

Limitations of knowledge sharing in academia. A case from Nigeria

Oluwaseyitanfunmi Osunade, Oluwaseun Foluso Phillips and Oluwasesin Ojo

Introduction

In Nigeria, the most highly populated country in Africa, are over sixty-five tertiary institutions exist, such as colleges of education, polytechnics, and universities, financed by either private or public funds.

The educational system in Nigeria faces many challenges. For instance, prohibitive expenses of books and computers have led to a reduced interest in academic pursuits, which in turn has led to poor teaching and research. However, the return to democracy in 1999, supplemented by a policy document on Information and Communication Technology (ICT) and liberation of the telecommunications industry led to an Internet revolution in the year 2000: many Nigerians gained access to the Internet through cybercafés. Academic institutions started investing in the provision of Internet facilities on their campuses to enhance teaching and research activities of the academic staff, and email significantly improved communications possibilities.

As a result, the educational system is being revived: the Internet has provided academics with a low cost method of obtaining and accessing information, and email has introduced a reliable means of communication. However, despite the fast and low-costs distribution possibilities provided by these tools, very few academics have taken advantage of this potential to share local and indigenous research results with the outside world. As a result, potentially valuable information in terms of product design and policy development, deriving from Nigerian research outcomes, remains hidden for local development, as well as for the wider global academic community.

This study seeks to identify how academics use the Internet and to determine which factors hinder their productive use of it to support their research activities.

Literature Review

Knowledge management refers to a systemic and organizationally specified process for acquiring, organizing and communicating both tacit and explicit knowledge of employees so that other employees may make use of it to be more effective and productive in their work (Alavi and Leidner 1999). Davenport and Prusak (1998) describe knowledge management as involving organizational, human and technical issues while Dieng et al (1999) further introduce financial, economic and legal factors as related to knowledge management.

Allee (2001) introduces a knowledge management model comprising 12 principles, which shows that knowledge varies based on data and information available, gains its value from its currency and by being communicated. As such, knowledge sharing is a crucial component of knowledge management in terms of organizational success.

There are differing views on the role of information technology (IT) in knowledge management. Carter (2000) believes technology is critical to knowledge management while others such as Hull (2000) and Scarbrough and Swan (2001) are of the opinion that IT plays a complementary role. Allee (2001) identifies technology in the form of information systems, databases, communication technologies and email as a veritable means of managing and sharing knowledge.

Indeed, IT has revolutionized the use of data, information and knowledge by academics in research and teaching. The Internet and its services such as e-mail, search engines, web casts, blogs and chat have provided academics with tools to access and manage information, so as to more effectively develop and communicate knowledge. In Africa several initiatives are aimed at knowledge sharing among academics, such as the Academy of African University's (AAU) Roster of African Professionals (ROAP), AAU Database of African Thesis and Dissertation (DATAD) and Global Development Network (GDNET). Tertiary institutions in Africa have invested in IT infrastructure especially the Internet so as to provide academics with access to services such as online or virtual libraries, online publications databases and effective communication with email and chat facilities.

So far, however, the response has been low. 'Brain drain', or the emigration of African professionals to the West, has led to a reduction in the availability of skilled IT experts, which in turn has contributed to a lack of enabling environment, high running and subscription costs, lack of incentives to attract potential users, poor quality of service of the Internet and failure to deal with regulatory issues on tools such as Voice over Internet Protocol (VoIP) (Intsiful *et al.* 2003).

In Nigeria the use of Internet by academics has been studied by Ehikhamenor (2003), Aduwa-Ogiegbaen (2005), Adogbeji and Toyo (2006) and Ureigho *et al.* (2006). A survey of academic staff of selected disciplines in 10 Nigerian universities (Ehikhamenor 2005) identified that scientists are still heavily dependent on printed information sources, especially journals, indexes and abstracts. The study reveals that 64.4% of them have a computer at their disposal, while 50.4% have access to, and are using, the Internet. Besides e-mail, very little use is made of other Internet facilities. Where Internet is not used, this is largely attributable to problems of accessibility, ease of use and cost. Most of the non-users are aware of the information and communication potential of the Internet in their disciplines, and believe that the Internet will become indispensable in their research in the future. Another recent study (Aduwa-Ogiegbaen 2005) into the Internet usage among faculty members at the University of Benin, Benin City (Nigeria) showed that Internet was most widely used as a resource towards writing journal articles, publication, searching for relevant instructional materials and accessing reference materials. The data did not find any significant differences between male and female Internet usage. At the Delta State University, Abraka faculty members were encouraged to use the Internet by the University policy on academic qualifications and publications (Adogbeji and Toyo

2006). The faculty members surveyed stated that they find the Internet useful, access it mainly in cybercafés, use it primarily to search for information and to communicate via e-mail. Last, an impact evaluation (Ureigho *et al.* 2006) of Internet usage among students and staff at the Delta State Polytechnic indicated that online chatting ranked first, e-mail second and search for materials was third. Recommendations for enhancing impact included formal training on use of the Internet and the provisioning of effective Internet tools.

[For more on the use of Internet in Nigeria, see Ajayi *et al.* 2001, Tihamiyu *et al.* 2002, Jagboro 2003, Igun 2005, Esharenana *et al.* 2005, Ajuwon 2006 and Nworah 2006.]

Use of Internet among Nigerian academics

This study was carried out in March 2007 at the University of Ibadan, Nigeria, during a regional ICT training.

Methodology

One hundred participants participated in the training, selected from disciplines in the arts, humanities, social sciences, medical science and journalism. Participants came from tertiary institutions located in the southwestern part of Nigeria.

The study was conducted using quantitative analysis, in which a questionnaire comprising 30 questions was applied to determine how academics use ICT and Internet services such as e-mail, search engines, blogs, mailing lists and online databases for knowledge sharing and collaboration. The questionnaire was administered before the start of the computer training session and provided a 100% response rate.

The data collected with the questionnaire were entered into the Statistical Package for Social Scientist (SPSS) and analyzed.

Results and analysis

Results are derived from the 100 participants – 66 male and 34 female – of a computer training programme. The participants represent the different types of tertiary institutions in Nigeria, both public and private tertiary institutions, such as colleges of education, an institute of journalism, polytechnics and universities. These institutes are located in the southwestern states of Kwara, Ogun, Ondo, Osun, Lagos and Ekiti.

Table 1. Respondents' information

Items	Responses	Frequency	Percentage (%)
Gender	Female	34	34
	Male	66	66
Institution	College	15	15
	Polytechnic	19	19
	University	58	58
	Others	8	8
Have a PC/Laptop	Yes	58	58
	No	36	36

	Both	6	6
Use Internet	Yes	100	100
	No	0	0
Computer Training	Yes	63	63
	No	37	37

All respondents indicate that they use the Internet, while 37% of them have had no computer training. The outcomes further show (see table 2) that few respondents use the Internet and its service towards their academic ventures: mailing lists and chat were used by only 13% respectively 19% of the respondents.

Table 2. Use of Internet Services

Items	Responses	Frequency	Percentage (%)
Browsing place(s)	Office	26	26
	Cybercafe	74	74
	Home	0	0
	Others	0	0
Email	Yahoo	79	79
	Hotmail	2	2
	Gmail	14	14
	Others	0	0
	None	5	5
Chatting	Yes	19	19
	No	81	81
Mailing list	Yes	13	13
	No	87	87
Online Survey	Yes	0	0
	No	100	100
Personal webpage	Yes	0	0
	No	100	100
Articles published online	Yes	7	7
	No	93	93
Thesis hosted online	Yes	0	0
	No	100	100

Responses showed Internet usage as comprising less than four hour per week for a vast majority, versus almost 25% who spend five hours or more on the Internet (see figure 1). In terms of search engines used, a vast majority preferred Google (87%), versus Yahoo (10%), Alta Vista (2%) and MSN (1%).

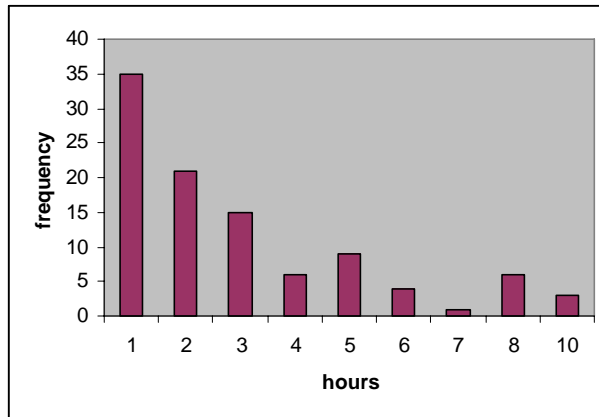


Figure 1. Number of hours spent on the Internet per week

The questionnaire identified which factors have the most effect in terms of Internet usage. The presence of electricity proved to be an important factor, followed by the degree to which it fulfills communication needs and supports research activities (see table 3).

Table 3. Factors identified as affecting the use of the Internet

Importance:	low	average	high	don't know
Electricity available	0	6	94	0
ICT skills available	7	77	16	0
ICT training completed	6	76	15	3
Funds available/cost factor	2	78	19	1
Assistance available from ICT experts	10	13	62	15
Time available	19	71	6	4
Functional Internet infrastructure present	10	61	28	1
Addresses research needs	14	18	68	0
Addresses communication needs	0	10	85	5
Others	0	43	32	5

Analysis of results

- *Internet usage:* The results showed that academics do indeed use the Internet in support of their professional ventures, albeit marginal in terms of time (mostly less than 4 hours per week). As such, most usage is limited to checking e-mail and searching for information. Knowledge sharing and collaboration purposes are neglected, as activities such as developing or maintaining a personal web page cannot be done in such limited time.
- *Access:* Cybercafes are a popular source of access to the Internet in Nigeria (used by 74% of respondents) even among academics, most of whom (64%) have their own computers and/or laptops.
- *Computer skills:* All (100%) respondents indicate they use the Internet, but just over a third (37%) had participated in formal training on how to use computer applications or the Internet. This leads to two insights, first, users do not necessarily need ICT training for basic usage, but second, they lack necessary

information and skills to fully address their formal academic needs and are not making optimal use of these tools.

- *Services:* Email is a popular means of communication among academics. Yahoo's web-based email service is attractive because of its speed, popularity, add-on features and trendy design. Personal web pages are not used, nor are theses hosted online. Occasionally, articles are published in online journals (7%), but these are not recognized by tertiary institutions in Nigeria.
- *Search tools and skills:* Google is the search engine of choice for academics because it is simple, fast and gives useful results. However, search skills are limited; for instance, none of the respondents had previously used the Google search engine for academics (<http://scholar.google.com>) until its introduction in the course. This would imply that access to online research is limited, because the Google search engine is not specific in its results.
- *Restrictive/conducive factors:* Diverse factors affect the use of the Internet and its services.
 - A reliable supply of electricity is a very important influence, because of the persistent power failure and prohibitive cost of alternative power sources in Nigeria.
 - A lack of formal training in terms of computer or Internet skills does not appear to be overly restrictive in terms of people's willingness to use ICTs, but usage is based on trial and error, adversely affecting the potential which ICTs hold for academic activities. This can be countered by the assistance of computer experts (62%).
 - Although (lack of) time does not appear to be a significant barrier to the use of the Internet and its services in academic environments according to the respondents, they spend little time using the Internet. The reason for this discrepancy remains to be analyzed.
- *Academic needs:* A major motivator for using the Internet is its ability to support research: academics indicate they find it easier to locate relevant information on the Internet than in the library. Email proved a further motivator for most academics to use the Internet, in many cases proving the initial attraction to using ICTs in support of academic activities, because its reliability and speed solved many communication problems. Thus, most academics use the Internet because of its communication services. Other than tertiary institution admission processing, reasons stated by respondents for their use of Internet are predominantly for private use, such as football information, visa processing, and religious information.

Conclusion

The Internet and its services have boosted the level of information, knowledge and opportunities available to Nigerian academics. Analysis of its use however indicates that only generic services and applications such as e-mail, search engines and World Wide Web are, as of yet, widely used. The use of the Internet for knowledge sharing and collaboration through interactive services such as blogs, web sites, mailing lists and videoconferencing is still very limited in Nigeria.

Overall, it appears that academics are inconsistent and sometimes insufficiently skilled to fully harness the potential of the Internet in support of their work; moreover, they often lack supporting infrastructures such as electricity. Restrictive university policies on information and communication technologies also prove prohibitive for academics to reap the benefits of the Internet for their work.

In order to stimulate more knowledge sharing and collaboration among academics in Nigeria, these factors will need to be addressed, disclosing a world of knowledge to Nigerian academics, and making their work more visible to the rest of the world.

References

- Adogbeji, O. B. and O. D. Toyo (2006) The Impact of the Internet on Research: the Experience of Delta State University, Nigeria. *Library Philosophy and Practice* Vol. 8, No. 2 (Spring 2006)
- Aduwa-Ogiegbaen, S. E.O and I. Stella (2005) Extent of faculty members' use of internet in the University of Benin, Nigeria. *Journal of Instructional Psychology* Vol.32 (4): 269-276
- Alavi, M. and D. Leidner (1999) *Knowledge Management Systems: Emerging Views and Practices from the Field*. Proceedings of the 32nd Hawaii International Conference on System Sciences
- Allee, V. (2001) The new business and knowledge management fundamentals. Adapted from New Business Fundamentals Perspectives newsletter. ASTD Mt. Diablo Chapter, August 2001. Retrieved from <http://www.vernaallee.com>
- Ajayi, A., W.M. Olatokun and M.A. Tiamiyu (2001) Computer anxiety, phobia, obsession and work stress at the University of Ibadan, Nigeria: Part 1 – prevalence and correlates. *African Journal of Library, Archives & Information Science*, Vol. 11(2): 125-38
- Ajuwon, G. A. (2006) *Use of the Internet for health information by physicians for patient care in a teaching hospital in Ibadan, Nigeria*. Available at <http://www.biodiglib.com/content/3/1/12>
- Carter, B. (2000) The experts' opinion: Knowledge management. *Journal of database Management* 11(1): 42-43.
- Davenport, T.H. and L. Prusak (1998) *Working knowledge: How organizations manage what they know*. Harvard Business School Press: Boston, Mass.
- Ehikhamenor, F. A. (2003) Internet facilities: use and non-use by Nigerian university scientists. *Journal of Information Science* Vol. 29(1): 35-48

Esharenana, E. A., O.A. Benson and A.A. Oduwole (2005) The use of internet service providers by cybercafés in Nigeria: an update. *The Electronic Library* Vol. 23(5): 567-576

Hull, R. (2000) Knowledge management and the conduct of expert labour, in H. Willmott (Ed.) *Managing Knowledge*: 49-68. Macmillan Press: Houndmills, Basingstoke

Igun, S. E. 2005. Users and Internet Skills: A Report from Delta State University, Abraka, Nigeria. *Electronic Journal of Academic and Special Librarianship* v.6 no.3 Available at http://southernlibrarianship.icaap.org/content/v06n03/igun_s01.htm

Intsiful, J., P.F. Okyere and S. Osae (2003) *Use of ICT for Education, research and Development in Ghana: Challenges, Opportunities and Potentials*. 2003 Roundtable on Developing Countries Access to Scientific Knowledge. The Abdul Salam ICTP Trieste, Italy.

Jagboro, K.O. (2003). *A study of Internet usage in Nigerian Universities: A case study of Obafemi Awolowo University, Ile-Ife, Nigeria*. Available at http://www.firstmonday.org/issues/issue8_2/jagboro/index.html

Scarborough, H and J. Swan (2001) Explaining the diffusion of knowledge management: the role of fashion. *British Journal of Management*, Vol. 1(2): 113-122

Nworah, U. (2006) *The Impact of the Internet on Journalism Practice in Nigeria*. Available at <http://www.nathanieltturner.com/journalisminnigeria.htm>

Tiamiyu, M.A., A. Ajayi and W.M. Olatokun (2002) Computer anxiety, phobia, obsession and work stress at the University of Ibadan, Nigeria: Part 2 – evaluation of a model. *African Journal of Library, Archives & Information Science*, Vol. 12(1): 1–14

Ureigho, R. J., G.U. Oroke and G.O. Ekruyota (2006) The Impact of Internet Usage: A case study of Delta State (Nigeria) tertiary institutions. *Scientific Research and Essay* Vol. 1(2): 54-56.

Abstract

Academics in Africa are increasingly embracing the Internet as a tool to support their work because of its potential to provide, manage and store information. This contributes to the development potential of the continent. The continuous emergence of new applications has given academics more opportunities to improve productivity through collaboration and knowledge sharing. Research shows however that these new applications are not popular among African academics. In this study, academics in the southwestern part of Nigeria were asked how and why they utilized Internet services such as email, search engines, messaging, blogs, videoconferencing, online communities, mailing lists, and online databases. The results indicate that academics do use the Internet towards their research activities, but knowledge sharing and collaboration activities are neglected.

About the Authors

Oluwaseyitanfunmi Osunade is a doctoral candidate in Computer Science at the University of Ibadan, Nigeria. He obtained his first and second degrees at the Obafemi Awolowo University, Ile-Ife, Nigeria in Computer Engineering and Computer Science. He has an MBA from the Federal University of Technology, Akure, Nigeria. His research interests include computer education, data communications and networking, mobile agents and information and communication technologies for development.

Oluwaseyitanfunmi Osunade, Dept of Computer Science, University of Ibadan, Nigeria, Email: seyitan@hotmail.com.

Oluwaseun Foluso Phillips is an assistant lecturer at the Ladoke Akintola University of Technology, Ogbomoso. She obtained her first degree in Demography and Social Statistics at the Obafemi Awolowo University, Ile-Ife in 1998 and masters in Sociology at the University of Ibadan in 2002. Her interests include gender use of technology and girl-child education.

Oluwaseun Foluso Phillips, Dept. of General Studies, Ladoke Akintola University, Ogbomoso, Nigeria
Email: folusophillips@yahoo.com

Oluwasesin Ojo is a Faculty Officer at the Ajayi Crowther University, Oyo. She has a first and second degree in Sociology from the Obafemi Awolowo University, Ile-Ife in 1998 and University of Ibadan in 2003 respectively. Her interests include impact of information and communication technologies on human development.

Oluwasesin Ojo, Ajayi Crowther University, Oyo, Nigeria, Email: gbengasesin@yahoo.com.