

Invited Speech

From Library Stacks to Library-in-a-Pocket: Will users be around?

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A SHORT STORY ABOUT LIBRARIES

Once upon a time, in the beginning of history, humans started to externalize their memory and knowledge on to clay tablets, papyrus, animal skin, bamboo, palm leaves, paper and other materials. These materials had to be housed and held for continuous use and thus libraries were constructed. As the volume of library materials grew, they were systematically organized to ensure that specific items could be retrieved for use effectively. Space (with tables and chairs) was also provided for people to consult the materials. Not satisfied with a static enterprise, the good people working in the libraries decided to offer value-add services to help people exploit the collections better and also to play their part in transmitting the accumulated knowledge of civilizations across space and time. In other words they transformed themselves from mere keepers of books to advocates and guides for learning and the pursuit of knowledge. Librarians considered themselves the mediators between civilization's knowledge and people, their users.

For a while, all was well. The only worry was how to find enough space to accommodate the increasing number of materials collected. One day, a technology appeared which started to turn everything to virtual bits and store them in clouds which anyone could access anytime and anywhere using desktops, laptops and even mobile phones. Egged on by this fantastic technology, librarians decided to virtualize parts of their collections and let them exist in the cloud as well, together with other information resources which sprouted out of nowhere and soon occupied many more times the library's virtual space.

Now that users could connect directly with the cloud without stepping into their libraries, librarians began to wonder whether users would desert them despite the good work they were doing and thus relegate them to the ruins of history. To prevent this disaster from happening, libraries started to spruce up their spaces and change their names to information or learning commons to attract users to continue their patronage. New services were implemented, libraries started to engage actively in cloud activities to be with their users, and existing services were stepped up to further enhance the value of the Library. Would these activities be sufficient to win back users? The story continues

USERS ARE KEY TO LIBRARY GOALS

Libraries have lofty goals such as the preservation and transmission of human knowledge to create better understanding of the world. Over time, libraries of all kinds have developed systems and services that aim to help their users to learn effectively and accumulate knowledge independently. On a more practical level, as service organizations, libraries aim for the maximum use of their resources, services and facilities by their users to justify the continued funding and support from their parent bodies, particularly in economically stringent times. Users, through their use and non-

use of libraries ultimately determine the fate of libraries. Without a high level of use, libraries will not be able to achieve their fundamental roles as leading cultural, social, and learning institutions in our society. Therefore libraries have to constantly engage their users to make sure that they continue to use and value library resources, services and facilities.

Libraries have been generally responsive to changes in their environment and are constantly analyzing and defining their roles and functions to meet new social and technological challenges. Most importantly, libraries are highly user-oriented and most of their work, whether in public, academic, school or special libraries, is built around the core idea of satisfying their users' needs to the fullest, often without direct monetary costs to the user.

In spite of all these sterling efforts, it will be increasingly difficult to maintain and improve the usage rate of libraries due to the revolutionary changes happening in the technological, information and learning environment. There is a clear shift in the relationship between users and libraries as the former become less dependent on the latter. Librarianship today demands much more thought and effort on connecting with users and maintaining their engagement (Choy, 2008). In a highly connected, crowded and choice abundant Internet Age, it is not sufficient to have just a valuable and useful service. Libraries must find ways to alert and drive users to the good things that are on offer.

Impact on library-user relationship

This paper discusses the key factors that are essential to lead users to use library resources, services and facilities. Key changes in the information and learning environment have gradually eroded the library as a premier institution in access to information and knowledge even though it remains a unique institution that dedicates itself to the improvement of peoples' lives through access to accumulated knowledge. Before we consider how to increase users' interaction with and use of library services, it would be useful to highlight the key changes in the environment and user behavior which lead to this consideration.

Key change in the information environment

One can enumerate the many significant changes that have taken place from the stacks-only library to the mobile-accessible library that impact on how we conduct our business and deliver our services. However it will suffice for the purpose of this paper to point to just one key change that has affected the relationship between libraries and their users.

That change is the drastic increase in choices and information available to users, largely without cost, through the Internet. Abundance of information of course did not appear overnight. Since time immemorial, people have complained about dealing with massive information growth in relation to their coping abilities. What has changed is the ease of accessibility in getting information as well as in the ways of getting information. The perception among most users is that information is no longer hard to get. It is everywhere and libraries are no longer seen as a dominant provider of information but just one of many in the marketplace.

Basic economics tells us that when things are scarce, their value and price will be high and when things are abundant, both price and value will go the other direction. Libraries, being largely providers of information are seeing the erosion in value of the main goods that they supply. Though documents, whether print or electronic not undifferentiated goods like commodities, the perception of the ease or difficulty of obtaining them has an impact on their value, and therefore their desirability. Librarians today generally have difficulty convincing people to use quality information from their collection rather than the first item they pick up from an Internet search.

Changes in user behavior

The abundant choices in access to information have also changed the way that users behave as information consumers and learners.

There have been recent studies that painted an alarming picture of the new generation lacking in the qualities that we librarians want of a typical user. We read these reports from our perspective as librarians and educators and we are rightfully alarmed because if only 1% of students start their information search from our catalogues, we as service providers are in deep trouble.

The new generation of users (i.e. users of information) don't suddenly become monsters who don't read, skip from one interest to another, cannot pay attention to more than one page of text and get excited by moving images more than text. Like all biological systems, users adapt to their environment. If books and libraries are everywhere and nothing mentally nourishing is available, people will take to reading books like ducks to water. The reality is that our environment is significantly shaped by technology and users will adapt to the good and bad of technology accordingly.

The abundance of choices has therefore flattened the profile of libraries in the information landscape. In the online world, libraries struggle to remain visible. As we continue to develop new capabilities and services to keep up with technological and environmental changes, we must also pay equal attention to increasing the use of libraries and their services among a vast array of competing options. The goal is to get users to use libraries and their services in preference to other similar tools such as the Internet when it comes to learning tasks.

WHAT WILL INFLUENCE FUTURE LIBRARY USE?

I would like to suggest 4 factors that are likely to influence how intensely and frequently libraries will be used. These are convenience, attention, awareness and perception. Use of library services refers to the use of all aspects of what libraries provide, including conducive learning space, access to information resources and services to help people in their learning and knowledge acquisition process. It is assumed that this trinity of usefulness remains largely the mission of libraries, at least in the near future.

CONVENIENCE

Usually the intrinsic value and usefulness of a service would determine whether it is to be used or not. However in an environment where there are many competing services and choices available online, the decision to use a service is likely to be determined by perceptions of convenience in using the service. Thus libraries services are likely to be chosen by users to satisfy their information needs if they find them convenient relative to other choices. Conversely, if there are any perceived obstacles or inconvenience in using a library (or its services), it is unlikely to be chosen over other more convenient sources.

What is convenience?

Convenience is often expressed in terms of the saving or optimal reallocation of time or reduction of effort in obtaining a service. There are other classes or dimensions of convenience identified by researchers in consumer behavior and marketing (see Farquhar and Rowley (2009) and Berry, Seider and Grewal (2002) for review and discussion) which taken singly or together lead to greater ease and comfort for the user. For example, accessibility is a type of convenience that relates to how the proximity and availability characteristics of a service add to its utility.

It is human nature to do things in the most convenient, easiest possible way. This was recognized 2,500 years ago by Lao Tze who advised in the ancient text "Tao Te Ching" that we take the path of least resistance. Closer to home in our profession, Ranganathan, roughly 8 decades ago exhorted us to save the time of users in his fourth law of Library Science. According to Zipf (1949) of the Zipf Law fame, in his Principle of Least Effort, "a person will always strive to solve his problems in such a way as to minimize the total work that he must expend in solving both his immediate problems and his probable future problems". Similarly most of us, whether in our role as librarians or as a user recognize that there is a strong tendency for us to use the easiest search method to find information.

Minimizing the cost of decision making in an environment of plenty

When choices are limited and there are only a few ways to obtain information or few sources of information, we will put up with the inconvenience of getting something that we want for otherwise we get nothing. The situation is different when we live in a world of many choices and options like today. Now we need to decide which amongst the numerous choices available we should make in satisfying our needs. Making a decision incurs a cost and taking the most convenient way is a common solution to minimize cost. For example, if a student is looking for images of indigenous houses in Sarawak, the first thing he would do is to perform an image search in Google, as it is the most convenient point of access. Even when he is told of other sources of information, e.g. searching the library catalog for books on Sarawak dwellings, searching the indexes of journals or online databases in the appropriate subject, or making a trip to the library to browse the slide/photograph collection, he will likely stick to the most convenient option of going to Google unless he is doing a thesis on the subject.

If one is interested in a particular document that is in a print volume of a Library but one has also found an article on a similar topic on the Internet, would one make the effort to go to the Library instead of downloading what is conveniently available but not exactly what is needed? Would one prefer to sit comfortably in front of a desktop and trawl through the depth of the Internet to locate a nugget of information or get out of bed and spend an equal amount of time in the Library which has greater number of quality resources? The answer to these questions is intuitively clear. Convenience is a highly attractive decision making option. Multiply these decisions many times over days, weeks and months, and the disparity in the use of Internet and library resources and services becomes very significant.

The deluge of choices available to users, not only in information seeking but also in other attractive activities, does not come with a corresponding increase in time available. Unfortunately, time is fixed for everyone in the Newtonian world and more choices means a greater demand on users' limited time. Therefore most users are likely to weigh the cost benefit of choosing an optimal course of action. If a choice is not convenient to use or is perceived to be inconvenient, it would not be pursued.

Convenience in an online world

In a world where information seeking and learning is increasingly being transacted in cyberspace, libraries and library services must be as convenient to use as Google or other competing services on the internet before it can even hope to start engaging the interest of users. Not only are millennium and generation X users reared on instant gratification, even older users have been conditioned by a fast paced world to expect optimal use of their time in obtaining and using services. The following discussion provides examples of building convenience into library services (library catalogue) and making access more convenient through technology (mobile devices).

Making catalogues more convenient for users

Library catalogues are inconvenient tools to use relative to Internet searches. Firstly, a user has to make an effort to decide what are the appropriate fields to search. Secondly, even after finding a perfect book that meet his needs, the user can only be satisfied with a call number. He or she then has to make a trip to the Library to obtain the actual information. Thirdly, library catalogues can no longer claim to be comprehensive one-stop retrieval tools. Users have to use different access tools to find books, journals, e-books, journal articles, audio files, videos, etc., due to multiple purchasing and subscription options. All these combine to make catalogues very inconvenient to use even though they are powerful and systematic devices for gathering information.

Contrast this with the one simple box in a Google search where you can mindlessly type in any keyword and retrieve decent results that can be viewed instantly. Library catalogue searches have high utility but low convenience whereas Google searches have high convenience with variable levels of utility, and often uncertain quality of content. The fact that Google searches enjoy significantly higher levels of usage than library catalogue searches indicates the power of convenience.

If we want users to click on a library catalogue page as often as the Google search box, libraries should offer search abilities that approximate closely that of Google searches. We used to think that the many fielded search options in library catalogs offer a superior search capability to that offered by Google. It turns out that Google's single search box is its trump card in this age of convenience. Recent developments in unified search indexes for libraries or web-scale discovery is a recognition of this fact. These systems try to provide one-stop access to all information types now provided by libraries such as their local print collection and external sources such as journal articles, database records, e-books, etc., through a consolidated index. Major systems now being offered or developed are WorldCat Local (OCLC), Primo Central (ExLibris), Summon (Serials Solutions) and EBSCO Discovery Service (EBSCO). Such systems when widely deployed by libraries will increase their usage convenience many times over and will likely lead to increases in their use.

Making access to libraries more convenient the mobile way

We are living in an Age of Convenience which is largely brought about by digitization and the Internet. By reducing all types of information - text, sound, pictures and moving images into bits that can travel instantly around the world on the Internet, we create a true web of connection that permeates every aspect of our lives. Desktops and laptops have so far been the predominant devices linking us to this ubiquitous Web. We are connected as long as we have access to them at home or in our office, and of course when we lug our laptops around. However access to the Web will reach a new height of ubiquity when everyone carries smart phones in their pocket or handbags.

The smart phone market worldwide is growing rapidly, not only in developed countries but also in developing countries. Business analysts from IDC Asia/Pacific (an IT research agency) predict that the use of smart phones will rise significantly in emerging economies. It expects that India and China will collectively chalk up over 295 million units in smart phone handset shipments in 2010. It noted that the key driver of smart phones in emerging markets is the increasing sophistication of mobile users (Business Times Singapore, 2009).

Users are also increasingly welded to their phones. According to the latest Pew Survey (2010), millennials (those between 18-29 years of age today) in U.S.A. are glued to their cell phone, with 83% placing their cell phone right next to their bed while sleeping compared to 68% for Gen X and 50% for baby boomers. 62% of them are connected to wireless Internet when away from home or work compared to 48% of Gen Xers and 35% of baby boomers. The percentage goes higher for those who are college educated. They are also well connected in cyber space, with 75% of them having a profile on a social networking site.

Smart phones such as iphones and Android phones are like mini laptop computers (though with much smaller screens). They are always connected to the internet, run third party software, have advanced multimedia features including touch and directional sensing, are location sensitive and highly portable. Smart phones will be the new extension to our body just like cars and modern transport have been and are now since their appearance. The convenience this brings to everybody's lives is far reaching.

Libraries need to be part of the new tools that users are using 24/7. If users are using mobile devices as the de-facto interface in their transactions with the electronic world, libraries must have a presence to take advantage of this heightened convenience that is in the hands of our users. Moreover mobile devices have great potential as learning devices. The high degree of portability and constant connectivity to the Internet opens up new possibilities in learning approaches. It enables a person to learn anytime, anywhere and in any duration of his or her choosing. In other words, mobile devices are effective and convenient tools for independent and life long learning. Libraries need to be prepared to cater to this new level of convenience. As the strength of libraries is in supporting self-directed and independent learning, libraries could play an increasingly important role in this mode of learning. Libraries could provide access to resources tailored to mobile devices and services to guide users in their self-directed learning effort.

A different kind of convenience

Libraries should constantly review the level of convenience they provide to their users. All services should run through a checklist of convenience criteria which measure the distance from a service access point to the fulfillment of the service in terms of time, effort, accessibility. The smaller the distance and the fewer the obstacles, the more the service will be used. In many ways, libraries as user-oriented organizations have always striven to make libraries more convenient for users. For example, cataloging reduces the user's effort in finding materials, classification makes it easier to browse related books, reference services help cut short the time taken in obtaining information, etc. However the Internet world demands a higher level of convenience, one that is highly time-sensitive as there is only a fixed amount of time in every person's life in a world of abundant choices.

ATTENTION

A convenient library service promises users a smooth and easy way towards satisfying their information needs. However it is getting to be more a hygiene factor, something necessary to satisfy users in the process of use. Convenience is not a sufficient condition in getting users to use library services in the first place. Library services have to compete for attention amongst other services and options. Only when it is noticed is there a chance that it will be used.

The need for getting attention is also the result of the abundance of choices available to users. Our brain is not wired to absorb large amounts of information equally at the same time, but rather to pick out a few salient pieces to focus on whilst ignoring the rest. When users are confronted with a multitude of choices while engaged in a learning or problem solving task, we want library services to stand out clearly as one of the prominent options. How can this be accomplished?

Ways of getting attention

Getting attention from users in a world of abundance of choices is difficult. We can either drive users to our websites, force them to focus their attention on the good things we offer or we can embed our resources and services in their own turf. As an example of the first approach, many academic libraries have developed subject guides to fine tune access to their resources to attract users with

specific subject needs. These are far more attention grabbing to users than the general library websites as they are more likely to match the information needs of users who are drawn to the sites by virtue of the subject profile advertised in subject guides. The only problem is getting users to go these subject guides.

The second approach is to try to place library resources and services in the space and environment in which users frequent and use. For example a simple library tab was created in the e-learning platform that all students and staff in NTU use everyday. We are also working with academic divisions to park links to specific library resources in their e-learning course sites to alert students to relevant library resources while they are engaged in their daily transactions. In an experimental academic course blog we set up for a Psychology course, usage statistics showed that out of 6 folders set up, the second highest hits recorded was for library e-resources (12%). The highest was naturally for course documents (78%) and the highest after the library was for course information (5%).

Since most users have their Internet browsers opened in front of them most of the time, it is important that libraries find ways to occupy a bit of this real estate to get the attention of users. A NTU Library toolbar was created which provides links to various library resources and services. Once a user installs the toolbar, it appears all the time in the browser whenever it is fired up. Thus when users are searching on the internet, there is a good chance that library resources will catch their attention, particular when they are aware of what these provide.

Attention in off-line mode

Attention creation methods are also applicable in offline situations and are old tricks of the trade in libraries. For example, a library book display is an attention grabbing device to highlight parts of the collection that users would otherwise not notice if they do not frequent the part of the stacks where these books normally reside. Other examples include oversize stickers or hanging streamers from book shelves highlighting selected books that the Library wants to draw users' attention to. Another form of attention conscious measures is to advertise instructional classes at the time before students embark on their project work. Students are likely to pay more attention to this than during orientation period where their attention is focused more on other social activities.

AWARENESS

Before we can grab the attention of users, they must first be aware of library resources and services available. It is not uncommon to hear users expressing surprise at the wealth of library resources and services after their first instructional class or worse still, when they are about to graduate. Users cannot know what libraries provide by just being present in a library or even visiting a library website. This is particularly true for electronic resources. A comprehensive strategy for the promotion and marketing of resources and services is essential to every academic library.

Word of Mouth marketing

Buczynski (2007) felt that the traditional marketing mindset of bringing users to the library (or website) will not work in a digital environment where most users expect direct access to resources. Rather, “the challenge for libraries is how to integrate their digital resources into the Web sites frequented by their users”. He suggested that word of mouth (WOM) marketing (or viral marketing) is a far more effective way to promote awareness. “WOM is a form of interpersonal communication among consumers concerning their personal experiences with a firm, service or a product” (Datta, Chowdhury and Chakraborty, quoted in Buczynski, 2007). The idea is to make use of conversations and chatter in social network media such as blogs, podcasts, Youtube, Facebook, Twitter, etc., to create awareness of library services. Quoting Datta again, “testimonials and endorsements by experts or peers can rapidly produce exponential increases in brand awareness both in terms of a message’s visibility and effect (p198, Buczynski). The trick is in identifying ways for libraries to get into these influential spaces.

Recognizing the importance of social networking tools in promotion of library services, our Library (Nanyang Technological University, NTU) recently took on the task on coordinating all blog development for the University. Working with the University’s Centre for IT Services and an external vendor, the Library will provide a large number of attractive templates for individual and groups of students, staff and others in the community. The Library will provide advice, suggestions and guidance to users in creating and maintaining their blogs and influence them in the use of library and information resources as and when it is appropriate.

Awareness is marketing and attention is sales

Awareness is different from attention. Attention is the act of focusing the mind on something in the environment whereas awareness is the conscious knowledge of the existence of something. Awareness comes before attention. For example, if a user is not aware that there are online databases of high resolution images of paintings provided by the Library, his attention will not be drawn to the access points to them even while he is looking for such images in his search. In business jargon, awareness is marketing and attention is sales.

PERCEPTION

So far, we have made the implicit assumption that people will actively seek information in solving problems or in pursuing their learning tasks. It is also assumed that people perceive that it is worth their while to use information systems whether it is the Internet or the library to get better results for the tasks they are doing. This may not be the case. For example, in traditional educational systems (still widespread today), it is possible to just rely on the recommended textbooks and notes from classes to pass examinations and sail through college. We cannot assume that everyone is interested in seeking information and finding value in doing so. Such non users may be heavy users of the Internet, but are likely to use it mainly for entertainment, communication and leisure purposes rather than for active information seeking for education. Therefore, a person’s perception of the usefulness of information seeking determines usage of information systems such as libraries.

Users' perceptions of the roles and functions of libraries and librarians also play an important role in their use of library services. If users do not feel that there is much value in using library services, they will not be inclined to use them even if the services are free, convenient and their attention has been captured. People incur costs when using library services, for example in time and effort spent as well as in opportunity cost. Their perception of the value of using libraries must therefore be much higher than the costs incurred when deciding on use of library services.

The perception of libraries as collection and space

The idea of a library as a collection of information resources (notably books) sticks strongly in the mind of many users. This is reflected in the use of the word "library" as being synonymous with "storage" in other fields such as computer science. This is also borne out in studies such as those done by OCLC. There is also a strong image of the library as a physical place which leads to the impression that useful library services are normally transacted at a physical location. Thus, despite the library profession's effort in expanding its reach in helping users in other aspects of knowledge acquisition and understanding, the persistent association of libraries with books and place limit the perception of users on other library services, particular those delivered online.

Given this strong association between libraries and its collection function, changes in the provision of information access (e.g. when there are more competing non-library resources available) will also change how users see the function of libraries. Thus if users feel that more information is now available outside of the Library, then the role of the library as a provider of information must necessarily diminish. Since the main role of libraries is in providing information, the conclusion they draw must be one of the declining importance and usefulness of libraries.

The 2006 ITHAKA study (2008), a large scale study of faculty attitudes towards the transition to an increasingly electronic environment, indicated that while users "value the library, they perceive themselves to be decreasingly dependent on the library for their research and teaching and they anticipate that dependence to continue to decline in the future". The study also asked respondents about their view of libraries as buyer, archive and gateway of information. It also found that users' perception of the importance of the role of the library as a gateway for locating information has fallen (particularly for scientists) since the last study in 2003.

However such perceptions focus on just the information provider role of libraries and ignore the larger roles that libraries play in independent and life long learning and supporting the pursuit of knowledge. Nevertheless user perceptions of the diminishing role libraries play will affect their decisions about using our services and resources. Needless to say, effort must be made to reverse such perceptions, especially among influential users such as academic staff who will pass on their attitudes and preference to their students.

CONCLUSION

In addition to its intrinsic value and usefulness, a library resource or service will only be used frequently if it is convenient to use, when the user's attention is captured at the point of need, when

the user is aware of them and when the user has favorable perception of resources and services provided by libraries. It is not sufficient to consider each of these factors singly as they are effective only when they are present together. For example, we may have a service that is very easy and convenient to use, but if users are not aware of it, they will not seek it out for use. Even if they are aware of it, it will also not be used if it does not come to the attention and notice of the user, who has many choices to choose from. Conversely we may have created a high level of awareness and attention on a new service, but if it is inconvenient to access or use, the service will not be used long. Likewise, even if we have convenience, awareness and attention covered, if users have the perception that services provided by a Library are not useful, they will not even attempt to use it. Thus, it would be useful for libraries to consider these 4 factors, particularly the first 3 (i.e. convenience, awareness and creation of attention) when reviewing and launching new resources and services. Creating favourable perceptions of the Library is an advocacy effort and cuts across all library work.

Libraries are dependent on users for their success. Our goal as librarians is to get users to think that their success in learning and the development of their knowledge is dependent on libraries too. This goal is getting increasingly difficult each day in the Internet economy that is characterized chiefly by an abundance of choices and alternatives. It is not good enough for us to build good systems, provide great resources and offer innovative services. The acid test for the success of all these initiatives is whether they will be used frequently. This paper is a reminder that the key factors that are likely to determine use of any system today are convenience, attention and perception of it's usefulness.

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