Scholarly Communications at Two Academic Atmospheres: Technology-Based Society and Paper-Based Society / By Dr. Hossam Eldin Mohamed Refaat, Department of Library and Information Sciences, Faculty of Arts, Helwan University, Cairo, Egypt, 2005. Email: hossam_usa@yahoo.com

Introduction

Scholarly communication is a multi-relationship topic that is interconnected to various fields and disciplines. Efforts of faculty members, librarians, publishers, information specialists, information technologists and archivists have to be combined together in order to establish and create scholarly communication in any society. In addition of being a multi-relation topic, scholarly communication can be considered an important criterion in assessing and evaluating higher education systems in different countries. Excellent higher education systems have excellent scholarly communications systems, and fair or moderate higher education systems have moderate or fair scholarly communication systems and so on. Therefore, one can assume that there is a positive and a strong relationship between the level of scholarly communication in a certain country and the type of that country, where advanced countries have advanced scholarly communication systems, and poor or developing countries have poor or weak scholarly communication systems.

The purpose of this paper is to compare and contrast higher education systems in technology-based societies and paper-based societies.

Definition

Researchers and thinkers have defined scholarly communication from different perspectives. Some of the definitions that were found are:

1-"Scholarly Communication refers to the formal and informal processes by which the research and scholarship of academics, researchers, and independent scholars are created, evaluated, edited, formatted, distributed, organized, made accessible, archived, used and transformed".[1]

2-"Scholarly communication may be defined as the process whereby the results to scholarship and research are made available to others through publication and preservation. The system which supports this process now includes: scholars, publishers, librarians, learned societies, universities, and the legal framework which defines ownership, fair use, contracts, licensing, etc".[2]

---

[1] C. Bailey, "Alternatives to Scholarly Communication", Available at http://www.alpsp.org/bail20402.ppt

[2] Discussion of What is a Scholarly Communication Interaction, Available at: http://www.library.arizona.edu/library/teams/scholarlycomm/ScholCommunicatiomnteraction.html

Main Steps of Scholarly Communication

The main steps of scholarly communication can be summarized as follows.

1-Creating research, 2-Evaluating research, 3-Editing research, 4-Formatting research, 5-Distributing research, 6-Organizing research, 7-Making the research accessible, 8-Archiving research, 9-Using and transforming research.

1-Creating research

Creating research is the first and most important step to establish a scholarly communication system in any higher education environment. To create a high quality research in a specific institution, certain resources have to be available. These resources include researchers, funds, equipments, facilities, and library services. The quality of research depends on the quality of these resources. If the higher education system lacks some of theses resources or lacks the proper quality needed, research is going to be much affected.

Researchers should be knowledgeable, highly educated, and well skilled to be able to perform research and reach significant results. The amount of fund should be enough to cover the various costs through out the whole process. Equipments should be running and in a good condition. Facilities should ease and save the researchers time and effort in performing their tasks. Library services have to provide researchers high quality services that are not restricted to traditional services but also include nontraditional services such as Current Awareness and Selective Dissemination of Information services to enable them be up-to-date with new trends in their area of specializations.

The first element, researchers, is available in both higher education systems, technology-based societies and paper-based societies. However, the other elements are more advanced in the technology-based societies than paper-based societies, in that their equipments are upgraded on a frequent basis, their fund is high, and their library services are unique. The reason behind this can be the amount of fund available in the second system, which is much less than the first one.

2-Evaluating research

The second process in scholarly communication is evaluating research, in that the research created has to be assessed and evaluated by experts and scholars. These scholars are usually faculty members working at academic institutions. They can also be members at certain associations as the case in the higher education systems in the United States where many associations are concerned with evaluating not only the

research created but also the institutions offering various programs such as universities, schools, and colleges. A good example of this is the American Library Association, ALA, which is concerned with all issues related to Library and Information Science discipline in the United States as ranks of Library and Information Sciences schools and the challenges that face the field.

The second element is also available in both systems; however, scholars in the technology-based societies are having better communication with each other and they are usually members of organizations and associations. Existence of these types of associations may help in creating good competitions among different schools in all fields, where schools may compete with each other to get higher ranks and have better reputations.

3-Editing research

The third process is editing research. This process is made after evaluating and assessing the research created earlier. The final output of editing research is preparing the research for publishing in specialized periodicals and scientific journals. However, not all research is published, in that only research that concluded good and significant results are accepted and allowed to be published.

This process is also available in both education systems, technology-based societies and paper-based societies. However, the total number of specialized periodicals and scientific journals in different fields at the technology-based societies is much higher and more up-to-date than that at paper-based societies. Moreover, research is published in various formats at the technology-based societies, traditional and nontraditional, but it is published only in traditional formats in most fields at paper-based societies. The reason behind this can also be the fund available to support this purpose in both systems, or it may be because the technology-based society is a technology oriented society where dependence on information technologies is very popular.

4-Formatting research

Formatting research is the fourth point in the process of scholarly communication. It includes storing, recording and publishing the research results in various information media, traditional and nontraditional. Publishing research in nontraditional formats may help in saving space, maintaining and protecting the original copies, and facilitating the retrieval process for researchers and users. Traditional formats include all paper formats such as books, periodicals, journals,

reports, original copies; however, nontraditional formats include microforms, microfilms and microfiche, compact dicks, magnetic tapes, electronic journals, online database, and information banks.

The technology-based society has reached an advanced level in storing and publishing not only its own research in various formats, but also in having access to international databases and information banks. The reason behind this is that the advanced systems depend on new information technologies in performing their tasks and achieving their goals. However, paper-based society in almost all cases depends on the original copies because of its limited resources and funds.

5-Distributing research

Distributing research is the process in which research is made available to researchers at different institutions in various locations. The process of distribution primarily depends on the previous step, the format. At the time the research is stored or recorded in traditional formats, the distribution process will be different from which if it is stored or recorded in nontraditional formats. Traditional formats research will need to be sent to various locations by mail. However, nontraditional formats will depend on various information technologies and advanced telecommunication in distribution. The format also affects the accessibility, in that traditional format materials will be distributed only to a few researchers that their library collected and purchased such works. However, electronic formats, although expensive and require subscription, allow different users at different location to access research.

The technology-based society is more advanced than paper-based society in distributing research because it primarily depends on various information technologies and advanced telecommunication in distributing and delivering research. Moreover, it is subscribing in various international databases and information banks in almost all fields and disciplines. Therefore, researchers at the first society are having better accesses not only to what is available at the local environment, but also to what are available worldwide as well.

6-Organizing research

Organizing research is the process in which research is prepared to be accessible. The organization process is an important step because if the research is not properly organized, it may difficult to be retrieved, or it may not be retrieved at all. This process is made by librarians and information specialists working in academic libraries and specialized information centers. This process includes various sub

process as cataloging, classifying, arranging, indexing, and abstracting research. The organization process depends on various tools. These tools include classification schemes, cataloging rules, subject heading lists, etc. It also depends on the format of the material itself, in that cataloging or organizing an article in the paper format will be different from cataloging the same article in the electronic format.

The technology-based society contains both types of information sources, traditional and nontraditional, so it organizes its traditional format materials and it has access to nontraditional format sources or electronic sources, stored in databases and information banks. However, paper-based society contains only traditional formats materials, and there is no access to international databases or information banks available within its local libraries.

7-Making the research accessible

Making the research accessible means providing researchers and scholars the opportunity to use and get the benefits from the research results. This can be done by publishing the research results in specialized periodicals and scientific journals or through storing them in electronic journals, online databases and information banks. Publishing research in traditional journals and periodical may restrict the use to only users that their libraries have these periodicals or journals, as mentioned earlier, while publishing research in electronic formats will give users at different locations the opportunity to have wide access to information.

The technology-based society has both types mentioned; however, the paper-based society has only the first one. This allows the first society to provide unique and high quality services to its patrons where researchers are not isolated from the outside world, and are having better access to research whether within the local library or outside.

8-Archiving research

The main purpose of archiving research is to keep it for future generations. Archiving research is usually made by storing it in storage areas. It can also be done by storing it on microforms or CDs. This process helps in addition to keeping the research for future generation, in saving space and preserving original documents.

Both societies have the facilities to archive their research or keep their own materials for future generations. The main reason behind this is that both societies have limited space to store their own materials. Therefore, they have been looking for different ways to store their own collection.

9-Using and transforming research

Using and transforming research are the last steps in the process of scholarly communication. They are the final goals of the whole process, in that if the research is not implemented or utilized and transformed, it will be a useless effort and the whole scholarly communication process will be affected.

Research and publication in paper-based society are collected and organized in academic libraries within the university campus to be accessed by researchers. However, and in many cases scholars and researchers publish their research results in specialized periodicals and journals. This gives the opportunity to other researchers outside the university to know what has been searched and what has been found. On the other hand the research made at the technology-based society is published in both types of information sources, traditional and nontraditional, such as traditional scientific periodicals and journals, electronic journals, online databases, etc. This gives the opportunity to both researchers at the technology-based society and the outside world to use and to have access to research.

Conclusion

After this brief discussion and analysis to the main steps in scholarly communication process at two environments, it may be concluded that the electronic environment is much better than the traditional one, in terms of providing easier and faster access to research results. However, one also has to consider the challenges the electronic environment faces at the age of the Internet and World Wide Web. These challenges have come out as a result of depending on electronic sources at the new environment, in that one can notice the following:

1-Copyright laws, intellectual property, intellectual freedom, ethical issues, plagiarisms, etc are the main issues that have been obviously affected.

Nicholas Negroponte offers the following view: ***Copyright law is totally out of date. It is a Gutenberg artifact. Since it is a reactive process, it will probably have to break down completely before it is corrected."***[3]

Another one indicate that ***"The movement toward electronic resources is so great that it is no longer possible to protect authors' rights adequately, so perhaps we should not even try."***[4]

2-The high cost of establishing electronic environment that needs frequent updates and upgrades is an essential challenge that cannot be avoided.

3-Training librarians and training researchers on using information technologies is another challenge.

To conclude, many challenges are threatening the electronic environment, in a way that puts and adds more burdens over information specialists and information technologists, in that information professional has to take the proper cautious and get the required preparation in the new environment to protect various rights and maintain fair use to ensure successful services.