CHAPTER 2

REVIEW OF LITERATURE

Approach to the Literature Review

The main purpose of this literature review is to find out previous ideas about the impact of the Internet on library. In particular, it aims to find out what had been written about the changes which took place as a result of the information explosion, and those brought about by the World Wide Web.

The main sources consulted for this review were:-

a. Library and Information Science Abstracts (LISA);

b. CD-Net: Dissertation Abstracts and Proquest databases from 1995/1996 onwards;

c. Articles published in some journals dealing with librarianship and information sciences including: *Computers in Libraries, Library Management, Malaysian Journal of Library and Information Science, Library Journal, Educom Review, Managing Information, The Journal of Academic Librarianship, Serial Librarian, Reference Librarian and Electronic Library;*

d. Some Internet sites, using some indexible terms and phrases such as, Internet, changing library future, library environment, library professionals of the future, future library role, information explosion. These terms were applied to select literature in the last five years, due to the recency of the topic.

From the literature selected, it was found that the main ideas revolve around the fact that the library would continue to exist as a tool for navigating information and to serve its patron by providing information for different purposes. There were some divergent answers. While some people were advocating the library to exist with the emergence of the Internet, some others were looking at the library as having no value in the near future. (Rice, 1997).

Arguments for the Internet

While the electronic revolution continues to maintain its pace at the micro (library) and personal level, another equally powerful revolution is occurring at the mainframe and networking level. The Internet is a powerful new computer communication linkage that provides the academic community with swift new vehicles of communication (Higgins, 1996).

The role of academic library staff is to serve the needs of the academic community by providing a wide range of information and educational resources to support teaching and research. As new forms of information and technology become available, it is important that an academic library remains current, providing the most useful and effective resources possible. Technological advancements have created a variety of new training needs in areas such as automated systems, computer software and CD-ROMs. The Internet is one of the latest of such developments and has had a significant impact on academic libraries and training (Mathews, 1997).

The Internet offers scholars the ability to use information resources at a remote computer on an interactive basis, as well as the ability to transfer documents of considerable size from a remote to a local computer. One of the most popular resources used on the Internet are library Online Public Access Catalogues (OPACs). To some degree, the availability of OPACs throughout the world is providing an alternative to the expensive, commercially produced remote on-line, bibliographic databases systems (Adourian & Schweyer, 1997). That is to say libraries can produce their OPACs into the Internet for inter-library co-operation.

The applications of Information Technology (IT), including the increasing use of Internet and the virtual library concept, have changed users' perceptions and information-seeking behavior. They have had a number of impacts on both management and users. Positive government attitudes and the allocation of funds for technological development have enabled an increasing number of libraries to embark on all kinds of IT, all of which have enhanced information storage, retrieval, dissemination and resource sharing (Robson, 1996).

The use of new technology in libraries ranges from extensive use of CD-ROM networks, database development and production of CD-ROM products, integration of networked information sources into the library's offerings and creating the institution's presence on the World Wide Web, as well as incorporating other network information resource discovery tools into daily library work. These activities not only entail detailed knowledge of database structures and computer use in the field (computer literacy), but also often lead to librarians

becoming networking specialists within the home institution, information brokers and systems designers. These new roles often entail developing solutions to overcome platform incompatibilities between various operating systems, making the library Online Public Access Catalogue (OPAC) accessible via the Internet, and creating a World Wide Web (WWW) presence for the home institution on the Internet (Rusch-Feja, 1996)

The Internet provides an opportunity for librarians to do their jobs even better, as long as users are cognizant of creative potential and possible pitfalls. Davies (1996) added that the early 1990s, with the development of easy Macintosh (Mac) and Windows interfaces to the Internet, saw the Internet becoming available to a far wider audience. Students leaving universities demanded continued access and home computers began to provide communication capabilities as part of their add-ons. The Internet community at this stage underwent fast growth even though users were still primarily computer professionals and the university educated who had the knowledge and affinity with computers to handle the new technology. However, the 1990s saw Internet users becoming more mainstream, and the middle and professionals classes began to embrace the Internet as a tool for communication and entertainment. On the other hand Internet users encountered with some problems, such as difficulty to control information and time consumed when searching the Net. In this sense Gorman (1995) described the Net as a vast vandalized library where someone had destroyed the catalogue and removed the front matter and index from most books. In addition, thousands of unorganized fragments are added daily by a myriad of

crank, sages and persons with time on their hands who launch their unfiltered messages into cyberspace. Here comes the role of librarian to find a solution for this problem. They should evaluate and classify the vast a mount of information resources on the Internet.

The Internet shifted the responsibility of collection development from the professional librarians to the individual users. World Wide Web surfers must sift through all available resources and make decisions about which ones are useful, interesting, or appealing. This can be empowering; it can also be frustrating. Internet users, faced with sea of information where they once encountered only a pond, may be more likely to "satisfice"- to make do with information which is easily available- than to persist in a search for the best information. (Walter, 1997)

The use of the Internet and other network resources is changing the traditional library functions. While in the 1980s and early 1990s, the Internet was used mainly for communications, databases searching, and bibliographic access, today Internet's modalities are changing traditional function of library professionals such as the information transfer process and the perceived nature of information itself. The use of the Internet has changed or augmented all aspects of the information transfer process. The dissemination of information has become more fluid (Rheingold, 1993).

According to Rice (1997), the information professionals and librarians now interact with an information environment, particularly that represented through the Internet, which is complex, multidimensional, and dynamic. This environment offers the potential, on one hand, for new options for storage and retrieval of

information, and, on the other hand, for changes in the very nature of the scholarly information process. The introduction of the World Wide Web has further transformed publishing and information access and organization, and has influenced the role of the information professionals. Rice discusses the movement over time of the library from a private to a public social institution existing in part as a cultural legacy for society. The modern library, he continues, with its network-accessible collections seems to be moving back to the private space of an individual or of a small group. In the modern library, the information professional is the key to the process of sensemaking and value adding that enables users/clients to create their own information spaces.

Lapp (1996) stated that it is increasingly important for librarians to be informed about the information sources on the Internet, which might be useful to their clients. They should also develop ideas on how this information can be presented to their clients. This is especially important since scientists have understood for some time the importance of the Internet for their work. For librarians, electronic journals, discussion groups and newsletters may be the wild frontier of the information world, but librarians should be part of the cultivation process in this area. The reference team should collect and compile relevant Internet addresses.

The increased use of information technology has greatly influenced the evolution of academic libraries during the last three decades, and among the most important technologies is the introduction of the Internet in libraries. Rice quoted Joanne R. Euster who concluded that academic libraries are at the center of a

revolution. Phrases like "information economy," "knowledge industry," "virtual library," "national data superhighway," and "electronic journal" only hint at the magnitude of the changes in information and knowledge production, preservation and dissemination that are taking place even though the constituents' needs have changed and will continue to change (Rice, 1997).

The librarian may spend less time in the library building and more in the academic department and may spend his or her time working with the computing and telecommunications staff or communicating with distance learners electronically. The purpose remains the same; the means are even more powerful, and the possibilities far-reaching. (Rice, 1997).

Librarians possess an enormous range of skills, which lend credence beyond the traditional field of librarianship. With the overall decline in employment opportunities for librarians, it is time for them to reassess what role they can play in today's society. By examining the unique combination of skills the librarian acquires, both through on-the-job training and through a graduate educational program, one finds that librarians can play an essential role in working with evolving information technologies (Vaughn, 1996). In this sense, librarians can use their skills such as the ability to generate information of a good quality from electronic sources including the Internet, to serve their patrons and the whole community, and thus contributing to the development of the society as a whole.

The difficulty the Internet faces as a resource for the information professional lies in its size and the complexity of its culture. Nicholas and Fenton (1997) said that information is going to be far more accessible, far more available,

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and it is known that accessibility is a key determinant to whether something is used or not.

Cister (1996) stated that libraries are changing quickly, but he was not afraid of ever being out of a job. It is a librarian's job to make information easier to find, and to help people find information. There were some in the library community who were afraid of the Internet at one time. Some are still skeptical, because they have heard claims of "information at your fingertip" before from microfilm sales people, on-line catalogue vendors, and others. Most would like to learn more, but libraries in general are in the have-not category as far as things like money, time, and priority go.

For many, the first few experiences at using the Internet leave them feeling overwhelmed with their information options. They realize they do not have the time to surf the Web looking for the best information. Most likely, they will either settle for the first source they find, or they will decide that the Internet, although interesting, is not worth the time needed to become and stay proficient. Librarians can be those human filters that identify the most appropriate and valuable resources for corporate users (Bates, 1997).

In today's information age, many end users will attempt to retrieve needed information without the involvement of any intermediary. Most have little experiences with basic research techniques and, as a result, are neither searching efficiently nor effectively. There is a difference between searching the Internet and surfing the Internet. Surfing is very easy- just click on the links and read what appears. Browsers promise ease of use and "zero training" as one of the benefits of

using the Internet. Experienced researchers realize just how misleading this can be. Searching is a skill that is more difficult to master, you have to understand the search process, how to chose key words, Boolean searching, the different between search engines, etc. As part of their Internet strategy, many libraries are venturing into the new world of "training" (Bell, 1998).

Arguments for the Library

On the other hand, libraries traditionally have provided users with assistance in locating and obtaining the information resources they need. Reference librarians provide individual instruction to patrons in the use of specific information resources as they seek out help at reference desk. On a more formal basis, librarians also provide group instruction, known as "bibliographic instruction" to undergraduate and graduate students. Librarians also address classes with library-related assignments or offer classes in the use of specific information resources to voluntary participant (Stephens and Jackson, 1996).

Naturally, libraries as major resources of information, and valuing their unique role to reach so many users, want to be able to exploit new possibilities. However, if they are no longer going to rely on the paper industry, the alternative will be to use material in electronic formats of many kinds. All of them are vulnerable to threats, including unauthorized copying, redistribution, repackaging and even republishing under different labels, to meet the changing expectations of their customers (Cornish, 1996). By doing this librarians will be able to meet the challenge likely to be produced about by the introduction of the Internet.

A growing role of the library is helping students and others to use the new technology to access information. This is requiring libraries to supply more space for face-to-face consultation with information professionals (Clemmer and Smith, 1992). This more often necessitates the provision of a large well-equipped user instruction room (Bazillon, 1994). As the instruction mission of the library becomes more important, due in large part to introduction of technology, more square footage needs to be supplied for this function. Bazillion added that, it would be unwise to count on technology to save the library space, but that it would be wise to plan on it continually altering the mix of space requirements needed to conduct the functions of a modern academic library.

The library environment will continue to be influenced by technology and users' needs, and it will become a distributed virtual library governed by global policies that will ensure access to information for its diverse community of users (Wilkins, 1995). Wilkins saw the future role of the librarian as broadly based and focused on the utilization and evaluation of information, and as a client consultant. She continued to say that the librarian was seen as playing a larger role in the development of information services, as an information architect.

Libraries do play a fundamental role in the development and maintenance of society. They are not an anachronism in the brave new world of cyberspace but balance the demands of maintaining our cultural heritage, assist in the development of literacy, provide an adjunct to education and training, serve as community and recreation centers and are an attraction to tourists. With expanded access to information using digital technology, the demand for library services is

growing. Librarians cannot ignore the necessity of responding to community and business enthusiasm for more colorful, animated, interactive and timely information. Targeting the right information, developing information literacy and navigating the "superhighway" will all be done through libraries just as we continue to meet the more traditional demands for library services. There is a risk that present and future demands will create a greater chasm between the information rich and information poor of the local and global community (Walsh, 1997).

Libraries are moving to a future where they are the intermediaries between their clients and the array of meta-information available through the Internet. Libraries will, however, become users themselves, developing their own specialized approaches to information access (Allen and Lothar, 1997).

Allen and Lothar added that libraries will both push information to their existing and potential community and act as the facilitators for that community's own interactions. They also stated that libraries must embrace the idea that the Internet is its own collections, even as they maintain their own physical collections. The library role in a wired digital world is provide services which in effect foster and improve the Internet itself, generating communities, publishing information, providing access to the meta-informational tools needed to navigate the Internet.

To meet user needs in the world of digital information libraries must revise their policies and their way of working. The foundation of new library policies for electronic documents must be thought in an analysis of how electronic documents

differ from traditional ones, and analysis of the changing roles of libraries (Linguist, 1997).

Traditionally librarians have collected and conserved material and, more recently worked to make it more accessible and publicize what they have. However, changing patterns of information provision could mean that users go direct to sources of supply without consulting the library at all. In theory this could mean the end of libraries as we understand them today. It is most unlikely this will happen because, first, libraries are themselves major sources of information provision; and, second, users cannot have access to every sources of supply and need guidance on what is the best and most appropriate source for their need (Cornish, 1996).

According to Cornish (1996) the role of the library will change in relation to the Internet but not disappear. The role of the library will change from supplying information and documents to the users, to deciding what is relevant or most interesting, to supplying packages of information, much of which has already been evaluated to reduce, if not eliminate the "noise" factor. Cornish also believed that librarians will be renamed as knowledge scientist.

Most would agree that the primary function of a library would continue to be to provide organized, inexpensive access to information, no matter what its form. But technological innovation is likely to add a new need to "create on the network a knowledge-management system that enables scholars to navigate through the resources in standard, intuitive and consistent way (Larsen, 1991). This will require new expertise and equipment to accomplish.

With regard to the information itself, the trend has been for quite some time to seek resources both inside and outside the library to meet the users needs. Interlibrary loan networks have diversified and will most likely migrate to a common electronic medium, the Internet (Larsen, 1991). In addition, fee-based document delivery services are being more widely used for supply of externally held materials. However, internal collections will continue to grow, not just in the conventional book category, but also in non-book formats, which still require space and equipment to access their contents (Barney, 1996). Thus technology is adding to the demands of libraries to accommodate more print and non-print materials than before. In addition, it is adding the need for even more sophisticated telecommunication and computer systems to manage access to site and external resources (Reid, 1995).

Rice and others (1997) summarized the arguments by stating that "the function of librarian seemed to be evolving from the keeper of books to that of network navigator."

From the above it is obvious that there are arguments for the continuation of the library as well as for its change as a result of the Internet. The following chapter describes the study to examine how one group of users, i.e. postgraduate students, see the impact of the Internet on the library.