ENHANCING KNOWLEDGE SHARING CAPABILITIES THROUGH ONLINE COMMUNICATION IN MALAYSIA HIGHER LEARNING INSTITUTIONS

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Abstract: *Progress in knowledge sharing has offered today's information seekers' different opportunities to access the information resources in variety of formats, including commonly-available electronic information resources, such as CD-ROMs, databases, Web-OPACs, and the Internet. In some instances these resources are replacing the print-based information resources as the primary media for the storage and communication of recorded information. This research attempts to explore the usage of electronic recourses and knowledge sharing practices in Malaysian Higher Learning Institutions as well as to propose a new approach in using e-literature system. Knowledge sharing may not be seen as essential key to the success of an organization, but contrary they are significant when a failure or mismanagement occurs. Malaysian Higher Learning Institutions is bound to stringent regulations, particularly at international level. Therefore, in order to enhance the international map it is vital for Higher Learning Institutions in Malaysia to be certain about their information and knowledge and research resources available. Knowledge sharing capabilities through online communication is a highly complex task involving the interaction among users, their information needs, and the information resources. The heterogeneous environment in which users confront in academic libraries today has increased the complexity of, not only the format of information, but also the number of resources has grown exponentially. In the traditional library, people dealt with fairly limited spectrum from the range of information sources - some basic reference sources, books, magazines, a few major newspapers, and scholarly journals. The current digital environment has*

expanded these resources from people encounter in their research process, requiring them to navigate back and forth from the print to the electronic environment. An electronic literature (e-literature) system could play a crucial role in ensuring the continuous process in the sharing of knowledge.

Keywords: *Knowledge Sharing Capabilities, Online Communication, electronic resources, Malaysian Higher Learning Institutions*

INTRODUCTION

Every year, a great number of academic literatures are produced by the academicians from the various field of education in Malaysia Higher Learning Institutions. This literature contributes as the most valuable intellectual asset for the institutions as well as addition to the body of knowledge of a specific field. However, there are no proper guidelines available in sharing this knowledge through online communication among institutions of higher learning.

In another situation, online sharing has significantly changed the way people access and discover knowledge, allowing information on almost any subject to be rapidly and easily retrieved within seconds. As increasingly more information resources become available electronically through the search engines, it influences the information needs and seeking behavior of people.

The electronic resources provide a number of advantages over traditional print based sources. These advantages include the fact that electronic information sources allow faster than consulting printed indexes, especially when searching retrospectively. They enable a more straightforward searching through the combinations of keywords. They open the possibility of searching multiple files at one time, effort accomplished more easily than when using printed equivalences. Electronic resources can be printed and searches saved that can be repeated at a later time; they are updated more often than printed tools. One main advantage, especially to distance learners or those with limited time to access the library, is their availability from outside the library by dial-up access.

Today, many believe that electronic resources are the latest "solution' to the effort of getting closer to the information they seek. These information search tools are regarded as reliable and convenient, as they provide easy to access to up-to-date, relevant, and much more information compared to the manual search. In order to utilize the growing range of electronic resources, students must acquire and practice the skills necessary to exploit them. As Dutton (1990) suggests, the skills required to maximize the potential of electronic resources are much greater than those required for searching printed sources. These skills include knowledge of the structure of the databases and the instructions which must be input into the computer by the searcher, as well as an understanding of the ways in which the instructions are linked with one another.

The online environment has shifted the information mode of searching dramatically in the last fifteen years, in terms of the growth in both users and content, as well as significant expansion

of the capabilities that users expect. More and more information are available online. The internet has grown into a portal of unlimited information.

LITERATURE REVIEW

The history of electronic resources for reference service began with the development of computer-assisted typesetting and printing. The publishers of indexing and abstracting services first used computers to print their paper products. They created magnetic tapes that were interpreted by a computer and drove their printers. Companies and government agencies, such as the National Library of Medicine in the United States, developed computer software that could read and manipulate the information on these tapes in new ways. This software allowed reference librarians in those organizations to ask the computer to search for an indexed term or a group of terms to see if there were articles cited on these tapes that would meet the information needs of their users.

During the 1960s and 1970s, computer power, speed, and memory all increased as did the ability to communicate with other computers over existing telephone wires, rather than having each terminal directly wired into the main computer. Information services, such as DIALOG Information Services, which was created to serve the information needs of a single organization or agency, made their computerized files, called databases, grew on a contractual basis. The number of computerized files grew from a mere handful in the early 1970's to the thousands available today. Reference librarians all over the world now possess the power to use simple computer terminals or complex computer workstations to connect with computers located almost anywhere. They can process their enquiries online and receive the information directly on their equipment, or have it printed in a preferred format and sent to the librarian or the user as desired, through online searching.

ELECTRONIC INFORMATION RESOURCES

Higher education and learning has changing rapidly with the advent of technology. According to Shuling (2007), in recent years, electronic information has gradually become the major resource in every university library. The growth and diversity of electronic resources, especially e-journals, in the past few years has led many to predict the extinction of the printed journal (Okello-Obura and Magara 2008). It has been suggested that a new paradigm is sweeping scholarship (Liew, Foo and Chennupati 2000; Harper *et al* 2006). Majid *et al* (1999) argue that technological advancements opened up new horizons for the creation, storage, access, dissemination and presentation of information. In the global information communications technology (ICT)-dominated world, "place" is much less important (Ferguson 2006). "The impact of moving from text-based to resource-based learning has involved heavier use of library materials and a demand for more and varied media sources" (Kinengyere 2007). This makes the provision and use of Electronic Information Systems (EIS) in academic libraries a critical issue for those working in information and library services (Armstrong *et al* 2001; Elam 2007). The pace at which information resources are being produced and converted into an electronic form is greater today than in previous years (Armstrong *et al* 2001). In today's information age it would seem that library users would not only be eager to take advantage of the convenience

electronic resources have to offer, but would be fully immersed in the new technologies (Elam 2007).

Electronic information resources offer today's students with different opportunities compared to their predecessors. Liew, Foo and Chennupati (2000:302) argue that, while reading an e-journal is not the same as reading a printed one, many are beginning to acknowledge the possibility that electronic documents (e-documents) offer users advanced features and novel forms of functionality beyond what is possible in printed form. Years ago Brophy (1993), noted that the advantages of electronic resources over print include speed, ease of use, ability to search multiple files at the same time, ability to save, print and repeat searches, more frequent updating and the ability to access from outside the library (a particular advantage for the distance learner). According to Dadzie (2005), electronic resources are invaluable research tools that complement print-based resources in any cpnventional library. Their advantages include access to information that might be restricted to the user because of geographical location or finances, access to current information, and provision of extensive links to additional resources or related content (Dadzie, 2005). E-resources could be stored electronically thereby saving space, the risk of lost, theft or damage is lessened and costs significantly reduced.

ATTITUDE TOWARDS E-RESOURCES

Academic libraries have to adapt themselves, amidst the current superior new world development in IT. The rapid advancement of Information and Communication Technology (ICT) has brought a revolutionary change in the information scenario giving rise to a number of options to the users' community to handle varied information sources conveniently and effortlessly. As a result e-resources have become the lively substance to the modern library's reserves in satisfying varied needs of students, teachers, and researchers with minimum risk and time (Swain and Panda 2009). For better planning, it is vital to have knowledge on the attitudes of users towards e-resources.

Swain and Panda (2009), say the library users' attitude to information is gradually shifting from the printed documents to electronic resources thus, it has been their prerogative to know the details of the availability and organization of e-resources like online journals and databases, electronic theses and dissertations (ETDs), government publications, online newspapers, etc. in libraries. Given technology increased use, it is important to understand how technologically rich environments are influencing students' attitudes toward e-resources access. The introduction of open access journals and other resources for instance is creating another attitudinal tendency towards e-resources.

Open access is one of the cheapest routes to electronic resources and over the last few years, open access resources have grown and provided an affordable way to provide access to some journal content (Price 2009). Supporters of open access argue that, when academic articles, dissertations and theses are put online and open to all, it helps in fighting duplication and plagiarism of other people's intellectual works. Although the open access movement has brought access to many valuable resources, and provided libraries with an invaluable amount of resources, many open access projects still face an uncertain future (Price, 2009). Many critics

are not sure that the open access model can survive because some are not considered "financially viable" or as high quality as traditionally purchased or subscribed content (Robinson, 2006; Shao and Scherlen, 2007; Turk and Bjork, 2008).

Attitudes towards e-resources access could be attributed to problems faced when accessing e-resources. For instance in a situation where there is inadequate computer technologies to access e-resources or poor Internet connections, students positive attitudes could be affected. That is why the problems that affect e-resources access are addressed in higher learning institutions libraries.

The arguments for students using electronic resources are compelling. An adequate knowledge of computers and retrieval techniques is desirable to search these resources effectively. It is necessary to establish what computer skills students require to access electronic information resources in libraries.

METHODOLOGY

After considering the research questions, and the feasibility of collecting and analyzing the data, the researcher decided to undertake quantitative research methodology. Quantitative studies usually commence deductively with a theory which will subsequently be tested through the process of research. Hence, quantitative research seeks to verify theory. According to Marchionini (2009), quantitative studies generate data in the form of numbers, often depicted positively as reliable and rigorous, probably because of their association with 'science'.

This study aims to investigate the information seeking behavior of postgraduate student. Specifically, this study addressed the question on how postgraduate student search and use relevant information. According to Babbie (1998), there are two major aspects of research design; it must specify as clearly as possible what to find out; and it must also determine the best way to do it.

The research design has offered the researchers a direction to follow from the beginning to the completion of the study. According to Kawatra (1992), it is important to plan a user study carefully from the beginning to the very end and the lay out a detailed plan of each step ahead of any surveying, observing, and data collection. The plan should consist of at least these steps:

- Surveying the previous studies and literature in general and learning about all aspects of user studies

  - Determining the objectives of the study.

  - Determining the variables to be studied and the model to be followed.

  - Selecting the sample of the population to be studied.

  - Determining the method for collection of data for observation.

- Determining the method of analysis of data or observations.

- Determining the ways of presentation and utilization of results, including dissemination.

In order to answer the research questions of information seeking behavior, questionnaire was used to collect the data. Details of the research design, the sample, and the instruments used to collect the data, the details of how data was collected and the methods used for analysis are given in the following sections.

Research Methodology/Instrument
The instrument used in this research is questionnaire. The questionnaire was divided into four sections; Section A, Demographic; Section B, Usage of Electronic Recources, Section C, Knowledge Sharing Practices; and Section D, Proposed of E-Literature.

Sampling/Population
The selected samples of postgraduate students have been chosen that being involved in this study. The pre-testing and revising of the questionnaire have been made. The data was collected through the questionnaires were distributed to the respondents.

Population and Sampling

The total number of postgraduate student who contributed to this research was 280 students from 7 different public universities in Malaysia. The research methods are as follows:

Questionnaires
One set of questionnaire was distributed to the postgraduate students in each university. It consists of the close-ended and open-ended questions which comprise the questions on the usage of e-resources, knowledge sharing practices, and the proposed e-literature system.

Review on research papers
In this method, the way of users searching for information was identified in this research, based on the literature review from other research papers and reading from the related journals.

Questionnaire Design

A set of questionnaire was developed and questions were constructed based from the literature of user studies. A good questionnaire is one that is easy for the respondents to complete and easy to analyze. The layout of the questionnaire is, therefore, very important. The following guidelines outlined by Kawatra were taken into consideration, such to:

- Be consistent,

- Make clear where and how the responses is to be recorded,

- Leave adequate space foe responses,

- Use the smallest number of different types faces possible, but distinguish questions and instructions,

- Number all questions in a continuous sequence and only use letters to identify subparts of question, and

- Not split questions or responses categories between pages.

The format of the questionnaire was based upon the open-ended and close-ended questions to measure the intensity of views of respondents to the questionnaire. The structured questions were multiple-choice items from which respondents were asked to choose. A few open questions were included in the questionnaire so as to get the views of the respondents in their own words.

Data Collection

The process of data collection is based on the questionnaire that was distributed to 280 postgraduate students from which only 200 set of questionnaires could be used for analysis. The questionnaire enabled the respondents to choose on the answers that lead to their usage of e-resources, knowledge sharing practices and proposed of e-literature system. The questionnaire also consisted of the open-ended section to enable the respondents to give their opinions and suggestions.

Data Analysis

The quantitative data analysis computer program that is called Data Statistical Package for the Social Science software (SPSS) was used to analyse the data. SPSS is one of the tools used in generating the statistic of the research, not only for the close-ended questions but also on the open-ended questions. There are two categories of statistical analysis that were applied, descriptive statistics and the inferential statistics.

RESULTS AND DISCUSSION

The descriptions on data analysis as a result from the questionnaires that were collected from 200 respondents.

Demographic

In the demographic section, respondents were asked to clarify their gender, age, and current semester

Table 1: Demographic

DEMOGRAPHIC (Q1-Q4)		F	(%)
Gender	Female	120	60
	Male	80	40
	Total	**200**	**100**
Age	18-25	130	65
	26-35	54	27
	36-45	16	8
	45>	0	0
	Total	**200**	**100**
Semester	2	96	48
	4>	60	30
	3	22	11
	1	22	11
	Total	**200**	**100**

Table 1 above explains demographic of respondents. This data reveals the ways respondents used the electronic resources to acquire the needed information. There are 120(60%) of the respondents who are female and 80(40%) of the respondent who are male. There are 130 (65%) of the respondents whose age are in the range of 18-25 years old, 54(27%) is from the age 26-35 years old, 16 (8%) from the age of 36-45 years old. The highest number of respondents are from semester two, 96 (48%) and 60 (30%) from semester 4 and above.

Knowledge Sharing Practices

This section includes how respondents learned to share their e-literature, time spent by respondents and the strategies used by them in sharing the e-literature.

Table 2: Knowledge Sharing Practices

Knowledge Sharing Practices		F	(%)
Learn to Share Electronic Literature	Trial and Error	145	72.5
	Library orientation/instruct programs	32	16
	Guidance from other students	14	7
	Guidance from Lecturer	9	4.5
	Guidance from library staff	0	0
	Total	**200**	**100**
Time Spend Sharing Electronic Literature	3 hours and above	39	19.5
	1 hour	117	58.5
	2 hours	44	22
	Less than 1 hour	0	0
	Total	**200**	**100**
	Title Search	127	63.5

Respondent's Search Strategies in Searching Literature	Title Search	127	63.5
	Keyword Search	51	25.5
	Subject Search	12	6
	Boolean Operators	6	3
	Exact Phrase	3	1.5
	Author Search	1	0.5
	Total	200	100

The data in Table 2 shows that there are 145(72.5%) respondents who learned to share their e-literature through trial and error basis and according to their self-esteem. Other than that, 32(16%) learned from library orientation/instruction program. As for The findings also reveal that only 14(7%) of respondents got the guidance from other students, while 9(4.5%) got it from the lecturers.

The highest time spent by respondents in sharing their e-literature is 39(19.5%), that is 3 hours and above of their time. 117(58.5%) spent their time in about 1 hour to share their e-literature and 44(22%) respondents spent 2 hours to get the relevant information that suited their needs.

As for the search strategies, the result shows that the highest percentage was by Title Search, by which 127(63.5%) respondents used as their strategy. Next, 51(25.5%) respondents used Keywords Search as their strategy technique in searching. Other than that, 12(6%) respondents used Subject Search while only 6(3%) of respondents used Boolean Operators. As for Exact Phrase strategy, it indicates that only 3(1.5%) while Author Search strategy is 1(0.5%).

E-literature System

Questions were asked to illicit the-literature system used by the postgraduate students in sharing the electronic resources. There are several questions that were asked, such as the types of respondent's search outcomes. Also questions were asked whether they were specified by their lecturers to use specific electronic resource, and on their satisfaction and difficulties on the search outcomes.

Table 3: *Level of Satisfaction on E-Literature System*

LEVEL OF SATISFACTION ON E-LITERATURE SYSTEM (Q17-Q20)		F	(%)
Types Of Search Outcomes	Research Article	175	87.5
	Conference Paper	18	9
	Abstract Only	7	3.5
	Concept Paper	0	0
	Total	200	100
Satisfied With The Search Outcomes	Yes	189	94.5
	No	11	5.5
	Total	200	100
Lecturer Specify The Electronic Literature	Yes	137	68.5
	No	63	31.5
	Total	59	98.3
Difficulties	Too Much Information	140	70
	Irrelevant Information	48	24
	No Result Displayed	5	2.5
	Page Not Found	5	2.5
	No Difficulties	2	1.0
	Total	60	100

The Table 3 showed that the types of search outcomes the result, indicates that 175(87.5%) found that research articles as the outcomes of electronic resources. Meanwhile, 18(9%) said that they discovered conference papers, while 7(3.5%) respondents found abstracts as the outcomes. This means, there was a difference in the search results from different individuals, based on their needs and types of electronic resources used by them.

The results also showed that 189(94.5%) respondents were satisfied with the outcomes in using the electronic resources. Only 11(5.5%) indicated 'No' for the satisfaction in using the electronic resources. In this case, the respondents might prefer to use printed sources rather than electronic resources. The study also found that 137(68.5%) respondents said that they have been recommended by their lecturers to use specific electronic resources in completing their assignments and 63(31.5%) answered for 'No' as they are free to use any source for completing their assignments. This means, in the course of searching for information, students did not limit their search to only one electronic resource.

The results reveal the difficulties faced by respondents in searching information using electronic resources. The highest data falls under 'too much information', with 70% respondents. Other than that, 48(24%) respondents said that they were confronted with irrelevant information from their search. Results of other difficulties faced, such as, 'No result displayed' and 'Page not found' indicates only 5(2.5%) each, while 2(1.0%) respondents did not face any difficulty.

RECOMMENDATIONS

The advance of technologies has made it possible to extrapolate knowledge and allowed academic libraries to shift from a traditional environment to a digital environment. A superior stage of development has been reached where the prevalence of the electronic formats allows for providing larger quantities of information to a larger number of users (Vignau and Quesada 2006). In order to meet the ever-increasing demands from users for remote access to information, academic libraries now subscribe to electronic resources, such as e-books, full-text e-journals and online bibliographic databases. While the availability of these electronic resources enables remote access to needed information, they concomitantly present issues and challenges (Armstrong *et al*, 2001). Online resources, including e-book call for a sustainable model for continuous access due to shrinking budget of libraries.

The results of this study show that students could exploit the benefits of electronic resources in their academic work. As for this result, a number of issues need to be addressed beforehand. This study, therefore, recommends the following:

a)   Computer skills of postgraduate students should be improved. The current ICTs course given to the first year postgraduate students should be maintained with emphasis on e-information literacy. This could include training on searching open access journals and subscription based databases, using Boolean logic searches, training on database structure or providing the searching aids for them to at least some degree.

b)   Lecturers should insist postgraduate students to use electronic resources. Encouragement *via* academic staff should be explored to promote the usefulness of electronic resources to students. Lecturers' roles are crucial in the promotion of electronic information resources. Coursework/assignments attached to the use of electronic resources should be maintained and evolved. This will compel postgraduate students to use electronic resources further.

c)   All postgraduate students should be taught e-records management to help them in the management of electronic information obtained from electronic resources. This can be an integral part of the course on Information Storage and Retrieval taught to Masters' students.

d)   Librarian' skills on electronic resources searching and retrieval should be improved. There has been a paradigm shift in the services offered throughout the world. Library-centered services are changing to user-centered. It may be necessary for library staff to receive training themselves in customer care and e-resources use in order to provide training more effectively.

e)   University libraries should intensify their awareness campaigns concerning the availability of electronic resources. The use of e-mail alert system, text messages and prizes for those who use a lot of electronic resources should be considered by the University Library as

methods of promotion. Phone short message services should be integrated into library e-resources services provision for awareness services for electronic resources.

f) The library should constantly experiment with new technologies. Classes in using different technologies including the Internet should be offer to the students. In order to facilitate the classes, the library should develop a manual for individuals to work at their own pace either in the library or at home/hostel. Where appropriate, the use of internet resources as well as links to UiTM Library's in-house databases is incorporated. Librarians should teach the users how to effectively use the Internet and also to find information on a particular topic and how to evaluate the quality of information found. The Internet classes can be conducted as classroom-based session or with the upgrade of the server, where as online tutorial sessions will be in place.

g) **Ongoing Information Literacy Programme Classes**. The library should begin to conduct series of ongoing classes for users who need assistance to find information from Internet and specific electronic resources that are available in the library. The classes should be offered every semester on a first-come, first served basis and should be free of charge to students and staff. The sessions could be organized according to topics and publicized to the users.

h) **Searcher Updating**. The second level of in-house training programmes may be called current awareness, intermediate searching, or online refresher, but their primary purpose is to keep searchers and other staff members up-to-date. The focus could just be on online searching. Advanced search tips and techniques, databases on specific topics, and upgrading search skills have all been a part of these in-house programmes in libraries.

i) **Basic Search Training**. The first two programme levels are both primarily-service staff development programmes to make sure everyone in a library feels as part of library operations as well as in control of technology by being aware of its powers, limitations, and new developments. A formal in-house basic training programme offered within an individual library or by a consortium of libraries has the advantage of allowing instructors and students to continue to work together after the course is over so the learning process does not end when the class does. It can also provide a collegial atmosphere and sense of accomplishment for students and instructors alike.

j) **In-house training and staff development programmes** for electronic searching deserve a closer look in these times of change. They should not be dismissed as too difficult since there are many different programme options. Such programme should provide a return on a developing a more knowledgeable staff, improving in-library communications, and most importantly, ultimately improving service.

CONCLUSION

In this study, gender, age, and semester, are given the priority in order to see the significant factors that contribute to the information seeking behavior of the postgraduate students. Some conclusions can be made, based on a respondent's answers. For example, the longer they

resided in to the campus, the more they are likely to be familiar with the availability and use of the electronic resources. Determining the respondents' gender can also help this study in determining the information seeking behavior and sharing the knowledge as well. Gender might influence the respondents' behavior on handling or operating the electronic resources. It seems that every result on the findings, male and female show the different numbers and percentage on each question regarding electronic resources.

Overall, this study has identified the factors with its important element that the researchers regard as the main key players, contributing to online sharing and searching of postgraduate students by utilizing the electronic resources. Information on the respondents' approach in accessing the electronic resources shows that experience and exposure, search time spent, expectation, purpose, proper guidance from the staff, lecturers and friends influenced the users' searching approach. This study involves more on the respondents' behavior, search strategies and their level of understandings.

Finally, this study has established students' behavior in their response towards e-literature system and their ability to use electronic resources. However, it did not attempt to establish whether there was any relationship between students' ability to use electronic resources and students' performance in their studies. This is because the objectives and findings of this study only focused on electronic resources usage while its influence towards students' academic performance could be focused in the future research.

REFERENCES

Armstrong, C., Fenton, R., Lonsdale, R., Stoker, D., Thomas, R. and Urquhart, C. (2001). A study of the use of electronic information systems by higher education students in the UK. *Aslib*, 35(3): 241-262.

Babbie, E. L. (1998). The *practice of social research*. 8th ed. Belmont, CA: Wadsworth Publishing, 1998.

Brophy, P. (1993). Networking in British Academic Libraries. *British Journal of Academic Librarianship,* 8, (1): 49-60.

Dadzie, P.S. (2005) Electronic resources: access and usage at Ashesi University College. *Campus-ide Information Systems*. 22(5): 290-297.

Elam, B. (2007). Readiness or avoidance: e-resources and the art historian. *Collection Building*, 26(1):4-6.

Ferguson, A. W., (2006). Print to Electronic: the University of Hong Kong Case. *Collection Building,* Vol. 25. No. 3: 85-88.

Harper, P.V. , Goldbeck, K, Hogarth, M., Greenebaum, D., Magolis, D., Jackson, M. (2006). The 1st Electronic Resources and Libraries Conference: A Report. *Library Hi Tech News*. , Vol. 23, No.5: 12-22.

Kawatra, P. S. (1992). *Library user studies: a manual for librarians and information scientist*. Bombay: Jaico Publishing.

Kinengyere, A. A. (2007). The effect of information literacy on the utilization of electronic information resources in selected academic and research institutions in Uganda. *The Electronic Library*, 25 (3): 328-341.

Liew, C. L., Foo, S., Chennupati, K. R.(2000). A study of graduate student end-users' use and perception of electronic journals. *Online Information Review*, 24 (2): 302-315.

Majid, S., Abozova, AF. (1999). Computer literacy and use of electronic information sources by academics: A case study of International Islamic University of Malaysia, *Asian Libraries*, 8 (4): 100-111.

Okello-Obura -Obura, C. & Magara, E. (2008). Electronic information access and utilisation by Makerere students in Uganda. *Evidence Based Library and Information Practice*, 3 (3):98-105.

Price, A.C. (2009). How to make a dollar out of fifteen cents: tips for electronic collection development, *Collection Building*,28 (1): 31-34.

Robinson, A. (2006). Open access: the view of a commercial publisher, *Journal of Thrombosis and Haemostasis*, 4 (7): 1454-1460.

Shuling, W. (2007). Investigation and analysis of current use of electronic resources in university libraries. *Library Management*, 28 (1/2): 72-88.

Swain, D.K., & Panda, K.C. (2009). Use of electronic resources in business school libraries of an Indian state: A study of librarians' opinion, *The Electronic Library*, 27 (1): 74-85.