Technology Adoption In Ghana Library Board, Challenges And The Wayforward

David Prah

Business School, University of International Business and Economics,
Beijing-China

Abstract: For centuries, social and technological changings have been affecting every profession. During the last two decades rapid technological development has affected library services as well. Technological advancement compelled libraries to adopt interactive online media for their survival. The study examines technology adoption in Ghana Library Board. Libraries are going through challenges in terms of research, practices and the need for them to be in tuned with the digital age. The study employed a qualitative based study and emphasized that the library field has been facing negligence from the very beginning of library movement in Ghana. The librarian and the concerned personnel do not get their legal status and facilities. For this reason, they are not active in their field. This problem impedes the gradual development of libraries in Ghana. In this age of technology, library services should be redesigned to meet the users' needs and to provide modern information services facilitated by ICT. As libraries in developed countries have introduced lot ICT facilities to its users, now this is the time for the developing countries' libraries to follow the developed countries and adopt new technological facilities. The study has established that a wide range of technologies were being used by GLB. Most of the respondents were aware of the available technologies and were using them for their despite the challenges. In reference to the research gaps highlighted in the introduction of the paper, the study has generated valuable insights and lessons for research and practice. In using TAM to understand the factors which influence adoption, the findings tend not to be far from that of previous research on technology adoption .There is evidence to suggest the effect of PU and PEOU on the intention to adopt technology. Wu and Wang (2005) considered the adoption cost as essential in library settings and also as having a significant influence on perceived usefulness and ease of use. Thus, the development of strategies of technology adoption should consider the cost of acquisition and usability for those at the 'bottom of the pyramid' which also represents a significant market size. It is recommended that the Government of Ghana as well as other government's agencies such as GETFUND should allocate sufficient funds to support the purchasing and maintenance of ICT based system by libraries. Management of GLB should introduce different types of training programs for unskilled library professionals.

I. INTRODUCTION

The Ghana Library Board (GLB) was established out of a generous contribution of by the late Rt. Rev. John Orfeur Aglionby, the then Anglican Bishop of Accra. In 1946, the Aglionby Library Management Committee worked with the British Council Advisory Committee towards library development in the then Gold Coast. The work of the Committee resulted in the passing of the Gold Coast Library Board Ordinance Cap 118, in December, 1949, which became operational on January 1, 1950. The British Council handed over its Librarian, Miss E. J. A. Evans, and a stock of 27,000 books to start the public library service. The Ordinance was later re-enacted as Ghana Library Board Act 372, 1970. The Act charged GLB with the responsibility of establishing public libraries throughout the country, and since its inception in 1950 the GLB has concerned itself with the provision of a nationwide library service.

As a result of this, a network of libraries comprising ten (10) Regional Libraries and fifty-three (53) Branch Libraries have been established. It was projected that by the year 2000 libraries would have been established in all district capitals, as

well as some of the big towns in the Districts. However, Ghana's economic recession over the years has made it difficult for the GLB to accomplish this notable objective. In the course of time, the GLB assumed additional responsibility when the African Research Library, now George Padmore Research Library on African Affairs, and the School and College Libraries Department were established in 1961 and 1972 respectively to become an integral part of the GLB. Technological changes has always been seen as strong evolutionary force but the advert of internet is something that has shaken almost all spheres of personal, social and professional human life (Ahmed and Qazi, 2011). Public libraries have the opportunity to explore new social and public policy questions around technologies that are made possible. The problem is what challenges and opportunities do the libraries face in seeking the technology to enhance their effectiveness as community organizations. Access to libraries and information remains a challenge in the country, where this has become an issues to national awareness. Currently the library sector is beset with low external and internal usage of technology which is making work more difficult. Outdated equipment and manual process in work activities, thus lowering the productivity and employee moral (Ghana Library Board, 2012)

The use of information technology (computers, telecommunication, reprography, etc.) has a special role in the modernization of library practices. Hence, with ICT, such things as electronic cataloguing, electronic online public access catalogues (OPACs), electronic acquisition and serials control, electronic circulation functions, electronic distribution of commercial publications, electronic availability of raw data, multimedia information delivery systems, digitized collections and online textbooks are all now practicable with a higher degree of user satisfaction (Ajayi, 2002; Abels et al., 1996). It is recognition of this, that universities have begun to developed IT and IS strategies to deal with the need to respond to rapid changes in technology which affect content of nearly very course; libraries must be up to date with the latest systems and software if they are to keep pace with the current demands in the knowledge economy (Gallimore, 1996).The panacea to this problem lies in effective adoption of technology in libraries. Through ICT libraries users can have access to variety of information available on computer networks and online services across the globe. It has posited that in the twenty-first century, globalization of information and the adoption of information technology will be the hallmark of great libraries (Omoniwa (2001). The size of libraries or their collections may not be the benchmark but rather accessibility to the major thrust of the library automation. In view of the above therefore the study will look at adoption of library technology by Ghana Library Board, its opportunities and challenges. This study tries to answer the question of what drives the adoption of technology in the Ghana Library System.

II. LITERATURE REVIEW

Libraries are going through challenges in terms of research, practices and the need for them to be in tuned with the digital age. To seize new technological opportunities libraries need to need to upgrade their knowledge (Green et al., 2011). A number of studies have been conducted on technology adoption in developed countries and in some developing countries outside Ghana. Existing literature available have had different studies on technology Adoption among different industries including that for libraries. An attempt has been made to review some of the literature relevant to this study, with reference to the themes in the objectives of the study. This chapter also presents some theories of adoption models (Diffusion of innovation, Technology Acceptance Model and Technology Readiness Index).

THEORETICAL FRAMEWORK OF THE STUDY

The study will be based on the Technology Readiness and Acceptance Model (TRAM). The technology readiness and acceptance model is, as the name implies, an integration of the two models. First presented by Lin et al. (2005), TRAM represents the latest contribution to merge general personality dimensions of TRI with system specific dimensions of TAM. Thus, explaining how personality dimensions can influence the way people interact with, experience, and use new technology. In the first attempt to integrate these two tests, technology readiness was used as a predictor of TAM (Lin et al., 2005). However, in a more recent study, factors comprising technology readiness have been linked directly to the dimensions of TAM (perceived usefulness and perceived ease of use), resulting in a more specific model (Walczuch et al., 2007). Optimism and innovativeness are thought to lead to higher perceived usefulness and ease of use of a given technology, whereas insecurity and discomfort are suggested to inhibit these dimensions of TAM.

Linkages between perceived usefulness, perceived ease of use, and actual use of technology are well established (Davis, 1989; Venkatesh & Davis, 2000; Schepers & Wetzels, 2007). However, an inclusion of actual use in the integrated model has not yet been proposed. By including actual use, interrelationships between factors can be displayed in a more comprehensive picture. Following the model proposed by Walczuch et al. (2007), we view the personality dimensions of TRI as antecedents to the cognitive dimensions of TAM. The inclusion of actual use would constitute a valuable extension of previously conducted research. The direct effects of TRI dimensions on actual use have previously been accounted for (Parasuraman & Colby, 2001). These direct effects are, however, not included in our proposed research model. There are two reasons for this. First, inclusion of external variables mediated through perceived usefulness and perceived ease of use is in accordance with the original model of TAM (Davies, 1989).

LIBRARIES AND TECHNOLOGY DEPLOYMENT – EMPIRICAL PERSPECTIVE

Several studies have pointed to the relevance of technology libraries all over. For example in Canada, the use of technology by libraries is recorded. A report prepared by the Canadian Association of Research Libraries (CARL)

revealed that in the year 2000/2001, academic libraries subscribed to 436,731 electronic journals. *The same report also states that librarians are leaders in using technology to transform traditional library resources and services to meet the challenge of the 21st Century.* In Singapore, Chia, Lee and Yeo (1998) report that a committee was set up by the government and mandated to design an information technology plan for the nation. The National Library of Singapore on its part took an initiative in ensuring all libraries especially academic libraries are ICT based. In Saudi Arabia, Siddique (1997) carried out a study on the use of ICT in academic libraries and the finding reveals that out of the six universities surveyed majority of the libraries had Internet, one kind of library software or the other, CD-ROM facility, OPAC services, FAX and E-mail services. It is eight years since Siddique carried out this study and if the same study were to be carried out today; the findings would be totally different.

Academic libraries in Africa do not enjoy the same information delivery methods like those in developed countries except those in Southern Africa. Chisenga and Rorissa (2001) point out the great disparity in the adoption and use of technologies in academic libraries. Waiganjo (2006) writing from Kenya states that academic libraries in Kenya suffer poor funding, poor communication system and lack of technologically qualified librarians. The case is not different in Uganda. Magara (2002) pointed out that power unreliability, management attitude and poor ICT skill of the librarians; Adeya (2007, 2002) writing from Botswana states that inadequate computerization, inadequate infrastructure and inadequate human capacity as the major challenges towards ICT use. Rosenberg (2005) eludes the challenges to ICT use to lack of library software standardization. In Ghana, academic libraries enjoyed the availability and use of information and communication technology through the DANIDA sponsored project under the auspices of the International Federation of Library Association-Africa branch. The six universities were networked under this project and this made communication very easy and document delivery possible among the academic librarians in the six university libraries.

Again academic libraries in Nigeria attempted to automate library functions as far back as 1970; 1990 and the attempt still continues. TINLIB software was introduced in leading academic libraries including those of the University of Ibadan and Ahmadu Bello University Library (Omoniwa, 2001) but due to some technical and organisational problems, no single academic library in Nigeria in general and in the Southwestern Nigeria in particular uses the TINLIB software today. Obajemu and Ibegwam (2006) point out those libraries in Nigeria are still on the race to make their services totally technology- based. The MacArthur report of 2005 titled "Developing Strong University Libraries in Nigeria," points out the need to develop effective information delivery system as a key component of university teaching and learning, and modern technology greatly enhances such system. The report also points out lack of appropriate funding system to acquire relevant information and communication tools; lack of infrastructure to provide access to electronic information. Money was not there for collection development and there have been few acquisitions, most of the collections stopped growing substantially in the mid-70s. Technologies enhance

service provision to library clientele. Librarians use ICTs to perform functions like cataloguing and classification, serials management, collection management, budgeting, circulation management, referencing, indexing and abstracting in order to improve information services to library users.

FACTORS INFLUENCING TECHNOLOGY ADOPTION

The stages, by which a person adopts an innovation, and whereby diffusion is accomplished, include awareness of the need for an innovation, decision to adopt (or reject) the innovation, initial use of the innovation to test it, and continued use of the innovation. According to Rosenberg, (2005), there are five main factors that influence adoption of an innovation, and each of these factors is at play to a different extent in the five adopter categories.

Relative Advantage - The degree to which an innovation is seen as better than the idea, program, or product it replaces (Rosenberg, 2005).

Compatibility - How consistent the innovation is with the values, experiences, and needs of the potential adopters (Rosenberg, 2005).

Complexity - How difficult the innovation is to understand and/or use (Rosenberg, 2005).

Triability - The extent to which the innovation can be tested or experimented with before a commitment to adopt is made (Rosenberg, 2005).

Observability - The extent to which the innovation provides tangible results (Rosenberg, 2005).

FACTORS INFLUENCING EFFECTIVE ADOPTION OF TECHNOLOGY IN LIBRARIES

A number of factors have been identified as factors affecting the adoption of technology in libraries. The following factors are also influenced effective adoption of technology in libraries, which are mentioned as follows:

ADMINISTRATIVE FACTORS

The library field has been facing negligence from the very beginning of library movement in world. The librarian and the concerned personnel do not get their legal status and facilities. For this reason, they are not active in their field. This problem impedes the gradual development of libraries in most countries (Siddike, Munshi and Sayeed, 2011). In this age of technology library services should be redesigned to meet the users' needs and to provide modern information services facilitated by ICT. As libraries in developed countries have introduced lot ICT facilities to its users, now this is the time for the developing countries' libraries to follow the developed countries and adopt new technological facilities. This factor is much more acute than other factors. Administrators, policy makers, and government executives are not fully aware of the importance of ICT as well digital technologies. In the view of Ahmed (1998), information professionals have failed to make its importance clear.

HIGH COST AND UNINTERRUPTIBLE INTERNET CONNECTION

Uninterrupted internet connection in developing countries greatly affects technology adoption. Dial up connection as well as broadband connection frequently interrupted due to technological disruptions of service providers and so often cables are cut down by the theft of wires. According to Roknuzzaman (2006), this problem does not only affect developing countries but also the developed world. Although technology is a must for all the libraries interested in making education and research more accessible, but it requires a good infrastructure facilities like adequate number of workstations with internet connection, high bandwidth, laser printers, sometimes need dedicated web servers, modem, UPS, etc. are very costly and many libraries cannot afford the cost. Again, inadequate physical facilities of most libraries hamper the adoption of Technology (Siddike et al, 2011).

LACK OF SKILLED MANPOWER

Although computer is becoming popular, there is still lack of computer literate professionals. Many senior and old information professionals do not know how to operate computer. The information professionals in most developing countries do not have adequate skills to handle computers and other information technologies. Library and information professionals of the libraries of most do not have proper knowledge about ICT as well as other digital technology related knowledge. Inadequate financial support has made the possibility of technology adoption in the university libraries of Bangladesh much more complex.

PSYCHOLOGICAL PROBLEMS AND LACK OF PROPER PLANNING

The fear of the unknown as a result of change is another important factor hindering the effective adoption technology especially in the context of developing countries. The reluctance of information professionals to accept new technologies hinders the development of ICT based as well as digital libraries (Shuva, 2005). Also, to implement technology in libraries, there is the need for proper, consistent, long term as well as short term planning.

LACK OF ICT TRAINING PROGRAMS AND STANDARDS

To increase the ICT skills of the information professionals in libraries of Bangladesh need continuous training and orientation programs. There is no international standard among the library and information professionals of libraries. Digital libraries have become an increasingly important way in providing library services to users (Borgman et al., 2005; Talja et al., 2007; Vakkari, 2008). To encourage users to accept and continually use digital libraries, library designers and managers need good understanding of the factors that influence users' adoption.

III. METHODOLOGY

Qualitative research approach is notably used to obtain information about the prevailing status of a phenomenon and to describe "what exists" with respect to the conditions in a situation. A qualitative study is especially useful to provide evidence and explore areas where existing knowledge is limited (Cavaye, 1996 in Darke et al 1998). The study relies on the use of qualitative methods of data collection. It also seeks to obtain information which will clarify and deepen the understanding of the merger and the challenges yet to be overcome by the Authority. The qualitative data collection methods used is interviews with key management members. The study makes use of interviews. An interview is a technique of qualitative research which involves engaging a small number of carefully selected respondents in intensive individual interviews. This is done in order to obtain their views and perspectives on the topics of interest to the researcher. In depth interviews help to put into context a complete overview of what has happened in a program and why (Boyce, 2006). The interviews give the researcher more insight into the rationale behind the merger and problems associated with the merger. Interviews are an essential source of information for case study research (Yin, 2003).

There were two main sources of data classified under primary and secondary. Primary data will consist of the information obtained through interviews. Secondary data consist of information obtained from related studies, existing literature, and reports of the Ghana Library board as well as other related institutions. Purposive sampling was used to obtain information from key management members who are knowledgeable about the adoption of technology. Purposive sampling is a non-probability sampling method which is sometimes called judgmental, selective or subjective sampling. The main goal of purposive sampling towards fulfilling the objective of the qualitative approach to research is to focus on identified characteristics of the population under study, which will best help to answer the research questions. In this case the characteristics under review are the reasons behind the Merger, its benefits and challenges. Purposive sampling is useful in qualitative design as it offers the researcher some degree of control (Barbour 2001).

IV. DATA PRESENTATION AND DISCUSSION

In order to ascertain the motives or driver for technology adoption by GLB, respondents were asked to indicate their levels of awareness of technology. In addition respondents were also asked to indicate whether or not GLB is using any technology and how long GLB has adopted this technology. The findings suggest that all the respondents were aware of what technology means. While some of the respondents defined technology to imply *Modern ways of doing things/work easy by the use of machines* others indicated that technology is *the use of machines not the mind*. A respondent also had this to say concerning the definition of technology *the use of modern machines to make work in an institution easier.* In addition a respondent gave a comprehensive definition as the use of *diverse set of technological tools and resources*

used to communicate, and to create, disseminate, store, and manage information. These findings indicate that levels of awareness of the technology varied among the respondents according to their perceptions. In support of the responses given by the respondents, Omoniwa (2001) has posited that in the twenty-first century, globalization of information and the adoption of information technology will be the hallmark of great libraries. The size of libraries or their collections may not be the benchmark but rather accessibility to the major thrust of the library automation. For any library to derive maximum benefit in this information age, it has to be online.

BENEFITS ASSOCIATED WITH TECHNOLOGY ADOPTION BY LIBRARIES

Respondents were asked to indicate the benefits of using technologies. The major benefits of assistive technologies they noted includes; technologies provide easy access to information; enable users to do conduct research; enhance the learning process; provide opportunities for users to acquire IT skills; and also provide opportunities to learn more.it is clear from the responses that technologies enhance service provision to library clientele. Librarians use ICTs to perform functions like cataloguing and classification, serials management, collection management, budgeting, circulation management, referencing, indexing and abstracting in order to improve information services to library users. Respondents also pointed that the use of technology is very efficient and effective. Efficiency has to with the relationship between inputs and outputs. Effectiveness, on the other hand, refers to the use of outputs to achieve objectives, or service consumption. There is a need to separate cost efficiency, service effectiveness and cost effectiveness and to develop performance measures. Furthermore, these performance measures must be able to go beyond simply describing efficiency Respondents also argued that the rapid growth of technology infrastructure has led to the increased availability and use of computers in libraries. In terms of utilization, technology has expanded from use primarily as an instructional delivery medium to an integral part of the learning environment. Some of the respondents further argued that the use of technology is economical even though it requires high initial capital

EXAMINATION THE CHALLENGES ASSOCIATED WITH TECHNOLOGY ADOPTION

The study also sought major factors militating against effective adoption of technology Ghana Library Board. Respondents indicated that factors such as inadequate funds, lack of trained personnel on ICT and lack of awareness of ICT potentials by users. Respondents also indicated that they suffer frequent power outage and poor attitude of staff towards library automation.

Almost all the respondents interviewed indicated that administrative factors are negatively affecting the technological drive of GLB. To a respondent, *"This factor is much more acute than other factors. Administrators, policy makers, and government executives are not fully aware of the importance of technologies.* Moreover a respondent indicated

that, *"information professionals have failed to make its importance clear"*. This is supported by Siddike, Munshi and Sayeed, (2011). To them this problem impedes the gradual development of libraries in most countries. In this age of technology library services should be redesigned to meet the users' needs and to provide modern information services facilitated by technology. As libraries in developed countries have introduced lot of technological facilities to its users, now this is the time for the developing countries' libraries to follow the developed countries and adopt new technological facilities. This factor is much more acute than other factors.

Some of the respondents indicated that Lack of support from the authorities is also a big challenge which has greatly affected the adoption of technology. *Lack of reliable supports (financial, technical, infrastructural, institutional, and administrative, etc.) from the government as well as higher authority creates severe problems to introduce technology by GLB.*

Interruption in internet connection especially in Ghana is a challenge to virtually all activities in the country whether private or public. It is therefore not surprising that most of the respondents indicated this is a big challenge. An angry respondent had this to say *"Our dial up connection as well as broadband connection frequently interrupted due to technological disruptions of service provider and so often cables are cut down by the theft of wires"*. High cost of infrastructure development also caught the eyes of the respondents as another major challenge. Although technology is a must for all the public and private libraries worldwide, but it requires a good infrastructure or facilities. A respondent indicated that "*a good infrastructure or facilities like adequate number of workstations with internet connection, high bandwidth, laser printers, sometimes need dedicated web servers, modem, UPS, etc. which are very costly and we cannot afford the cost.* In support a respondent stated that *"inadequate physical facilities of the GLB hamper the growth of Information and Communication Technologies"*. Lack of skilled human resource is another challenge revealed by the study. The information professionals of GLB do not have adequate skills to handle computers and other information technologies. A respondent hinted that "*Although computer is becoming popular in Ghana, still we have of lack of computer literate professionals. Many senior and old information professionals do not know how to operate computer"*.

Psychological problems also came to the lime light as another factor hindering the successful adoption of technology. The reluctance of the information professionals of Ghana to accept new technologies hinders the development of ICT based as well as digital libraries. A respondent maintained that *"The fear of the unknown as a result of the adoption of technology is also greatly affecting GLB"*.

DISCUSSION OF FINDINGS

GLB has taken the initial important steps in the adoption of technologies in order to increase their access to information. In confirmation the key purpose of any library is to provide a quality service: access to relevant information (Buckland, 1992), to computers, information networks and software applications. Libraries as institutions are established

to take care of the information need of students, lecturers, researchers and other community of scholars. Their mission is providing quality information service and knowledge products (print and electronic) to resident community of scholars. These technologies are making it possible for libraries to provide a variety of library and information services to clientele. Academic libraries have enjoyed the availability and use of information and communication technology through the DANIDA sponsored project under the auspices of the International Federation of Library Association-Africa branch. The six universities were networked under this project and this made communication very easy and document delivery possible among the academic librarians in the six university libraries even though it is currently facing some difficulties. However, there is need to continually address the socioeconomic challenges of technology adoption, explore private public partnership in addressing the remodeling of technology systems in libraries, establish structures that facilitate research into techniques and technologies that promote access to technologies. Technologies provide opportunities for library users to enhance their learning and to provide access to information for personal development. Technologies are a powerful tool that supports inclusive education to library users. They enable users to overcome the traditional barriers, such as mobility and geographic distance, to information. Plans are under way to set up an e-library system. This system will provide internet service points all over the libraries users where any users can easily access it (it is not certain whether these Internet service point will also cater for users). They intend to run fibre optics. The e-library will also be able to do video streaming, Pod casting etc. Technology encompass a range of rapidly evolving tools and they include (telephony, cable, satellite, TV and radio, computer-mediated conferencing, video conferencing) as well as digital technologies (computers, information networks (internet, World Wide Web, intranets and extranets) and software applications (Chisenga, 2006).

In support of the findings as presented, several studies have pointed to the relevance of technology libraries all over. A report prepared by the Canadian Association of Research Libraries (CARL) revealed that in the year 2000/2001, academic libraries subscribed to 436,731 electronic journals. The same report also states that librarians are leaders in using technology to transform traditional library resources and services to meet the challenge of the 21st Century. Academic libraries in Africa do not enjoy the same information delivery methods like those in developed countries except those in Southern Africa. Chisenga and Rorissa (2001) point out the great disparity in the adoption and use of technologies in academic libraries. Waiganjo (2006) writing from Kenya states that academic libraries in Kenya suffer poor funding, poor communication system and lack of technologically qualified librarians. The case is not different in Uganda. Magara (2002) pointed out that power unreliability, management attitude and poor ICT skill of the librarians; Adeya (2007, 2002) writing from Botswana states that inadequate computerization, inadequate infrastructure and inadequate human capacity as the major challenges towards ICT use. Rosenberg (2005) eludes the challenges to ICT use to lack of library software standardization

Chia, Lee and Yeo (1998) report that a committee was set up by the government and mandated to design an information technology plan for the nation. The National Library of Singapore on its part took an initiative in ensuring all libraries especially academic libraries are ICT based. In Saudi Arabia, Siddique (1997) carried out a study on the use of ICT in academic libraries and the finding reveals that out of the six universities surveyed majority of the libraries had Internet, one kind of library software or the other, CD-ROM facility, OPAC services, FAX and E-mail services. It is eight years since Siddique carried out this study and if the same study were to be carried out today; the findings would be totally different.

Technologies enhance service provision to library clientele. Librarians use ICTs to perform functions like cataloguing and classification, serials management, collection management, budgeting, circulation management, referencing, indexing and abstracting in order to improve information services to library users. It is always important to consider the ease with which an individual can adopt a new technology. Drawing strength from the questions as to whether they have you been trained to manage any technology and whether they still require some training with respect to adopting any technology. It was revealed that Perceived Ease of Use is very relevant to the employees of GLB. Most of them indicated that a lot more has to be done with respect to training so as to ensure quick and stress free adoption. Perceived Ease of Use (PEOU) is an individual's assessment of the extent to which interaction with a specific technology is free of mental effort (Davis 1989). Davis (1989) argued that self-efficacy is one of the means by which PEOU influences behaviour. Applied to technology adoption, an easy-to-use technological device removes the cognitive impediments to getting information through the device. Thus, the consumer develops a perception of having 'some' control over the mobile device. This perceived ease of use also influences the consumer's perceived usefulness of the mobile device. In evaluation of the conceptual framework, it can be said that the acceptance level of any technology is fundamentally affected by the user's perception of ease of use and usefulness (Ajzen and Fishbein 1980). TAM suggests that user adoption of a new technology is determined by the user's intention to use the technology, which in turn is determined by the user's beliefs about the technology. Extant research explains that TAM has proved that increasing the perceived ease of use (PEOU) of a technology will increase its perceived usefulness (PU), and translate into an increased behavioural intention (BI), thereby resulting in a higher margin of technology acceptance (Wu and Wang 2005). Therefore TAM as adopted is useful in predicting user's intention to adopt new services and applications.

V. SUMMARY, CONCLUSION AND RECOMMENDATIONS

The library field has been facing negligence from the very beginning of library movement in Ghana. The librarian and the concerned personnel do not get their legal status and facilities. For this reason, they are not active in their field. This problem impedes the gradual development of libraries in

Ghana. In this age of technology, library services should be redesigned to meet the users' needs and to provide modern information services facilitated by ICT. As libraries in developed countries have introduced lot ICT facilities to its users, now this is the time for the developing countries' libraries to follow the developed countries and adopt new technological facilities. The main objective of this study was to assess the extent to which technologies were being used by GLB. The study has established that a wide range of technologies were being used by GLB. Most of the respondents were aware of the available technologies and were using them for their despite the challenges. In reference to the research gaps highlighted in the introduction of the paper, the study has generated valuable insights and lessons for research and practice. In using TAM to understand the factors which influence adoption, the findings tend not to be far from that of previous research on technology adoption (Kamel and Hassan 2003; Bhatti 2007). There is evidence to suggest the effect of PU and PEOU on the intention to adopt technology. Wu and Wang (2005) considered the adoption cost as essential in library settings and also as having a significant influence on perceived usefulness and ease of use. Thus, the development of strategies of technology adoption should consider the cost of acquisition and usability for those at the 'bottom of the pyramid' which also represents a significant market size (Duncombe and Boateng, 2009).

RECOMMENDATIONS

First, the Government of Ghana as well as other government's agencies such as GETFUND should allocate sufficient funds to support the purchasing and maintenance of ICT based system by libraries. Second, Management of GLB should introduce different types of training programs for unskilled library professionals. The training programs should include basic things such as cataloging (both manual and electronic), classification, bibliography, indexing and abstracting, electronic information delivery, public relation, email, internet, so that the unskilled library professional can handle information efficiently. They should also organize seminars, workshops, etc. to create awareness among librarians about the current development and technologies in library field. Also, the government can open library and information science department in different government and private colleges and universities to build up more efficient library professionals. It may be noted that only two government universities are offering the library and information science course (both under graduate and graduate degree). Other recommendations included the need to increase the number of technologies; the need to install latest versions of software; regular repairs and maintenance of technologies; improving Internet connectivity; increase accessibility to the library; improve awareness of available technologies; improve storage facilities; spread the access points across all libraries.

REFERENCES

[1] Abels, E. G., Kantor, P. B. and Saracevic, T. (1996). Studying the cost and value of library and information services: applying functional cost analysis to the library in transition. Journal of American Society of Information Science, Vol. 47 No.., 217-27.

[2] Ahmed, S. M. Z. (1998). Library automation in Bangladesh: problems and prospects. Bangladesh Journal of Library and Information Science, 1 (1), 39-46

[3] Ajayi, G. O. (2002). Information age virtual technology-opportunities and challenges to Africa. Paper presented at: UNESCO National Workshop on the Pilot Virtual University Laboratory Project, the Obafemi Awolowo University, Ile-Ife A, 9-12 September.

[4] Blurton, C. (1999). New directions in education. In: UNESCO's World communication and information 1999-2000. Paris: UNESCO: 46-61

[5] Chia, L. T, Lee, B. S., &Yeo, C. K. (1998). Information Technology and the Internet: The Singapore experience. Information Technology for Development 8(2/1998):101-120

[6] Chisenga, J. (2006). Information and communication Technologies: Opportunities and Challenges For National and University Libraries in Eastern, Central and Southern Africa. Keynote paper presented at the standing conference of African National and University libraries of Eastern, Central and Southern Africa (SCANUL-ECS), The courtyard Hotel, Dar es Salaam, Tanzania, 9-10 July 2006

[7] Chisenga, J. (2004).The Use of ICTs in African Public Libraries: A Survey of Ten Countries in Anglophone Africa. Oxford: International network for the availability of Scientific Publications (INASP).

[8] Chisenga, J & Rorissa, A. (2001). Libraries and ICT:a review of global trends and the state of the art in Africa. Paper prepared for the second meeting of the (CODI), Addis Ababa, Ethiopia, 4-7 September.

[9] Chuene, M. M. (2002).The effect of Information Technology on Library Acquisition: Experiences at the University of North, South Africa. African journal of Library, archives and Information Science 11.1:25-38.

[10] Dunmill, M. and Arslangaic, A. (2006). ICT in Arts Education. Literature Review. New Zealand, University of Canterbury.

[11] Gallimore, A. (1996). A public library IT strategy for the millennium. Journal of Libraryianship and Information Science. Vol. 28 No. 3, 149-57.

[12] Gardner, B. (1994). Ensuring Successful Information Technology Utilisation in Developing Countries. Garborone: Botswana (Pty) Limited, Botswana, 12-20.

[13] Haliso, Y. (2007). Internet availability and use in academic libraries in south west Nigeria. Babcock Journal of Management and Social Science, Vol.5 No.2.January 2007 Special Edition.pp:246-261.

[14] Islam, M. S, and Islam, M. N. (2007). Use of ICT in Libraries: An Empirical Study of Selected Libraries in Bangladesh. Library Philosophy and Practice, available at http://todde.anadolu.edu.tr/tojde21/articles/islam.htm, accessed June 2010.

[15] Mphidi, H. (2004). Digital Divide or Digital Exclusion? The Role of Libraries in Bridging the Digital Divide. Conference imparted LIASA Seventh Annual Conference. Pretoria: LIASA.Retrieved January 11th 2007 from:

http://www.liasa.org,.za/conference/conference2004/pape rs/LISA_conferene_2004_Mp

[16] Obajemu, A.S. and Ibegwam, A. (2006). A Survey of Librarians' Attitudes to Training Programmes on ICT application to Cataloguing and Classification Workshops in Nigeria. African Journal of Library, Archives and Information Science 6.1:19-271.

[17] Odedra, M. (1992). Enforcement of Foreign Technology on Africa: Its Effect on Society and the Use of Information Technology. African Technology Forum, August/September, 18-22.

[18] Okiy, R. B. (2005). Strengthening Information Provision in Nigerian university Libraries through Information communication technologies. The Electronic Library 23.3: 311-318.

[19] Omolayole, O. O. (2002). Electronic Services in Nigerian Libraries. A Key Note Address presented at the Ogun State Chapter of the Nigerian Library Association.

[20] Omoniwa, M. A. (2001).The Computerization of the Kashim Ibrahim Library of Ahmadu Bello University, Zaria 1972-2001.Nigerian Libraries 35.1:15-22.

[21] Roknuzzaman, M. (2006). A Survey of Internet Access in a Large Public University in Bangladesh. International Journal of Education and Development using ICT, Vol. 3 No. 2.

[22] Rosenberg, D. (1998). Information Technology and University Libraries in Africa, Internet Research. Electronic Networking Application and Policy 89.1:5-13.

[23] Rosenberg, D. (2005).Towards the Digital Library: Findings of an Investigation to Establish the Current Status of University Libraries in Africa. Oxford: International Network for the Availability of Scientific Publications. Available http://www.inasp.info/pubs/INASPdigitallib.pdf (Accessed June 30, 2013)

[24] Sani, A. and Tiamiyu, M. (2005).Evaluation of Automated Services in Nigerian Universities. The Electronic Library.23.3:274-288.

[25] Siddiqui, M. A. (1997). The Use of Information Technology in Academic Libraries in Saudi Arabia. Journal of Librarianship and information Science. 29.4:195 – 204.

[26] Siddike, M. A. K., Munshi M. N. and Sayeed M. A. (2011). The Adoption of Information and Communication Technology (ICT) in the University Libraries of Bangladesh: An Exploratory Study. International Seminar "Vision 2021": the role of libraries for building digital Bangladesh" Library Association of Bangladesh.

[27] Shuva, N.Z. (2005). Implementing information and communication technology in public libraries in Bangladesh. The International Information and Library Review, 37,159-168.

[28] Stephen, R. B. (1995). Information and Records Management: Document Based Information System: 4th edition Glencoe New York: McGraw Hill.

[29] Tully, C. J. (2003). Growing Up in Technological Worlds: How Modern Technoloactogies Shape the Everyday Lives of Young People. Bulletin of Science, Technology and Society. 23.6: 444-456.

[30] Wolpert, A. (1999). Services to Remote Users: Marketing the Library's Role. Library Trends 47.1:.34.

[31] Youngman, D. (1999). Library Staffing Considerations in the Age of Technology. Basic Elements for Managing Change.