Harnessing Innovations in Libraries and Information Centres: Issues and Trends

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Introduction
Innovation policy, although fashionable is often misunderstood; it is an appendix to science and technology policy, as often presented. Innovation-the application of knowledge of all types to achieve desired social and economic outcomes-is broader than science and technology, often combining technical, organizational, and other sorts of changes[1].The innovation system plays an important role in acquiring, creating, adopting, and disseminating knowledge, which is crucial for success in the knowledge economy. The innovation system in any country consists of the network of institutions, rules, and procedures that differ how the county acquires, creates, disseminates, and uses knowledge[2]. Librarians are now actively engaged in developing digital libraries, which will extend and enhance the common notion of a library. In so doing they will help extend the limits of electronic imaging, data transmission, automatic indexing, natural language processing, and numerous other related technologies. If history is any guide, librarians will uncover the problems, help to define the solutions and be among the earliest adopters of those solutions[3].Contextually, the philosophy of innovations is applied to the organizational and operational excellence of libraries and information centres all across the world.

Change and Innovation
The terms change and innovation are often used interchangeably. An innovation, or a change, is traditionally defined as any idea, practice or object, which is seen to be new by the individual or the organization either adopting or rejecting it. Even though the idea has been around for a while and is known to other organizations, it is still considered an innovation or a change if it is new to the organization considering it[4]. Therefore, change or innovation in libraries and information centres has become imperative due to the technological revolution and prolific growth of electronic information of late.

Why library innovation?
Due to dramatic changes in the information environment and the ICT sector, library managers have interest not only to adapt to these sweeping changes, but, more importantly to trigger innovative ideas from their personnel with a view to remain at the frontiers of knowledge rather than mere passive observers. Technology can be used creatively in service delivery by means of the mobile phone, for instance. Some libraries have adopted this tool to send overdue reminders to patrons for the late return of library materials whereas others use this for current awareness. While technology is definitely part of the solution, there is no reason to over-glorify technology and overlook the human resource behind the technological revolution[5]**.** Librarians have, in recent years, by introducing OPACs, CD-ROM databases and Internet access into their libraries, convincingly demonstrated their ability to master, manage and use advanced technologies. Thus, it has become fashionable to speak of a new librarianship and of a new image of librarians. The perception may be new, and recognition gratifying, however, in reality librarians have long been pioneering users of new technologies. Contrary to popular notions, librarians have always been among the first to adapt ad use the latest information handling and communication technologies[3].

The range and complexity of challenges facing libraries and librarians today are unprecedented. Certainly the proliferation of information technologies has made a significant impact on libraries in the way they deliver their services and content as well as the format of that very content as most libraries move towards digital collections or at the very least hybrid print and digital collections. In this environment there is also growing expectations of users for quality, accuracy and immediate responsiveness to their needs [6].Ramjaun[5] **remarks that Innovation in libraries is inevitable due to the following reasons:**

- The discovery of unmet user needs.

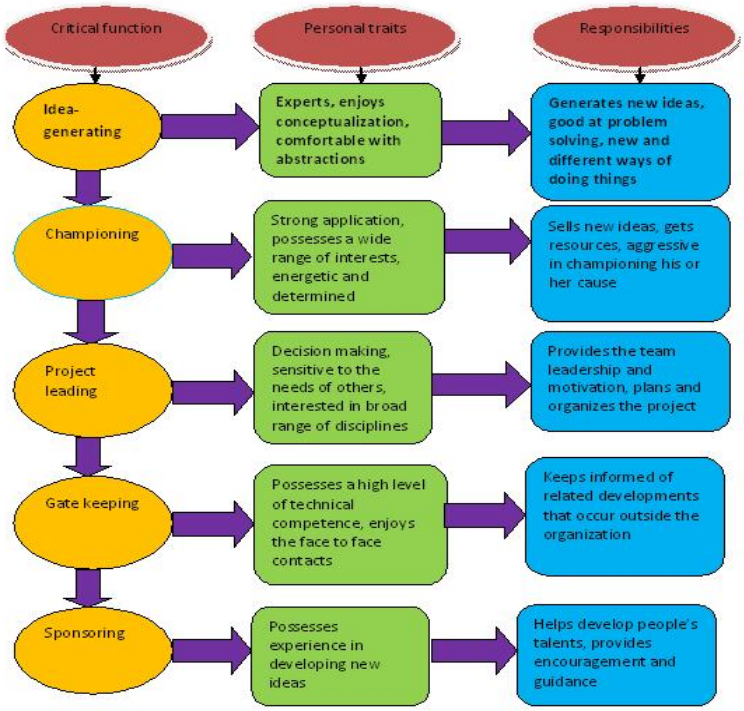
- The introduction of new services or the retooling of traditional services resulting in a better user experience.
- Creative collaboration among libraries or between libraries and other institutions explorations of the future of libraries.
- Implementing new technologies to improve and extend library services to meet user needs.
- Redefining processes that encourage finding new and better ways to make library collections and facilities more useful.
- Incorporating best practices from foreign libraries wherever possible.

In order to survive major changes in the environment, libraries have to become more innovative. Innovation exploits change and provides libraries with the means to deal with the unstructured problems arising out of changing environments[7]. In a nutshell, it is evident that due to flood of electronic information harmonizing with the advent of modern ICT devices, the information professionals desperately seek to revamp and re-engineer their methods of delivering services to the users' community by switching over traditional practices to electronic information systems and services through an innovative approach.

Success factors for Innovation

Roberts and Fusfeld (1981) [8] have rightly identified five key factors that are responsible for the success of innovation namely, idea-generating, chompioning, project leading, gate-keeping, and sponsoring or coaching. Their ideas on the critical functions in the innovation process may be illustrated in fig 1

Fig 1 Critical functions in the innovation process



Source: Roberts and Fusfeld (1981); authors

Policy Instruments for library innovation

The successful implementation of the scheme of Innovations in libraries largely depend upon various policy instruments depending upon the library ambiance, administrative lookout, readership,the size of the libraries, technological infrastructure, investment capacity and such other factors. Accordingly, objectives of innovations vary from libraries to libraries depending upon their technological set-up. Table I depicts the policy instruments applicable to different types of libraries with regard to their innovation objectives:

Table I Policy instruments suitable for library innovation

Types of libraries	Innovation objectives	Policy instruments
Library with low-technology	Build awareness of scope and benefits of innovation	• Management and skills development • Innovation awareness and understanding • Productivity enhancing services • Innovation identification and match making
Library with modest technology	Introduce basic innovation skills, encourage adoption and application of new ideas	• Product diversification and quality improvement • Management and skills development • Internet-based information services • Technology awareness and marketing • Support for technology adoption • Consultancy and technical assistance support
Technically competent library	Build in-house innovation capabilities	• Internet-based information services • Innovation and technology support • Linkages with academic researchers

Source: Adopted from World Bank, 2007

Important trends in library innovation

Savenje(1999)[9] remarks that currently libraries find themselves confronted with a second computerization wave. The first wave took place during the seventies and turned manual back-room activities such as acquiring, distribution, and cataloguing into computer-controlled activities. Commercial enterprises began marketing and selling products designed for computerizing the library's distribution cataloguing and acquisition systems. The computerization wave of the 90s witnessed the deployment of computer networks, campus wide networks at universities as well as national and international networks. These networks provide access to remote electronic information by means of library information systems. Furthermore, available electronic information is no longer limited to so called secondary information (catalogues, bibliographic databases). Also primary information has now become electronically available. Presently, we can refer to the electronic full-text versions of scientific journals. Electronic text books and readers enable us to consult information outside the library i.e, at the professional and private worksite of the library's traditional customer within the context of innovation. Savenije[9] points out the following three fundamental trends:

- The library is shifting its focus from concentrating on supply towards what is asked for by its customers. In correspondence with this trend, information reference is becoming more and more significant. The library acquires a gateway function, referring to information, irrespective of the location where it has been physically stored. Growing importance will be put on navigation. By and large, users will prefer to find their own way across the large amount of available information. To an increasing extent, services will be offered from a distance: the users will choose to consult their sources sitting at their own desk, at their own computer. This in turn, implies that the library needs to

increase the accessible electronic collection, which is accomplished by disclosing sources elsewhere, but also by electronically providing material that has already been available on paper.

- As a result of growing internet, the library services are blending with the teaching process. A similar trend can be observed in the process of research. Here, the fundamental stages are the identification of sources, the exchange of information with colleagues, the interpretations and analysis of data and the dissemination of findings. In this case, the boundaries between the provision of information and the various stages in the research process are fading as well. Comparable tendencies are becoming apparent in other primary processes they are serving. This implies that we should no longer consider the library task as some sort of overhead services. On the contrary, they are developing into a directly productive force.

- A third trend is related to the so called information chain. The role of the library is often described as a link in this information chain. At the moment, we can notice various problems connected to this chain. Traditionally, the various stages have been strictly distinguished in terms of chains main functions, i.e, subsequently in the production, distribution, acquisition, and consumption of information. However, this chain is exploding due to technological developments and information transfer and the system is starting to shrink due to the pressure exerted by the environment.

Comprehending the above trends, the traditional practice of librarianship is rapidly adapting to innovations in the form of novel strategies coupled with creativity and new technological adoptions.

Technological trends

It should not be inferred that technology alone will solve the library‘s operational problems. There is a great need to understand more fully the fundamentals of library service and the nature of user needs. Librarians will have to become more knowledgeable about consumer demand, the uses of information and the value of information to the user[10].Technological innovations have the potential to alter the nature of any industry. The information industry seems particularly subject to the effects of technology and currently is adapting to the introduction of a number of technological advances that are associated with the general availability of networked electronic information resources. The advent of systems that allow documents to be created electronically, stored and maintained in computers, and easily found and read using high-speed communications networks may produce dramatic changes in the information industry. It is certainly not clear whether documents prepared, distributed, and used through this new technology will replace or augment information resources published using more traditional media, but it seems likely that this new technology will bring about some changes in the structure of information industry[11].

Technological change provides a case in point. Based on their knowledge of what is possible in today’s high technology world and their awareness of successful technological applications in other libraries, professional librarians may have a vision of where the library should be heading with regard to the provision of information in electronic or digital form[4].The rapid pace of technology innovation requires librarians to look for simple ways to monitor new trends that may affect library services. Podcasts, RSS readers and messaging networks like Twitter each represent low-threshold tools that can serve as resources for breaking news, reviews, and technology journalism. Many libraries have enthusiastically courted innovation by adopting collaborative Web 2.0 technologies, designing content for mobile devices, and incorporating video into their next-generation library websites, in an effort to improve services for patrons and collaboration among staff and colleagues. While the academic community can always rely on technology-oriented journals and newsletters produced by their peers to place innovation in context and document new implementations over time, the breakneck pace of web, technology, and gadget innovation requires us to look for simple ways to stay current on a daily basis[12].

Podcasts

Podcasts are audio or video programs posted online in standard formats such MP3 and MP4 and distributed by subscription via RSS syndication. Since the ability to record and upload content is now within reach of just about anyone with a laptop, a portable headset, and a free blogging account, the range of topics and

perspectives available is truly staggering[12].

RSS feed readers

RSS feed readers aggregate news headlines, blog posts, articles, and other dynamic content from across the web, all in a single convenient preview and reading environment. Also known as news readers, these applications provide a convenient way for users to subscribe to their favorite web sites and to monitor each new item posted, without ever having to visit the site itself. Virtually every website, blog, online newspaper, or social networking site now incorporates either RSS or ATOM coding, two XML-based syndication standards that make subscription to the latest news an effortless process. Feed readers can be web-based applications, standalone clients, or elements incorporated into the web browsers and email clients we already use on a daily basis [12].

Web-based RSS readers

Web-based RSS readers like Google Reader, Bloglines and Shyftr offer free, flexible platforms for users to follow as many websites as they like. Web-based readers are similar to popular webmail services like Hotmail and Yahoo Mail in that they allow users to create personal accounts and log in from anywhere in the world, while retaining personal settings and content. Google Reader can be accessed directly at URL http://reader.google.com. Users who already have a Google account associated with Gmail, Google Calendar, or Google Documents may log in with their usual credentials. New users can "Create a New Account" and then immediately start building a personal news page [12].

Twitter

Although podcasts and RSS readers provide fast, efficient tools for monitoring technology news, information professionals should also consider adopting Twitter (http://twitter.com), the popular Web 2.0 messaging service, as a connection to breaking news and insights as they first stream out across the web. Twitter is an online social networking service that allows users to create a personal account and leave brief public messages of 140 characters or less. Many libraries have already started experimenting with library Twitter accounts as an outreach tool to share news, events, and links with their patrons. However, Twitter can also be viewed as extremely powerful, customizable news feed [12].

Web Publishing

Wordpress started out as a quick, free, open-source solution blogging solution just a few years ago; today it is a perfect alternative to building a web site from scratch. In addition to being free to use (and easy to install), the Wordpress community has exploded, with thousands of users and programmers creating custom themes and plug-ins to completely change the way the software looks and operates. The most important aspect of the software is it's easy-to-use interface and content management system. With it's visual rich editor, anyone can publish text and photos to the web site. Other options include multiple authors (with separate log-ins), built in RSS (Real Simple Syndication) technology to keep subscribers updated, and a comment system that allows readers to interact with the sites content. A fantastic way to communicate with patrons, staff, etc.[13]

Drupal is another open source web publishing option that some libraries may want to consider using. One of the most important aspects of any library is its community, and that's where the technology behind Drupal might come in to play a little better. Many have used the software to build rich community based web sites where many different users can control a large amount of content. Some examples include web portals, discussion sites, corporate web sites, and intranet (internal) web applications. Just like Wordpress, Drupal as an ever growing community of users developing add-ons to make the software work better in addition to providing technical support online to answer any of your installation or maintenance difficulties[13].

MediaWiki is the original software that powered the famous Wikipedia, which basically allows users to create and edit information from a very simple to use text interface. Another open source wiki platform is TWiki, a flexible and powerful enterprise wiki that is perfect for project management. These wiki solutions can be used as alternatives to the web publishing methods used above, but can better be used as the library's place to keep maintenance and training information available that can constantly be updated as library operations change and develop. Imagine keeping the employee and support community of your

library up-to-date with the inner workings through a community wiki, where they can go to troubleshoot any problems that may have been already solved once before in the past[32].

Synthesite.com is one of the free web publishing sites. Librarians should make their website free of cost on this site and also can publish their documents easily[14].

The development of soft environment for innovation

The development of soft environment mainly consists of four aspects[15]:

- The first is to set up the vision of knowledge innovation in libraries.
- The second is to foster the spirit of consciousness of daring to run risk and do innovation. If there is not the atmosphere of encouraging staffs doing innovation actively, and staffs are only demanded to satisfy with status quo and drift along, staffs naturally do not engage in any innovative activities, let alone failure.
- The third is to set up incentive mechanisms to encourage staffs to participate in knowledge exchange, sharing, and creation.
- The fourth is to create a kind of atmosphere allowing failure. As there always exist a great variety of risks for innovation, not every innovation dooms to be success.

Indian Scenario

The National Knowledge Commission (NKC) was set up by the Prime Minister of India to guide and advice for the proper utilization of the vast knowledge base of India towards building an equitable knowledge society. Library and Information system and services (LIS) is one of the major issues of concern in the prime focus area of Access to knowledge. The NKC therefore took it up as one of its first initiatives to review the present LIS scenario of India and prepare a roadmap for more relevant and need based Library service. There is a need to formulate and create mechanisms and institutions which will bring about a paradigm shift in the LIS scenario, to bridge the gap between the information poor and the information rich[16].With the mandate of NKC, different types of libraries have been networked through relevant ICT applications. Libraries of IITs and IIMs have taken up right kind of initiatives in digitizing resources, creating institutional repositories, and developing websites. All university libraries of the country have started to revamp and re-engineer their services through electronic media by e-subscriptions, e-journal consortiums, and priced online databases. Above all, the urge for innovations of libraries and information centres in India is quite conspicuous.

Conclusion

A lot of strategies can be adopted to develop knowledge innovation culture of libraries, which consists of establishing the environment beneficial to knowledge innovation, creating a learning culture, shaping knowledge-based team organization, improving trust and cooperation, enhancing human resource development and cultivating knowledge innovation talents[15]. The tools and resources that we present in this paper are just a glimpse of advanced technology innovations. There are numerous other modern technologies developed of late. Therefore, it is high time for the policy makers, planners, and library administrators to properly look at how they encourage innovations in libraries for ensuring effective channelization of information resources. Moreover, the information professionals are supposed to keep track of the revelations of technology innovations so that their practical applications in libraries and information systems can be effectively implemented for promoting up-to-date and value based information services to the users of innovative techno generation.

References

1. World Bank.(2007), “Innovation policies in Latin America II” Office of the Chief Economist, Latin America and the Caribbean Region, Washington, DC
2. Dahlman, C. and Utz,A.(2005), “India and the knowledge Economy : leveraging strength

and opportunities", The World Bank, Washington, DC.

3. Malinconico, S. M.(1997), "Librarians and Innovation : An American view point", *Program*, Vol.31 No.1, pp.47-58, available at: http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldAbstractOnlyArticle/Articles/2800310104.html, accessed 4 September,2009.
4. Pungitore, V. L.(1995), Innovation and the library : the adoption of new ideas in public libraries, Greenwood press; West port, available at : http://books.google.co.in/books?hl=en&lr=&id=0fSKdqu7XlgC&oi=fnd&pg=PP13&dq=%22library+innovation%22&ots=e2BM6mhMVc&sig=sZi2-evu3DnRe5yaDb8EU_LB26g#v=onepage&q=&f=false, accessed 12 September, 2009.
5. Ramjaun, I.(2008), "Creativity and innovation in Libraries", available at: http://liamofmauritius.wordpress.com/2009/03/21/creativity-and-innovation-in-libraries/
6. Sidorko, P. E.(2007), "Fostering innovation in library management and leadership", *Library Management*, Vol.28 No.1/2 , pp.5-16, available at:http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/0150280101.html, accessed 13 September,2009.
7. Bryon, J.(1996), Effective library and information centre management, Jaico: Bombay.
8. Roberts, E. B. and Fusfed, A. R. (1981), "Staffing the innovation technology based organization", *Sloan Management Review*, Spring, pp. 19-32.
9. Savenije, B.(1999), "Organising library innovation", available at: http://www.library.uu.nl/staff/savenije/publicaties/ticer99.htm, accessed 9 September, 2009.
10. Drake, M. A. and Olsen, H. A.(1979), "The economics of Library Innovation", *Library Trends*,Vol.28, No.1, pp.89-106, available at: http://www.ideals.uiuc.edu/bitstream/handle/2142/7064/librarytrendsv28i1h_opt.pdf?sequence=1, accessed 12 September, 2009.
11. Allen, B.(1995), "Academic information services: A library management perspective", *Library Trends*, Vol. 43 No.4, pp.645-62, available at: https://www.ideals.uiuc.edu/bitstream/handle/2142/7987/librarytrendsv43i4j_opt.pdf?sequence=1, accessed 4 September, 2009.
12. Wilson, D. W.(2008), "Monitoring technology trends with podcasts, RSS and Twitter", Library *Hi Tech News*, Vol.25 No. 10, pp.8-12.Availabe at: http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/2390251003.html, accessed 5 September, 2009.
13. Hebert, E.(2006), "How Open Source Software Can Improve Our Library", available at: http://www.degreetutor.com/library/managing-expenses/open-source-library, accessed 15 September, 2009.
14. Biswas, G. and Paul, D.(2009), "Open source resource for library and information centre for their service", In Kumar, S, Ed. Library & Information Technology : Driving Management Education, New Delhi, Vayu Education of India.
15. Sheng, X. and Sun, L.(2007)"Developing knowledge innovation culture of libraries", *Library Management*, Vol.28 No ½, pp. 36-52, available at: http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/0150280104.html, accessed 9 September, 2009.
16. Das Gupta, K.(2007), "The Knowledge Commision and Libraries : A vision for the future", Delhi Library Association Networking Professionals, Dr. Ranganathan Lecture Series, Fifth lecture, available at: http://www.dlaindia.org/srr7.htm , accessed 12 September, 2009.