*Full Length Research Paper*

# Changing functions of libraries and publishers in the digital information sources environment

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The emergence of electronic information sources with rapid development in information technology played a major role in changing the function of libraries, publishers and information producers. Functions like indexing and abstracting were library functions but now it is entrusted to information aggregators and publishers. This study aimed to: First, define the role and function of libraries and information aggregators before and after the use of information technology in libraries and publishing establishments. Second, identify the factors that led to the change of the functions and roles of libraries, resulting from the evolution of information technology. Third, determine the future of library functions and publishing establishments and their requirements. Descriptive methodology was used in this study to describe and determine library functions before and after the widespread use of information technology. The main tool for gathering information about the future role of libraries and publishers in the digital environment was a questionnaire submitted for discussion by the librarian sub-group at linked-in. This study highlighted the future roles and functions of libraries and publishers that will enable librarians to properly plan for the future of their libraries in the continuing evolution of information technology and communications. The study has concluded that there is a continuous change in library and publishers' functions and this change is reflected on the method of providing library services.

**Key words:** Library functions, publishers, digital resources, electronic information, information technology, library future.

## INTRODUCTION

The development of information technology greatly affected on information sources development and contributed in creating a new form of information sources. The emergence of the digital information sources as a result of using digital technology by libraries, publishers and digital information producers played a great role in changing libraries and information producer functions. For example, indexing and abstracting information sources were libraries' functions, but now venders and aggregators are involved with this function. Libraries also used to manage their own collections. However, in recent times a part of these collections, specifically digital

periodicals are managed by publishers. Furthermore, purchasing was the most reliable way of acquiring, but now subscription is an important method for acquisition of books and online journals.

The growing effect of information technology in the ever changing role and function of libraries and publishers is significant to be studied. It is an important requirement in today's high technology and digital world, to make libraries up-to-date with the continuing developments. To add to the value of identifying and documenting of the effects, studying these changes will enable libraries to forecast their roles and functions.

Using information technology and telecommunications in the different information sectors generate a new type of individuals and establishments dealing with the information, such as vendors and database aggregators.

Also, this study will focus on libraries and publishers' future in the digital environment which will help libraries in planning their future operations.

**Goals of the study**

This study aims at:

1. Determining the role and functions of libraries and publishers before and after using the information technology.
2. Exploring the future of libraries and publishers.
3. Determining the future role and function of libraries, publishers and information sources.

This paper aims to answer the following question: "What are the results of using the information technology in both libraries and publishing establishments?"

**LITERATURE REVIEW**

In Natarajan (2009) study which aimed to identify the changing roles of libraries and publishers in the digital environment he states that there is a problem in assessing the future of libraries, because libraries do not recognize the publisher's strategic plans for the future. "In the network world there is no need for resources to be stored in a large number of locations (e.g. libraries); a single source is theory sufficient and cost- effective. It is therefore not unlikely that in the future publishers will not continue to distribute journal through libraries, but rather make them available through their own network servers or digital repositories. The library will continue to provide its users access to these materials based on licenses agreements, but will no longer be allowed to store the materials in the library ".

In Horava (2008)'s study, the aim was to explore the roles of publishers and librarians and venders in high technology age, which makes transformation and inter-

section in there functions. He concluded that publishers have recognized the need for change so that they can be as active player in scholarly information market place. Horava thinks that the next step will be the creations of new formats through utilizing digital technologies. This new format will allow scholars to work in deeply integrated electronic research and publishing environments that will enable real-time dissemination, collaboration, dynamically-updated content and usage of new media. And of new media the roles of librarians and publisher are no longer distinct and mutually exclusive.

In Almaliki (2003)'s study which aims to determine the stages of turning libraries into the digital library he said that the dramatic changes brought by the communications revolution of modern and sophisticated networks, including the Internet has made libraries transformed into a digital library, and it has presence on the world wide web allowing access to the limitless amount of information. He shares the opinion of Kinneth E. Dowlin that libraries will be smart buildings that contain units to broadcast audios and videos capable of delivering library services to homes. Hishmat (1996), in his study which aims to review and analyze articles that discuss the future of libraries in 21 century, also shares Kinneth E. Dowlin's opinion and both wonder if libraries will stay until 2020. In Hishmat's study, David Raitt thinks that libraries in the future will continue to use electronic technology until they get to different levels of Interconnectedness through computers called Infoport.

Through reviewing the previous studies, this study will complete them in identifying the roles and functions of libraries and publishers before and after the implementation of information technology, and at the same time considered the opinions of a sample of librarians subgroups from all over the world.

**Libraries' and publishers' functions before using information technology**

The development of library functions is related to several key factors, political, economic and industrial. The expansion of conquests of Alexander the Great led to expand the Greek culture and increased the number of learners. In that period the knowledge branches started as independent scientific fields. The establishment of the Alexandria library in the time of Ptolemy 1 was a great event in libraries' history.

After the defeat of the Greek empire by the Romans, the first public library was established in Rome by Asinins Pollioin at the beginning of the 4th century A.D. Public libraries began its establishment in the big attics and there was a great passion to buy books by the Romans (Alfred and Reuben, 1950).

All that led to establishing the private libraries inside homes. In the middle Ages, with the advent of Christianity, church libraries emerged and increased in

number after the Romans turned into Christianity. Since the ninth century and until the twelfth century, monastery and church libraries were the most prevalent in Europe (Alfred and Reuben, 1950).

The main functions of the libraries at that time were gathering, organizing, translating and copying books and manuscripts. Libraries at that time played the role of universities. They were places for students and researchers to gather and conduct their studies. Furthermore, most of scientists were lecturing and conducting research in these libraries.

That means that those libraries were playing the following roles:

1- Educational role: as schools and universities.
2- Cultural role: gathering, organizing, and copying information sources and also as publishing establishments.
3-Social role: functioning as cultural centers.
4- Spiritual role: places to revive the spirit as described by the ancient Egyptians (Elean, 2007).

At the beginning of the 19th century and the emergence of publishers, publishing establishments embarked on copying and marketing the information resources, instead of libraries which were involved in this operation; that means a change in library functions.

With the emergence of schools and universities, the educational and cultural roles of libraries were greatly reduced and substituted step by step by schools and universities; thus, the educational role of libraries became a minor role.

Through that time, the roles of libraries evolved and transformed to become the conservation and organization of the national heritage by the national libraries. Another role was collecting educational information sources and organizing them. This role was taken by schools and academic libraries. Besides, providing information sources and analyzing them for specific users was done by special libraries.

So, at this stage through the roles we can specify library functions in general as:

1- Collecting information sources in different types.
2- Organizing information sources: Cataloging, classifying and indexing.
3-Facilitating the use of information sources through external and internal circulation and photocopying.

Regarding the publishing establishments, their roles were:

1. Producing information sources.
2. Marketing information sources.

Manfred (1981) said, "Libraries and publishers have evolved together. Publishers rely on libraries as markets for their products".

Since the 1960s, different modes of cooperation developed between libraries and publishers. The major efforts have been made, both in publishing and librarianship, in standardization for the purpose of rationalizing the workflow in publishing houses, libraries and in the book trade. They had one aim in common, which is to facilitate the access to publications regardless of the means and the place of publication (Daniela, 2008).

Publishers' functions were limited by their roles, so functions like indexing and abstracting were not related to publishing operations. But such functions became a part of the publishing operations after the emergence of the periodicals as one of the most important information sources.

Indexing and abstracting functions were developed rapidly as a part of the publishing process through the development of information technology.

## Libraries' and publishers' functions after using information technology

The development of information and communication technology and the emergence of the internet changed the functions activated in libraries and publishing establishments as follows:

Libraries computerize most of their functions and activities like cataloging, classification, acquisition, circulation, information sources hybridization and periodical indexing.

Publishing establishments moved from the traditional to the electronic publishing. With that, publishers became involved in a new function related to electronic periodicals. This function is abstracting and indexing. Also publishers changed the marketing of information sources, especially that related to periodicals; it moved from acquisition to subscription. Thus causing changing strategy functions of libraries and becoming an intermediate between publishers and users. Therefore, libraries' functions were no longer storing periodicals in a traditional way, but such function was done by publishers. Now, libraries' role is limited to paying electronic periodical subscription fees for publishers to access their periodicals in the library rather than obtaining a hard copy for storage at the library. This situation led to the emergence of new establishments working as medium between library and information sources; these are the aggregators and vendors. The aggregators work on hybridizing, which means making electronic copies of the sources, and then submitting, indexing, abstracting, and classifying operations ending with digital storages.

Through that structure we can realize that roles of libraries have changed and that reflected on function, so that libraries do not store information sources, but provide access to them. That means libraries do not store, organize, index or classify information sources, because these functions moved to aggregators or vendors.

The current role of libraries is the coordination between users and database producers through aggregators or

vendors, thus gathering databases in one website or portal and providing advanced search services.

"Libraries and publishers have evolved together. Publishers rely on libraries as a minimum market for their scholarly products. A simple mathematical model for the dynamics of the interaction between libraries and publishers is analyzed. It derives a function for the supply curve of scholarly publications, and is used to estimate when an institution will have to spend as much per person on library support as on his or her salary if present trends continue. This is used to argue that present trends are unlikely to continue, but that a discontinuous shift in the production of scholarly output is likely to occur within a decade or two. Likely new forms of communication among scholars in "communicating classes" involving nearly simultaneous communication and a new kind of organized cumulative record are discussed. The implications for institutional changes not only in libraries and publishers and their interrelation but of new kinds of institutions are sketched" (Manfred, 1981).

## The future of libraries and publisher's functions after using information technology

With continuing development of information and communication technology and the increasing reliance on digital technology in information storage at retrieval, traditional library in its classic concept will decline and technology will keep on carrying the roles and functions of libraries.

According to a Broward County (FL.) library employee, ''the future of library holding physical books seems gloomy''. Commenting on a post about bookless libraries, he points at the main reasons virtual libraries will increasingly replace print books libraries.

The relation between user and information producers will be a direct relation without intermediate. At the present, publishing establishment can be considered as libraries. Libraries will become museums containing copies of traditional books and manuscripts especially public libraries and academic libraries will melt between.

"The library building isn't a warehouse for books," said Helene Blowers, digital strategy director at the Columbus [Ohio] Metropolitan Library. "It's a community gathering center" (John, 2012).

Futurist Thomas Frey (2012) thinks that "Libraries, much like any living breathing organism, will have to adapt to the complex nature of the ever-changing world of information. As information becomes more sophisticated and complex, so will libraries".

Libraries are here to stay because they have a survival instinct. They have created a mutually dependent relationship with the communities they serve, and most importantly, they know how to adapt to the changing world around them.

Others stated in the subgroup of the American Library Association at (http://www.linkedin.com/) when asked what they think about the future of libraries, Meredith (Greater Seattle Area, System Federal) thinks that libraries are becoming museums for books and that the future of libraries needs to be thoroughly considered, especially when people stop visiting them. With the sophistication of newer technology in the libraries, and everyone owning their Nook or Kindle, libraries will become the new Coffee Shop with lounge chairs and small meeting rooms in a shopping area.

Dagne Woldie (IT Professionals at Ethiopian Civil Services College, International, Banglore University) asked whether we need libraries for the future. Currently, Woldie is working in the International School and talks about students and teachers visiting the library mostly when the internet is down. On the other side, the government and private schools do not even have books for kids and teachers.

Samantha Specht (Technology and Community Outreach Assistant at Public Library for Union County New said "Libraries have always supported lifelong learners. Even in today's new technology age that is still true. I see libraries as changing function to be a place where people can use, learn, and experience new technology in a safe unbiased space. In my position right now I teach older generations how to use new technology to keep up with the changing world. As e-books and other technologies continue to grow I expect to see more libraries offering similar classes. The focus may leave learning in a print format, but libraries will always support learning".

Akurut Juliet (Librarian at Pentecostal theological college in Uganda) said "the future of the publishers will still go on because there are people who prefer books to e-books but anywhere as librarian we should change the trend and function so as to cope up with the new technology, currently train my users how access free e-books on internet".

## METHODOLOGY

This study used the descriptive methodology, and the main tools for gathering information were:

1. books and periodical articles used to determine library functions before the widespread use of information technology .
2. Literature review used to 1. determine library functions before the widespread use of information technology, and the changes which took place in the roles for both libraries and publishing establishments. 2. determine the recent situation and the future for libraries, publisher and information sources

The researchers put the following question for discussion by the librarian sub-group at linked-in.: "What is your opinion about the future role of libraries and publishers in the digital environment?". The researchers analyzed librarian answers and then compared with the reviewed literature to anticipate the future.

## STUDY RESULTS

The main functions of the libraries before using

information technology in the old period were gathering, organizing, translating and copying of books and manuscripts. Libraries at that time played educational, cultural and social roles.

In the 19th century, the main functions of the libraries were to collect, organize and facilitate information resources. Regarding the publishers, their roles were to produce and market information sources.

With the development of information and communication technology and the emergence of the internet, library and publisher were changed. This caused changing strategic functions of libraries and became an intermediate between publishers and users.

Now, libraries' role is limited to paying electronic periodical subscription fees for publishers to access their periodicals in the library rather than obtaining a hard copy for storage at the library. This situation led to the emergence of new establishments working as medium between library and information sources like aggregators and vendors. The aggregators work on hybridizing, which means making electronic copies of the traditional sources, and then submitting, indexing, abstracting, and classifying operations ending with digital storages.

Through that structure we realize that the current role of libraries is the coordination between users and database producers through aggregators or vendors.

Libraries and publishers have evolved together and publishers rely on libraries as a market for their scholarly products.

In the future, libraries will function with continuing development of information and communication technology, and technology will keep on carrying the roles and functions of libraries.

Virtual libraries will increasingly replace printed books libraries. The relation between user and information producers will be a direct relation without intermediate. At the present, publishing establishment can be considered as libraries. Libraries will become museums containing copies of traditional books and manuscripts especially public libraries, and academic libraries will melt between. The future of libraries needs to be considered, especially when people stop visiting them. Public libraries will become the new coffee shop with lounge chairs and small meeting rooms in a shopping area.

The future of publishers will still go on because there are people who prefer printed books to e-books, but libraries should change the function so as to cope with the new technology.

## Conclusion

There is a continuous change in libraries and publisher's role and functions and also in providing information services, as a result of the successive developments in communication and information technology. Information sources which depend on information technology coerce library to follow a new approach in information sources acquisition, management and provision of their services. Libraries will have to adapt the complex nature of the ever-changing world of information. As information becomes more sophisticated and complex, so will libraries. Libraries are here to stay because they know how to adapt to the changing world around them.

## Conflict of Interests

The author has not declared any conflict of interests.

## REFERENCES

Alfred H, Reuben P (1950). A history of libraries scarecrow press. Translated by Shaban Khalefa. p.15-18 [1] Ibid .p21-31.

Almaliki MM (2003). Electronic library in new enviroment technology. J. King Fahid National library. 8(2):5-6. Retrieved from http://faculty.ksu.edu.sa/m_salem98/Other/

Daniela Ž (2008). Publishers and Libraries in the Information Society - Allies or Rivals? Information-Documentation Management and Cooperation among the Libraries in the Balkan Countries Symposium Papers, 5-7 June 2008, Edirne, Turkey / Bilar, E., Ekinci, Y., eds. (ed). - Edirne : Trakya Universitesi , 2008. 289-299 (ISBN: 978-975-374-090-6).

Elean RM (2007). Libraries and information and scientific research .Irbid. pp.3-33.

Hishmat Q (1996). Library and future :articals about libraries in 21th century . J. Libr. Inform. Arabic Stud. 1(1):205-216

Horava T (2008). "Libraries as publeshears; Publishers as Libraries- Where do we go from here?" Against the Grain .Sep 2008 Retrieved on January 10, 2013 from www.ageanst-thegrain.com

John DS (2012). "The future of libraries, with or without books" library gyan Tuesday, 17 April 2012 Retrieved fromhttp://edition.cnn.com/2009/TECH/09/04/future.library.technology/index.html

Manfred K (1981). "Interaction of libraries and publishers Original Research Article". Inform. Proc. Manage. 17(5):291-299

Natarajan MSK (2009). "Roles of libraries and Publishers in Knowledge Access and Management". ICAL 2009 – VISION AND ROLES OF THE FUTURE ACADEMIC LIBRARIES. Retrieved on January 10, 2013 fromhttp://crl.du.ac.in/ical09/papers/index_files/ical-26_232_497_2_RV.pdf

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