Web content management systems	: JOOMLA
Online e-learning systems	: MOODLE
Referencing / citation management	: Zotero

It is to be noted here that most of these software are now used in Sri Lanka, and therefore subject expertise is available locally.

Mobile technology

One of the most visible developments accruing out of developments in ICT is the increasing use of mobile communication devices. Smart phones, tablets, i-Pads, portable e-book readers etc. have become a realistic possession today .In order to use these devices for information access / retrieval purposes, the interface known as 'Apps' are also being developed. For example, full text database publishers / vendors such as EBSCO, Elsevier, JSTOR, Thomson Reuters etc. have developed Apps for use of their content. Elaborating this factor, Joiner states that "there have been more than 200,000 applications that were created and programmed just for the i-Pad and more than 500,000 applications through the App Store" (Joiner, 2014).

Changes in higher education

As a major operational unit in any university, university libraries are directly exposed to the changes taking place in higher education sphere. Sensitivity to these changes will enable library professionals to make requisite adjustments or improvements so that libraries could operate in a more harmonious atmosphere conducive for the development of university libraries. Some such issues which are relevant to library professionals are as follows:

- **Need for continuous expansion:** The phenomenon of ever increasing demand for opportunities in higher educational institutes demands continuous increase in facilities. This demand is usually addressed through the introduction of new study courses and increasing the student intake for existing courses. In both these occasions, it is the responsibility of the library to provide facilities to satisfy the demand.

- **Shifting emphasis towards learner centered education:** This factor too make the need to provide information resources and facilities appropriate for students.

- **Employability of graduates:** The government has identified the need to turn out graduates who are employable in state and private sectors and also able to succeed as entrepreneurs who are self employed and may create employment opportunities for some others.

- **Use of online methods:** In most of the universities efforts are made to offer course contents online for the use of undergraduate and postgraduate students. Subsequently, mobile technology was introduced in some postgraduate programmes to enable students to follow them in a wider

context. These initiatives will also require libraries to focus attention on developing applications compatible with such study programmes.

- **Globalization of higher education:** Higher education or the 'knowledge industry' has become a major source of income for developed countries along with such industries as pharmaceuticals and motor vehicles. They reach this goal either by attracting students for overseas campuses or establishing offshore campuses in students' own countries. This development too will create some imbalances in respect of library service provision. For example, in some offshore or affiliated institutions located in Sri Lanka, students may have access to a vast range of e-information sources through their parent university abroad.

Emergence of a Google generation

With the expansion of access routes to Internet, there is a growing tendency for students to become more dependent on search engines and online accessible content to satisfy their information needs. However, widespread use of search engines may not make students well versed with the information skills needed to identify, locate, retrieve and comprehend suitable information sources. This situation was revealed in a study carried out by the University College London and quoting their report Harle has mentioned the phenomenon of 'Google generation' in the following manner: "A 2008 report by the CIBER project (University College London) explodes the many assumptions about the so-called 'Google generation' and their aptitude for online information seeking, and argues that, despite their internet use, many are not actually web literate, lack critical information skills, and are poorly equipped to access material in their supposedly natural environment" (Harle, 2009). This situation offers a clear direction to university library professionals in imparting information and web literacy skills to all students.

Convergence of services

In Sri Lanka, provision of library facilities and Internet access facilities are handled separately by two sides, namely the library and the university computer center. The latter function is usually entrusted to faculty members with expertise in some area of computer science. However, since the information sources are becoming available through the Internet, there is some distant possibility for computer centers to absorb this function. According to the ACU report mentioned above, a quarter of UK university libraries are working in some form of combination. It is very much desirable for library professionals to focus their attention in this area.

Change management

From the preceding discussion, it is evident that there are changes taking place in numerous areas directly related to library activities. The only possible deviation here would be the time taken to reach the situation now prevailing in developed countries. It is to be noted here that continuous technological advancements coupled with cost reductions bring these dreams into reality within a relatively shorter periods of time. In order to successfully cope with the emerging situation, it is required to identify the need for change management. Change management can be considered as a trend as well as a strategy to cope with changes.

Wikipedia defines change management as " an approach to transitioning individuals, teams and organizations to a desired future state". A transcript of a video presentation on 'change management vs change leadership – what's the difference' by John Kotter hosted in the Forbes online website describes this aspect as follows: "... is a set of processes and tools and a set of mechanisms that are designed to make sure that when you do try to make some changes, A, it does not get out of control, and B, the number of problems associated with it- you know rebellion among the ranks, bleeding of cash that you can't afford- does not happen. So it is a way making a big change, and keeping it in a sense, under control" (Kotter,2011).

A successful change management programme may consist of the following steps:

Dialogue with all relevant stakeholders to enable the visualization of possible scenarios applicable in the individual library context and time frame;

- Strategic planning with the concurrence of the parent body;
- Defining of new services etc. to be commenced;
- Reframing of the organizational structure;
- Defining of new roles and responsibilities;
- Development of human resources with proper training to impart needed skills etc.;
- Development of infrastructure;
- Communication with all stakeholders; and
- Implementation of proposed changes.

3.   The way forward

Future of library profession could be brightened by transforming the challenges looming ahead into opportunities. In order to proceed in this direction, all library professionals should assess whether they are able to deliver the envisaged products and services from their present level of preparedness. In other words, this translates into a situation analysis where a simple SWOT analysis would help in identifying what to do. This has to be carried out by each individual, at their personal level and each library at their institutional level. It is still better to establish forums where librarians can get together and work out joint strategies at the national level. The last step will specially help `resource- poor` libraries in sharing experiences and combined efforts in training etc. Apart from this general approach, the following is a list of strategies which may be useful in achieving the ultimate objective of sustainability and development.

Strengthening the skills base

In order to survive and thrive in highly turbulent information space, library professionals must be equipped with necessary skills, correct mental attitudes and the commitment. Advanced ICT skills will be essential to translate their expertise in online environments and to utilize latest technologies. Therefore, it is necessary to identify the skills needed to implement envisaged plans. The result can be matched with skills already possessed by the existing staff and gaps have to be identified. Whenever possible, the existing staff could be trained through workshops, hands-on sessions, special training programmes etc. If this is not possible, action must be taken to hire experts on desired areas temporarily on contact basis etc. or permanently. As special training programmes may be expensive and logistically not possible for a single institution, a joint forum such as the Standing Committee on Libraries and Information Sciences (SCOLIS) of the UGC in association with such bodies as the University Librarians' Association and Sri Lanka University Library Assistants Association could devise a strategy covering all university libraries in the country.

A major component of the role to be played by future librarians can be expected as `teaching or instruction`. In order to be a good teacher, teaching skills, presentation skills, multi lingual communication skills, testing and evaluation skills, research supervision skills etc. have to be developed. One of the most convenient ways to fill this gap is to make it compulsory for early career professional librarians and new recruits to attend staff development programmes conduct for faculty members by different universities and approval of leave and payment of course fees etc. by respective universities.

Strategic planning

University libraries have to prepare strategic plan in conformity with the parent university's such plan. In order to make senior library professionals well versed with this aspect it is desirable to impart training on this aspect possibly exposing them to corporate practices used by large scale commercial ventures etc. Outside institutions such as Sri Lanka Institute of Development Administration (SLIDA) may be requested to coordinate and conduct such ventures. At the same time, senior library professionals should play an active role in the preparation of university strategic plans, curriculum development etc.

Team building

Within each library, each individual employee must be brought under one closely knitted team. This may appear to be a simple task, yet to arrive at that stage may be difficult. A mechanism must be developed to get the participation of all library employees in the development efforts of the library . For example, groups can be defined according to their job title, service section, on specific issues such as strategic planning, ICT development, IL skills development, library security etc. Meetings of these groups can be convened when required and also at regular intervals. At these meetings, staff members must have the freedom to express their views, suggestions and criticisms. It is important in noting here that some issues not visible to higher officers in a library are well known by the lower ranks and they do not communicate it to higher authorities for no reason. In the forums mentioned above the ground situation become apparent through the views and suggestions etc. expressed by such employees. It is also equally important in maintaining control over the discussion on debatable issues and avoid conflicting situations through the application of careful and tactful leadership.

Inter library cooperation

The emergence of an electronic era offers more opportunities for improving inter library cooperation. Library consortia and networks will provide a formal organizational structure to operate this activity. The recent conclusion of entering consortia subscriptions covering the 15 national universities under the UGC to a selected number of full text databases is an exemplary effort in this direction. This approach can be used to organize training programs or workshops on such themes as IL skills development, strategic planning, ICT developments, sharing of bibliographic data etc. In order to motivate attendance of all relevant professionals, facilities such as bearing of participation costs, provision of transport facilities, sponsoring of such programmes etc. have to be undertaken by UGC or universities. This type of events enable library professionals to identify 'specialist librarians among the population' and get their assistance to develop applications in other libraries.

Convenience of users

Library facilities may be re-arranged to make them more convenient and attractive to users. As the modern trend is to offer alternative learning spaces, areas known as 'Information commons' where ordinary library resources are integrated with ICT facilities and readers' advisory services may be established. It is also important in providing individual learning spaces as well as group study areas. If a library could act as a social hub where users are coming to the library not only to satisfy information requirements, but also to spend their free time meaningfully, it will ensure economical use of resources along with the sustainability of library profession. For example, adding selected novels such as literary festival prize winners will attract users and at the same time they will pick up one or too non-fictions thereby increasing the circulation of books. A welcoming atmosphere cannot be just created by infrastructural developments. Rather, all library employees must extend a cordial response to their queries and assisting in locating appropriate materials etc.

Provision of facilities for photocopying, scanning, downloading, use of own laptops etc. within the library are some important considerations in this aspect. By breaking traditional barriers, provision of facilities even to have a cup of tea or coffee while viewing a TV channel such as Discovery or National Geographic may help the library to raise its image as a public utility.

Social media could be used to communicate with the library users, to make announcements, and also to get their feedback. For example library opening hours, special programmes etc. could be posted at such sites.

Information literacy skills development

As mentioned earlier, selecting and using information sources from the virtual world is more difficult than what it was earlier – the print world. Therefore, tailor made information / web literacy skills development programs will open an avenue for library professionals to continue their professional work.

Development of internal staff, faculty – library collaboration in developing IL programmes, absorption of such courses into university curricula, provision of lecture rooms, pc labs etc. to conduct IL programmes in the library are some meaningful steps in this direction. Apart from this, special presentations, workshops, hands-on-sessions etc. could be arranged for postgraduate students and faculty staff. These steps will enable the accordance of 'academic status' without our request for recognition.

Use of ICT

A modern librarian cannot be separated from the need to use ICT in some form or other. As such, all library professionals must acquire some basic competence in general applications. At the same time steps have to be taken to ensure that specialist librarians with specific skills like integrated systems maintenance, maintenance of hardware and networks, development and maintenance of institutional repository/ digital library/ web based information services etc. will be available at some predetermined time schedule. A library ICT applications development programme can be started in a small way with the implementation of components which are realistic with the existing resource base. The IT roadmap can be prepared to guide the future path and to request the inputs needed from the parent university.

Supporting research

During the past, library professionals supported researchers by providing source materials required for research work. At present, with the arrival of OA initiatives and e-repositories etc. library professionals could assist faculty members to publicize their research findings. By making these repositories freely available online, researchers work will be more readily visible to outside world through mainstream search engines thus increasing their citation counts, impact factors etc. In addition, library professionals can inform faculty members about research tools available for improvement of their research productivity. For example, open source software useful for their research and publication work such as Zotero reference /citation management software, LaTex software which includes features designed for the production of research reports and theses etc. could be brought to the attention of the faculty staff.

Marketing of library services

In order to improve the use of library services and resources or to halt the tendency of declining use in some instances, marketing techniques could be effectively used. From a LIS professionals' perspective, some of these aspects can also be viewed as library extension activities. Preparation of library orientation videos, adding video clips and library virtual tours, use of social

media, organization of exhibitions, workshops, seminars, discussions, guest lectures, poster displays, use of advertising media to make visible of the resources and services available in the library through television and other visual displays, preparation of promotional materials such as library logo printed T-shirts, caps and bookmarks are some of the methods useful in a marketing campaign. These activities will help the library to send a powerful message indicating its presence to all stakeholders.

Innovative thinking

During the pre-Internet era it was needed to physically visit other libraries, museums etc. to get some understanding about how they have organized their resources, services and infrastructure. Today, any interested person could visit most of the libraries across the world without any movement. This will give an opportunity to see the other libraries to some extent without incurring any cost or effort. Presenting research papers in international conferences will enable LIS professionals to visit other countries. All these experiences combined with imaginations will lead to innovations. Although there are chances to go wrong, possible and sustainable measures have to be identified and efforts must be made to implement.

Conclusion

As library professionals, we follow the footsteps of giants in LIS field, such as Dewey, Ranganathan, Cutter, Pannizzi to name a few. Now it is required to add some more names from other disciplines to this list, such as Bill Gates, Tim Berners-Lee, Mark Zuckerberg etc. Sensitivity to changes taking place in the surrounding world, making necessary adjustments in our skills, attitudes and knowledge base and work with dedication and commitment will enable library professionals to face challenges successfully and prosper in the future.

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