New Opportunities for Information Services in a Transformative Digital Environment: The Shifting Information Landscape

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This presentation will discuss changes in user information seeking behaviors such as the trend from search to discovery, the need for information as part of their workflow, users and collaborations through social networks, the need for ethnographic studies of users and their information needs. The presentation will also focus on the need for new strategies by librarians such as embedded librarians on real and virtual research teams, increased needs for information literacy instruction, radical collaborations of librarians across institutional boundaries, from a service mentality to partnerships with users for grants, research projects, etc, librarians and changing nature scholarly communication (repository services, data curation, etc.), competition for libraries from other types of information providers.

How do you say reference?

Many definitions exist for reference and information services worldwide. Below are some paraphrased descriptions from librarians who took part in a project of the IFLA Reference and information Services Section. (http://cjhartigan.com/other/ifla/index.php)

- Reference is providing assistance to our users so they can access the most up-to-date documents (Brazil)
- Reference is the systematic process of leading library users to the information they’re looking for (Nigeria)
The library’s mission is to support the academic institution’s instructional, curricular, and research programs through organized, relevant, and fast delivery of information services; Contemporary users have high expectations from libraries today. (Philippines)

Reference services involve the information needs of our users and to satisfy them in the fastest, most efficient way possible with precise, up to date information (Venezuela)

The library’s main mission is teaching information literacy, giving information services, and helping with reading. (St. Maartens)

The 24/7 nature of the work is an exciting challenge as individuals expect a response immediately to their reference questions; it’s so rewarding to know that you helped users solve problems they were stressing about and struggling with. It’s wonderful to know you’ve helped them move forward. (Canada)

The mission of the library is to support the teaching, research and outreach programs of the University, through the provision of access to information resources in all formats (Trinidad & Tobago).

The mission of the library is to promote itself as the best place for learning, leisure, and information, and as the heart and mind of New Zealand. (New Zealand)

The library’s goal is to sustain and enhance the University’s excellence as an institution of higher learning and provide outstanding teaching and world-class research support, collections and services so as to produce well-rounded graduates with lifelong abilities to provide leadership; We agree that reference service is a kind of service which is based on the needs of readers. (China).

Unfortunately in some developing countries, reference and information services are uncommon. Although there is often free access to research information via global NGOs, and initiatives of United Nations Initiatives (Agora, Hinari, Oare), there are few trained librarians to assist researchers, educators, and students to use these resources to retrieve relevant information, interpret results, put that information in context in order to solve problems, and to communicate that information with fellow researchers and students. In many of these institutions and countries, librarians work in a vacuum and are unable to take advantage of library conferences, continuing education opportunities or to visit more advanced library operations in other countries.

According to the American Library Association, reference work includes transactions and other activities that involve the creation, management, and assessment of information or research resources, tools, and services. It includes the development and maintenance of research collections, guides, catalogs, databases, web sites, search engines, etc., that patrons can use independently, in-house or remotely, to satisfy their information needs. (http://www.ala.org/ala/mgrps/divs/rusa/resources/guidelines/definitions-reference.cfm)

So how well do all these definitions translate into the digital library? Anne Lipow, a pioneer in the transformation of reference used to say that librarians were one of the only professions that were tied to a building because of their name. The traditional role of the reference librarian at an information desk has always been that of “just in case.” This focus on the reference desk worked because in the print world, researchers and students needed to come into the library building. Still, reference has always been an indicator of “filter failure” and the difficulty of using library resources. But, in the digital library, reference librarians need to be “in your face.” With so much information available online and easily found through new discovery systems and web 2.0 capabilities, providing reference and information services is not longer enough. The digital environment provides new opportunities for librarians to transform their skills and training and work as partners with researchers, who more often than not access and use information resources remotely.
Emerging Roles for Users and Librarians

Public libraries have as part of their mission to provide services to users outside of the library through bookmobiles and other mobile libraries, services to senior centers, and even to prisons. Not surprisingly, public libraries were the leaders in the development of real-time virtual reference services.

In contrast, academic and other research libraries have traditionally expected users to come into the library for assistance with their information needs. According to a 2006 report, (http://www.ithaka.org/research/Ithaka.Surveys.2006.Overview.pdf), “In the future faculty expect to be less dependent on the library and increasingly dependent on electronic materials. By contrast librarians generally think their role will remain unchanged and their responsibilities will only grow in the future. Indeed, over four fifths of the librarians believe that the role of the library as the starting point or gateway for locating scholarly information will be very or extremely important in five years, a decided mismatch with faculty views.”

One successful method that has been used to focus on the role of librarians and users are ethnographic studies, a process used by anthropologists. In an early study at the Apple Computer company library, Bonnie Nardi, an anthropologist examined the roles of librarians with users and noted that a more apt name for librarians was information therapist, a term that expressed the role of librarians in helping users with their information needs. More recently, an ethnographic study of users at Rutgers University found that users do not want the library’s website to be static and just be a vehicle for information and content; instead they want it to be a tool that they can interact with. (http://www.libraries.rutgers.edu/rul/staff/groups/ethnography/reports.shtml)

Similar comments were made at last year’s meeting of the National Federation of Advanced Information Services. For researchers, the new standard is interactivity. Users want to be able to share information and network with colleagues. Information must solve a problem and be aggregated without having to search through numerous silos. Instead of searching for information, researchers want it as part of their workflow. Users want to be able interact with the information they discover on websites they visit and then collaborate with others via social networks and mobile devices. Successful businesses make decisions that are data-driven rather than article-driven; there is definitely a cost of not having the right information. With the growth of the Internet and social tools, a major shift is taking place; social tools such as Twitter allow users to aggregate the intelligence of others and make that information more discoverable. (Martin Kesselman, (2010) “2010 NFAIS Annual Conference: “Redefining the value of information: exploring the new equation””, Library Hi Tech News, Vol. 27 (3): 4 – 6).

Embedded Librarians

One important role of today’s academic or research librarian is to go where the users are and be embedded into their environment and into their workflows. Traditionally libraries have thought of themselves as service providers. Now, in the digital environment it is important for librarians to think of themselves as partners in the research process. Librarians should become embedded into their institution’s teaching and research initiatives. It is critical for librarians to get outside of the library whether it is having office hours in academic departments and, for students, have a presence in student centers or elsewhere on campus.

Information literacy is an important area that requires librarians and teaching faculty to work together as partners. For teaching faculty, it is essential that they provide contextual opportunities to incorporate information literacy into the curriculum. For librarians, it is essential, to work with teaching faculty to incorporate opportunities for interaction with students. Courseware such as Sakai and Blackboard provide opportunities for librarians to be a part of a course throughout the semester and to include research guides, links to important resources, discussion lists, and answer questions both via email and chat. Blogging is another way in which librarians can push information to students and is an integral component of many of these courseware packages. Additional ways in which librarians can be embedded into the
teaching process is through social networks such as Facebook, short videos using YouTube, and in virtual worlds such as Second Life.

Librarians can also be viewed as partners when embedded into research teams. This is not a new concept. For many years now, medical librarians are often part of clinical patient care teams and business librarians have been instrumental in providing competitive intelligence information. Librarians can play a unique role in interdisciplinary research by bridging various disciplinary vocabularies and perspectives.

At Rutgers University, librarians have been active participants in multidisciplinary grants that have involved a number of departments with a focus on teaching students the information skills they need in order to be future leaders and how they must be able to communicate with others from both the science and business sectors. In another grant, Rutgers librarians are involved in developing centers for excellence in engineering and agriculture at two universities in Liberia. In this case, librarians will be developing access to important resources on high capacity drives that can be delivered without the need for Internet access and to provide training in the use of engineering and agriculture resources to librarians and researchers at these institutions. The goal is to provide sustainability models that can be replicated in other developing countries.

Collaborations of Librarians

The digital environment provides opportunities for scientists to collaborate across disciplinary, institutional, and global boundaries. The challenge for librarians is that researchers are often unaware of the skills they possess and the services they can provide. As many of these collaborations go beyond a single institution, library/information support for these collaborations may need to go beyond a single institution as well. In order for libraries to provide research and information services to these diffuse user groups, they also must collaborate across these same boundaries. Several exciting initiatives are taking place in the United States and in one case, globally. Below is further information on 2CUL, an initiative between two institutions, VIVO that provides collaboration among several institutions, and AgNIC, a global knowledge discovery system for researchers in agriculture and related disciplines.

2CUL is an initiative of the Columbia University Libraries (CUL) and Cornell University (CUL) and was created to address both shrinking budgets and redundant library services, and more importantly to partner on new initiatives that meet the needs of changing user expectations, focus on unique collections and services, and that highlight the new roles of libraries within the academy such as institutional repositories, e-science and data curation. Both institutions think of 2CUL as a “radical” collaboration that will make each institution better able to obtain grants and additional revenue and increase partnership opportunities for librarians with researchers. (www.2cul.org)

VIVO was initially developed by Cornell University is an open source web-based product that provides information about researchers, their interests, activities, and accomplishments. The key goal of VIVO is to enable the discovery of research and scholarship across multiple disciplines. VIVO aggregates information from a variety of institutional directories and can also include external sources such as publication information and grants. VIVO has recently expanded to the University of Florida, Indiana University, the Ponce School of Medicine in Puerto Rico, the Scripps Research Institute, Washington University School of Medicine in St. Louis and the Weill Cornell Medical College to experiment with VIVO as a national-level networking of the science community. Librarians are active participants in VIVO and they coordinate management and subject expertise at each research institution. (www.vivoweb.org)

AgNIC, the Agriculture Network Information Center, is a voluntary alliance of libraries and institutions that are dedicated to “enhancing collective information and services among the members and their partners for all those seeking agricultural information over the Internet.” Currently the alliance includes more than 80 information and subject specialists As it’s mission, “AgNIC facilitates and participates in partnerships and cooperation among institutions and organizations world-wide that are committed to the
identification, delivery and preservation of reliable, freely-available, evaluated, digital content and quality services for agriculture, food, and natural resources information.” its strength in making unique quality content and resources available.” (www.agnic.org)

AgNIC has become a major aggregator in harvesting metadata related to agriculture full-text resources from institutional repositories, webinars, calendar of events, news services, Agricola references linked to WorldCat records, and Medline records related to animal health. AgNIC is also in the process of implementing VIVO, so that researchers and librarians at partner institutions can collaborate globally and across institutional boundaries.

**Concluding Remarks**

Libraries must go out to where users are who will increasingly be mobile and out on the Net utilizing their own social networks to discover, aggregate and share information beyond the walls of their institutions. If we are instead constrained by our buildings and not out there with them and innovating using our unique skills, we will likely continue to be an afterthought and become redundant. Below are some resources to keep up with new thinking related to the changing roles of libraries to meet the changing needs of users.

Kept Up Academic Librarian [http://keptup.typepad.com](http://keptup.typepad.com)
Library Success Wiki [http://www.libsuccess.org](http://www.libsuccess.org)
SLA. Innovation Lab [http://www.sla.org/innovate](http://www.sla.org/innovate)
Horizon Report [http://www.nmc.org](http://www.nmc.org)
Innovation Tools [http://www.innovationtools.com](http://www.innovationtools.com)
Embedded [http://embeddedlibrarian.wordpress.com](http://embeddedlibrarian.wordpress.com)