Summer 1-5-2024

A Survey of Library Service Delivery in an Age of Internet in Mountain Top University

Eunice Oluwayemisi Oloyede Dr
oluwayemisi_adebayo@yahoo.com

Aderonke Ayobami Ogungbade Miss
aderonkeayobami3@gmail.com

Opene Sunday Ozonuwe Mr
opozonuwe@gmail.com

A Survey of Library Service Delivery in an Age of Internet in Mountain Top University

Oloyede Oluwayemisi Eunice (CLN) [1]
Mountain Top University, Kilometre 12, Lagos-Ibadan Expressway, Ibafo, Ogun State, Nigeria.
ooloyede@mtu,edu.ng
+234(0)8164371090; 234(0)8033797490

Ogungbade Aderonke Ayobami (CLN) [2]
Mountain Top University, Kilometre 12, Lagos-Ibadan Expressway, Ibafo, Ogun State, Nigeria.
aderonkeayobami3@gmail.com
+234 8131012791

&

Ozonuwe Opene Sunday (CLN) [3]
Crawford University Library, P.M.B. 2001, Faith City, Igbesa, Ogun State, Nigeria.
opozonuwe@gmail.com
+234 7067317673

Modern information technology has led to significant changes in how libraries operate. This study examined how libraries services are provided in the age of internet in Mountain Top University Library. It adopted a descriptive survey method and 200 participants were chosen at random for the study. A structured questionnaire were used to collect data from the sampled population. Data analysis was done using SPSS, and the results were presented in percentage and frequency table. The study found that majority of the respondents 192(96%) agreed that electronic mail (e-mail) were available in the library, 187(93.5%) agreed that circulation service were available, 157(78.5%) disagreed that bibliographic service was available. While 88(44%) strongly agreed that high cost of connectivity and maintenance is a factor militating against the effective application of internet service. It was recommended that this should be addressed by the University Management to ensure massive adoption of internet usage in the library.

Keywords: Service Delivery, Internet, Library Services, Information Technology, Library Staff, Library Patron

Introduction

It is common knowledge that libraries have undergone major change recently. Information and communication technology have changed how information services are delivered, which has

had an impact in library routines. Electronic form of communication are gradually replacing conventional techniques of information delivery. While ICT advancements and applications have improved and easier access to information and its distribution, they have also created new roles in information provision, preservation, dissemination and transfer. The librarians now performs a dynamic role rather than passive role. According to Haber (2011), while lending out books has been a stand-alone duty for libraries throughout the past few centuries, their services have changed with the digital age to accommodate their patrons' shifting requirements.

Academic libraries are still a part of this technological revolution in Nigeria. They are under constant pressure as information providers to deliver pertinent information to their immediate communities as ICT both facilitates and enforces change. According to Emezie and Nwaohiri (2013), who referenced Bales (1999), every library automation project whether it is an initial deployment or a migration, requires librarians and users to make a variety of adaptations. The interaction between people and technology is one important topic. To function well in an automated setting, however, librarians must adapt their ways of thinking and acting. This is due to the fact that academic libraries must include digital sources in order to maintain their position in the provision and dissemination of information. Nowadays, electronic information has become more preferred by students and faculty members than manually operated methods.

Students are now looking for alternate methods of learning, researching and studying as a result of the increased accessibility of digital information sources. The world has not rested since the introduction of the World Wide Web, search engines, internet browsers and internet-enabled gadgets like laptops and cell phones. As a result, majority of librarians are worried that Internet and Google will be a challenge to their profession. Libraries in African nations are now less important and used as a result of digital technologies. Patrons, particularly those in academic settings, no longer rely on the library as a crucial component of their learning and research; instead, they are starting to view it as one of the amenities any university or college ought to have. Nonetheless, the 21st Century librarians must understand the changing roles of libraries and reposition themselves to excel in the creation, provision and dissemination of information. Without the librarians, who are the human resources that determine the effectiveness of service delivery, the library cannot operate efficiently. In light of this, this study attempts survey library service delivery in an age of internet in mountain top university library

Nature of the 21st century

The twenty-first century is known as information millennium. It is also seen as the age of a boom in information sources and output. It is regarded as the start of the knowledge age. As a result, new types of work with new and varied abilities are needed, as well as new patterns of labor and professional processes. Knowledge has a different meaning in the twenty-first century. Knowledge is no longer just what is kept in the memory banks of experts, recorded in books or categorized according to disciplines. It is currently considered to be like an energy source, a system of networks and a force that causes events to occur. Change rather than stability is a given in the knowing era. Workers in the knowledge era must be quick to seek, evaluate and represent new information. They need to communicate this to others. They need to be adaptable, creative, innovative and be able to understand things as a system or big picture level.

The development of ICT has altered the function of the academic library in the twenty-first century. Information cannot be stored effectively in print mediums anymore. Today's standard practices include CD-ROM databases, electronic document delivery, automated cataloging, circulation systems and online information retrieval (OPAC). According to Byamugisha (2010), patrons now demand a wide range of automated push and/or pull services from libraries and from a distance, and their expectations for distance service delivery across all library services have grown. This is demonstrated by efforts to digitize library materials in order to meet the information needs of users from the new generation, or 21st-Century library users, who are very skilled in exploiting new sources, media and technology.

The major objective of the study is to investigate library service delivery in an age of Internet in Mountain Top University Library

Research Questions

1. What are the types of Internet services that is used for library service delivery in Mountain Top University?
2. What are the library services that Internet is applied for in Mountain Top University?

3. What are the factors that militate against the effective application of Internet services with respect to library services to patrons?

Literature Review

Library and Information Service Delivery: A View

A change in library and information services over the past few decades has had a big impact on human society globally. The information environment is rapidly evolving in the modern world. The effects of these modifications have a big impact on how users are given access to libraries and information services. The revolution benefited from the intervention of information and communication technology (ICT), which offers opportunities for information transmission to a wider audience independent of time and place. The use of ICTs provides an essential platform for increasing knowledge of, access to, and utilization of already-available resources. ICTs (information connection, dissemination, archiving, and management technologies) are a collection of various technical tools and resource sets (Pigato, 2004).

According to Ogar & Dushu (2018), ICT is the group of hardware and software used for creating, preparing, transferring and storing data via devices like computers, radios, televisions and other similar devices. ICT comprises a wide range of classic and contemporary media. Libraries and information services have undergone several periods of development. This is predicated on the premise that people, regardless of their ethnicity, religion, or region, develop at various rates in various countries. Among the early technologies include newspapers, books, photo albums, posters, theater, social interactions, markets and performances. They have been in use for several centuries claims (Obayelu & Oyunlade, 2006). After this, ICT peripherals became increasingly sophisticated. Radios, televisions, telegraphs, audio and video cassettes, films, and slides are a few examples. These technologies have been in use for a long time. Information and communication technology today provides services that are more advanced (ICT). This includes devices like computers, satellites, wireless phones (mobile), direct communication, e-mail, the web, internet services, video conferences, CDROMs, personal computers (PC), distance control systems, informational-geographical systems, global positioning systems (GPS), electronic cameras, databases, etc. The hidden concept behind these technologies is that they are not

automatically considered to be new, but their common and inexpensive availability has resulted in them being regarded as new.

The Concept of Internet

International network is referred to as Internet. In order to service billions of users worldwide, it is not a single network but rather a collection of computers connected through a system of connections and using the common Internet Protocol Suite (TCP/IP). The Internet was regarded as a practical instrument for managing information and providing global online services by Olayemi, Umar, Yemi-Peters, Sokari, and Haliru (2017). In a similar vein, Oketunji (2004) claims that the Internet provides us with access to a variety of knowledge as well as tools that make conducting research easier. The massive global network known as the Internet connects several local networks. It connects a vast number of Internet users and machines with various operating systems, sizes, and types. Another name for the Internet is the "virtual library". In addition to providing access to numerous libraries, it also provides websites with access to special interest areas.

Electronic Library Resources (e-Resources)

Libraries now deal with a growing number of electronic resources that can be used on computers and other similar hardware. Electronic library resources are computer-readable files, hence they take up less space than traditional library materials (Kenchakkanavar, 2014). Librarians should take precautions because computers come in a variety of shapes and sizes. The fact that computers and their parts are always changing constitutes severe threat on its own. The fact that computers are still developing and will do so as long as humans being strives for better ways to provide services. Majority of human activity in the twenty-first century is computer-based, claims Oshilalu (2011). This implied that technology, including computers and other components, would continue to pose a threat to everyone, not just librarians who fails to advance personally. Since staying current is expected of librarians. Individuals who choose not to develop personally will constantly be exposed to the risks associated with accessing electronic library resources and will ultimately come to regret their choice.

ICT and Libraries

In the current Information Communication Technology (ICT) era, libraries, which were previously only seen as locations to retain information and knowledge in paper form, have gained a new viewpoint (Ekwelem, 2019). With the use of ICT, task that were previously carried out manually in libraries with a high likelihood are now successfully done. Organization, management and other technical tasks for libraries have gotten simpler, allowing for more work to be done while having fun.

Internet Services and Resources Use for Services Delivery

Muzakkari (2002) defined internet resources as those that can be accessed online. The Internet provides a wide range of services and resources for the purpose of transferring information between computers on the network. According to Ikegwuiro (2017), there are around seven different types of resources on the Internet, including gopher, e-mail, telnet, chat and instant messaging, discussion groups, file transfer protocol, and the web. These elements are defined as being related to one another and in various phases of development. A user can find a specific document or information on a particular subject using the Internet's many search tools and apps. There are various search tools and applications, including search engines, meta-search engines, subject directories and others.

Application of Internet in Library Services

Almost every aspect of library activities is now available online. It is essential to know how library services are provided. The internet is transforming how libraries gather, handle and transfer information. A number of library services, such as membership signup, resource sharing, cataloging, circulation, interlibrary loans, reference services, current awareness services, document delivery and membership registration, can be delivered via the Internet. Library and information professionals have excellent opportunities to share information with their patrons because to Internet resources like e-mail and the web. ICT now makes it easier and more efficient to perform task that were formerly rigorous and stressful to complete manually in libraries.

The Internet is utilized in conjunction with the services of specialized libraries to ensure that information is provided immediately, properly and precisely. The Internet supports libraries' essential roles and services. Butt, Qutab & Mahmood (2011) reported that Internet is primarily

used in acquisition, classification and cataloguing, reference, document delivery, current awareness service, selective dissemination of information and interlibrary loan to improve service delivery and at the same time save time. Faboyinde (2006) asserts that Nigerian libraries' usage of the Internet reveals a comprehension of the crucial part the Internet plays in offering library services.

Satisfaction Derived in the Application of Internet Services to Library Services

New technologies have an impact on libraries on all fronts. Libraries and information services are increasingly using the Internet for information gathering, processing and distribution. Internet significantly influences how simple and feasible internet communication is. In wealthy countries, online library services provide clients with round-the-clock assistance. One of the many library websites that are linked to on the Internet and are reachable from anywhere in the globe covers almost every topic. Most tasks that were formerly extremely difficult or perhaps impossible to do are now successfully completed.

Osuala (2007) asserts that the Internet enables patrons to get appropriate answers to their inquiries in the shortest period of time and enable libraries to carry out their responsibilities more successfully and effectively. Online catalogs for both books and non-books are available from many libraries and viewing them are made easier and more convenient by having access to the Internet. Tens of thousands of Internet "home sites" are currently being used as informative resources by institutions and organizations (Osuala, 2007). Now that the majority of universities and research organizations throughout the world have websites, researchers can access published research from the past and present.

Impact of Electronic Service Delivery

E-services are designed to enable users to gain access to the information they require to develop their skills. E-services provide access to information on all of the services, collections, digital resources, and library classes. E-services provide remote access to library resources, service delivery and information generation as a part of their distinctive offers. Depending on the regulations or bylaws of the individual organizations, access may only be permitted for members or may only be limited to specific resources, such as commercial databases, where members must input a password to access them (Anyim, 2018).

All libraries continue to provide the usual information services while progressively including elements for remote electronic access. One of these options is Web-OPAC (online public access catalogue), which users can access from any location, including from a computer connected to the internet or from the library website. It then became possible to link full-text documents using bibliographic information as a result. Anyone with access to bibliographic information in this fashion, including users, educators, students and researchers, can carry out additional searches using particular keywords, subjects, authors, titles or places. It is then possible to create a bibliographic framework using predetermined criteria (Eserada & Okolo, 2019).

Information Service Delivery

Information service delivery is essentially refers to how information professionals interact with and behave toward users, co-workers, organizations and society as a whole. There are possibilities and problems that have an impact on the delivery of goods and services as a result of current trends and professional growth. Information service delivery, as noted by Omekwu (2006), is intended to serve organizations, institutions and researchers by enabling access to a library's wide array of information resources. He added that the practitioners are expected to improve their competency skills, knowledge and attitudes to enable them to give acceptable information services in order to prepare for the demands of their work.

The efficient supply of high-quality user service, as well as the recognition and careful adaption of measures in the provision of library and information services capable of satisfying societal needs, are requirements for any library's efficacy and relevance (Eje and Dushu, 2018). This is especially true in light of the topic at hand and the rate at which technology is evolving globally right now. By ensuring fairness, justice and equity in the delivery of services, professionals can fulfill their commitments to patrons, coworkers and society.

Methodology

A descriptive study was conducted, with systematic random sampling method employed and 200 respondents were sampled with structured questionnaires on both the staff and patrons of Mountain Top University Library

Results

Socio Demographic Factors

Sex	Responses	Percentage
Male	78	39%
Female	122	61%
Total	200	100%
Age		
Below 20	129	64.5%
21-25	51	25.5%
26-30	16	8%
Above 30	4	2%
Total	200	100%
Distribution of respondents by category		
Library staff	6	3%
Library patron	194	97%
Total	200	100

The table above 78(39%) of the respondents were male while 122(61%) were female; 24(12%) of the respondents were below 20 years of age, 51(25.5%) of the respondent were between 21-25 years of age, 16(8%) of the respondent were between 26-30 years of age, 9(4.5%) of the respondent were above 30 years.; 6(3%) of the respondents were library staff while 94(97%) were library patron.

Internet Services

S/N	Internet Services	Yes	Percentage (%)	No	Percentage (%)
1	Electronic mail (email)	192	96%	8	4%
2	World Wide Web (www)	193	96.5%	7	3.5%
3	Internet chat	12	6%	188	44%
4	Internet telephone	2	1%	198	99%
5	E-library	197	98.5%	3	1.5%
6	Web 2.0	9	4.5%	191	95.5%
7	OPAC	171	85.5%	29	14.5%
8	Own website	6	3%	194	97%

In table above, it is revealed that 192(96%) agreed that Electronic mail (e-mail) is available, 193(96.5%) agreed that World Wide Web (www) is available in the library, 188(94%) said that internet chat is not available, 198(99%) said that Internet telephone is not available, 197(98.5%) agreed that E-library is available, 191(95.5%) of the respondents agreed that Web 2.0 is not available, 171(85.5%) agreed that OPAC is available while 194(97%) agreed that College website is available.

Library Services

S/N	Library services	Yes	Percentage (%)	No	Percentage (%)
1	Acquisition	167	83.5%	33	16.5%
2	Cataloguing and classification	173	86.5%	27	13.5%
3	Reference services	188	94%	12	6%
4	Current Awareness Services	109	54.5%	91	45.5%

5	Selective dissemination of Information	111	55.5%	89	44.5%
6	Inter-Library loan	77	38.5%	23	11.5%
7	Document Delivery	96	48%	4	2%
8	Circulation	187	93.5%	13	6.5%
9	Bibliographic Services	157	78.5%	43	21.5%

In the above table, it is revealed that 167(83.5%) said that Acquisition is not done in the library, 173(86.5%) agreed that Cataloguing and classification is been carried out in the library,188(94%) agreed that Reference service is available in the library, 109(54.5%) agreed that Current awareness service is not available, 111(55.5%) said that Selective dissemination of information is not available, 77(38.5%) said that Inter-library loan is not available, 96(48%) said that Document Delivery is not available while 187(93.5%) agreed that Circulation service is available, 157(78.5%) does not agree that Bibliographic service is available.

Factors militating against the effective application of internet services in library services in Mountain Top University library?

S/N	Factors affecting the effective application internet services	SA	%	A	%	U	%	D	%	SD	%
1	High cost of connectivity and maintenance	88	44%	26	13%	24	12%	22	11%	40	20%
2	Low bandwidth	36	18%	40	20%	34	17%	44	22%	46	23%
3	Poor funding of internet services	8	4%	18	9%	22	11%	30	15%	122	61%

4	Having problem with the browser e.g. poor connection	38	19%	24	12%	8	4%	86	43%	44	22%
5	Low level of computer literacy required for effective use	6	3%	18	9%	10	5%	104	52%	62	31%
6	Technology obsolescence	-	-	6	3%	4	2%	80	40%	110	53%
7	Lack of maintenance culture	22	11%	16	8%	2	1%	120	60%	40	20%

It was revealed that 44(22%) strongly agreed that high cost of connectivity and maintenance is a factor militating against the effective application of internet service, 23(11.5%) strongly disagreed that low bandwidth is a factor militating against the effective application of internet service, 61(30.5.5%) strongly disagreed that poor funding of internet services are is a factor militating against the effective application of internet service, 43(21.5%) disagreed that having problem with the browser e.g. poor connection is a factor militating against the effective application of internet service. 52(26%) disagreed, that low level of computer literacy required for effective use is a factor militating against the effective application of internet service, 55(27.5%) disagreed, that technology obsolescence is a factor militating against the effective application of internet service while 60(30%) agreed, that lack of maintenance culture is a factor militating against the effective application of internet service.

Discussion of Findings

It can be concluded from the finding that majority of the respondents 122(61%) were female; most of the respondent 51(25.5%) were between 21-25 years while majority 94(97%) were library patron. Majority of the respondents 192(96%) agreed that Electronic mail (e-mail) is available in the library, 193(96.5%) agreed that World Wide Web (www) is available. These were in agreement with the submission of Oketunji (2004) who stated that Internet gives us access to a vast wealth of knowledge access to tools and offers access to topics of special interest using

the web sites. Though 188(44%) agreed that internet chat was not available, 2(1%) also agreed that Internet telephone is not available but 197(98.5%) agreed that E-library is available which collaborated the finding of Faboyinde (2006), which stated that the use of the Internet in Nigerian libraries demonstrates an understanding of the important role the Internet plays in providing library services.

All the respondents 9(4.5%) agreed that Web 2.0 is not available, 171(85.5%) agreed that OPAC is available while 6(3%) agreed that College website is available so the College need to improve on the internet service offerings to the clienteles. The was in support of the view of Anyim {2018) which stated that access to online databases may only be available to members or may only be restricted to particular resources, such as commercial databases, where members must enter a password in order to access them, depending on the rules or bylaws of the respective organizations.

It was further shown that most of the respondents 167(83.5%) said that Acquisition is not done in the library, 173(86.5%) agreed that Cataloguing and classification is been carried out in the library, 188(94%) agreed that Reference service is available in the library, 109(54.5%) agreed that Current awareness service is not available, 111(55.5%) said that Selective dissemination of information is not available, 77(38.5%) said that Inter-library loan is not available, 96(48%) said that Document Delivery is not available while 187(93.5%) agreed that Circulation service is available, 157(78.5%) does not agree that Bibliographic service is available. All the listed were made possible through the availability of the internet which supports the claims of Ikegwuiro (2017) that the Internet's resources are roughly seven in number and including gopher, e-mail, telnet, chat and instant messaging, discussion groups, file transfer protocol and the world wide web. These components are described as being in various stages and interconnected with one another.

Finally, most respondents 88(44%) strongly agreed that high cost of connectivity and maintenance is a factor militating against the effective application of internet service, 46(23%) strongly disagreed that low bandwidth is a factor militating against the effective application of internet service, 122(61.5%) strongly disagreed that poor funding of internet service is a factor militating against the effective application of internet service, 86(43%) disagreed that having problem with the browser e.g. poor connection is a factor militating against the effective application of internet service. 104(52%) disagreed, that low level of computer literacy

required for effective use is a factor militating against the effective application of internet service, 110(53%) strongly disagreed, that technology obsolescence is a factor militating against the effective application of internet service while 120(60%) disagreed that lack of maintenance culture is a factor militating against the effective application of internet service.

Conclusion and Recommendations

Internet is the fulcrum of development in the society today; it is therefore not a gainsaying that any institutions that want to bring out proficient and excellent students' needs to inculcate and incorporates internet service delivery into its library services. The library management needs to proceed in internet service provision and creates more ways of training their staff and library patron on the maintenance and efficient usage of the internet services. Factor such as high cost of connectivity and maintenance is needed to be addressed by the college management and government of the day need to enact a favorable internet service cost regime that can leads to massive adoption of internet usage.

References

Agbaje, A.A. (2002). *Great expectations: serials management and information technology. Information Science and Technology for Library Schools in Africa*. Dirisu, Ibadan: Evi-Coleman Publications. 25-36.

Anyim, Wisdom O. (2018). E-Library resources and services: improvement and innovation of access and retrieval for effective research activities in university e-libraries in Kogi State Nigeria.*Library Philosophy and Practice (e-journal).* 1647. https://digitalcommons. unl.edu/libphilprac/1647

Butt, K., Qutab, S., & Mahmood, K. (2011). Access and use of the internet in the libraries of Lahore, Pakistan. *Chinese Librarianship: An International Electronic Journal,* 31 (1) 1-15

Byamugisha, H.M (2010). Digitizing library resources for new modes of information use in Uganda. *Library Management,* 31 (1 / 2): 42–56.

Eje, O. C. & Dushu, T. Y. (2018). Transforming library and information services delivery using innovation technologies. *Library Philosophy and Practice (e-journal).* 2036.

Ekwelem, C. N. (2019). Information communication technology (ict) and the future of library: a review of related literature. *Library Philosophy and Practice (e-journal).* 2232. https://digitalcommons.unl.edu/libphilprac/2232. Accessed 3rd November, 2022.

Emezie, N. & Nwaohiri, N. (2013). 21st Century librarians and effective information service delivery. *Journal of Information & Knowledge Management*, 4(3):1-14.

Eserada, R. E. & Okolo, S. E. (2019). Use of online public access catalogue (OPAC) in selected university libraries in South- South Nigeria. *Library Philosophy and Practice (e-journal).* 2586. https://digitalcommons.unl.edu/libphilprac/2586, Accessed 3rd November, 2022.

Faboyinde, E.O. (2006). The state of information and communication technology (ICT) in selected libraries in lagos and Ibadan Metropolis. Paper presented at the 44th Annual Conference And Annual General Meeting of the Nigerian Library Association, Abuja: 61-68.

Haber, Steve (2011). *The* changing role of libraries in the digital age. Available at: *https://www.huffpost.com/entry/the-changing-role-of-libr_b_803722.* Accessed 3rd November, 2022

Ikegwuiro, P. (2017). Application of Internet for services delivery in selected special libraries in Kaduna Metropolis. *European Scientific Journal, 13*(7). doi:10.19044/esj.2017.v/3n7p411. Accessed 10th November, 2022.

Kenchakkanavar, A. (2014). Types of e-resources and its utilities in library. *International Journal of Information Sources and Services International Peer reviewed Journal*, 1: 97-104.

Muzakkari B.A (2002) Know the Internet. Lagos: Smark, 1-10

Obayelu A., & Ogunlade I. (2006). Analysis of the uses of information and communications technology for gender empowerment and sustainable poverty alleviation in Nigeria*. Int. J. Educ. Dev., Pp. 6.*

Obayelu, A. E. &Ogunlade, L. (2006).Uses of ICT for gender empowerment & sustainable poverty alleviation. *International Journal of Education and Development*, 2 (2): 1-6

Ogar, C.E. and Dushu, T.Y. (2018) Transforming library and information services delivery using innovation technologies. *Library Philosophy & Practice*, Paper 2036.

oketunji, i (2004). Library development and the role of information and communication technology, being a paper presented at national workshop on strategies for managing technology services in libraries and information centres, NLA Cataloguing, classification and indexing section, held at Stella Obasanjo Complex, Lokoja, and 17th-24th October 2004.

Olayemi, K. J., Umar G. G., Yemi-Peters, O. E., Sokari, V., Haliru, Z. A. (2017). The Application of information and communication technology for service delivery in the serial unit of Bayero University Kano. *International Research Journals* 8(3): 27-33. Available at: https://doi.org/10.14303/er.2017.026. Accessed 20th January, 2023

Osuala, E.C. (2007) *Introduction to research methodology*. Onitsha: African Publishers.

Omekwu, C. O. (2006). Information and communication technology imperatives for law librarians in law libraries in Nigeria. In: C. O. Omekwu (Ed). Proceedings of the Nigerian Association of Law Librarians

Oshilalu, H. A. (2011). Emergence of electronic library resources: a threat to librarians? *International Journal of Library and Information Science*. 3(2): 29-33, Available online http://www.academicjournals.org/ijlis. Accessed December 22nd. 2022

Pigato, M. (2004). Information and communication technology, poverty, and development in Sub-Sa-Haran Africa and South Asia. Africa Region," Working Paper No. (20) World Bank