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Copyright in the Digital Era and Some Implications for Indigenous Knowledge

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Abstract

An understanding of copyright is particularly important in an academic, scholarly and artistic environment where creators are continuously using the works of others to build and shape their own thoughts, opinions, and indeed produce their own works. This paper attempts to show the circumstances under which the use of other people's work is allowed. A discussion of the fair use doctrine is provided in this regard. The paper further seeks to show that although the problems of enforcing copyright in the print-based world is not straightforward, it is even more problematic in the digital era where materials are freely available on the World Wide Web and the Internet, and where it is difficult to differentiate between original work and copies of that work. Finally, the paper considers the copyright of indigenous knowledge, which has its own parcticular characteristics. Some problems of copyright of digitised indigenous knowledge are highlighted.

Introduction

Copyright is a concept that is not generally understood. According to Litman (quoted in Samuelson, 2002), this is ironic considering that it applies to the everyday things that people do, for example, recording music for their own personal use and photocopying documents. People are blissfully unaware of what copyright entails and means to them both as creators and users of knowledge. Copyright represents one aspect of intellectual property rights (IP). IP rights are meant to reward, recognise and encourage innovation and creativity. They bestow upon the recipients the right to profit from their innovation,

and the right to contest against anyone who appropriates their rights. Examples of IP include the granting of copyrights, patents, trademarks and trade names.

Strong (1994) has simply described copyright as a limited monopoly granted to the author in order to provide the financial incentive for people to create works of literature, art, etc. A definition of copyright from the World Intellectual Property Organization (WIPO) document on intellectual property reads as follows:

> When a person creates a literary, musical, scientific or artistic work, he or she is the owner of that work and is free to decide on its use. That person (called the "creator" or the "author" or "owner of rights") can control the destiny of the work... Copyright is the legal protection extended to the owner of the rights in an original work that he has created. It comprises two main sets of rights: the economic rights and the moral rights (WIPO, 2003).

Economic rights refer to the rights that the owners of the work have to make a profit from their work. These include the rights of reproduction, broadcasting, public performance, adaptation, translation, and public recitation, public display, distribution and so on. Moral rights refer to the right of the author to have his/her name prominently indicated on the work and to object to any use of that work that he/she deems to be a distortion, mutilation or any other modification.

Copyright protects the intellectual rights of authors and thus encourages them to continue contributing to knowledge. Mears (2003) notes that: "The purpose of copyright is to promote the progress of science and useful arts and to encourage others to build freely upon the ideas and information conveyed in a work." The idea is that authors are encouraged to produce more knowledge by being given the rights to benefit commercially and otherwise from their work. Potential authors are also encouraged through guidelines known as "fair use" to build upon the ideas of others and produce even more knowledge. Copyright encourages people to be creative since they get to control and even benefit from their creativity; it also encourages others to generate new knowledge by enabling them to use the ideas of others as long as certain conditions are met.

The main international agreement on copyright is the Berne Convention of 1886, administered by World Intellectual Property Organization (WIPO), to which most countries have fashioned their own copyright laws. WIPO is an international organisation tasked with promoting the intellectual property of works. It is a UN specialised agency

based in Geneva and has a country membership of 179. It administers a total of 23 treaties dealing with different aspects of intellectual property. One of these treaties is the Berne Convention of 1886 that has been revised several times over the years in relation to the impact that technology has on copyright laws and the protection that could be accorded to the authors and creators as a result. The convention was signed to protect the rights of authors of literary and artistic works, and all member countries that have ratified the convention are bound by its provisions. The Berne Convention stipulates that copyright usually lasts for the life of the author, plus an additional 50 years. After that the work is then in the "public domain" – i.e. can be used without the author's permission because copyright has expired. Copyright is assumed as soon as works have been put down in a fixed format, there is no need to follow a formal application process.

The Doctrine of Fair Use

The fair use doctrine consists of a set of guidelines that outline what constitutes allowable use of copyright material. The fair use doctrine enables or encourages the development and progress of knowledge by making copyright flexible enough to allow copyright materials to be the basis of new knowledge. There are four criteria used to judge whether the use of copyright protected materials constitute fair use or not. These criteria have been used by various courts, especially in the United States of America (USA), to evaluate whether there has been an infringement of copyright. The criteria follow below:

1) The purpose and character of use, that is whether the work is used for educational purposes and research. If the material has been used for other purposes, for example, for commercial gain, then copyright has been infringed.
2) The factual or creative nature of the original work – this means that when the copyright work has been used to produce a non-fiction work, then the individual gets more points for fair use than someone who has produced a fictional work.
3) The amount and substantive value of the work being copied relative to the work as a whole. Reproducing a large portion of the work, such as the whole book or more than a third of it is regarded as an infringement of copyright.
4) The effect that the use of the work has on the market value of the copyright work, that is whether the use of a copyright work has affected the economic gains of that work due to the creator.

The rule is that if a work is used to create a new work, which is called transformative use, then this constitutes fair use. However, if it is just a direct copy, with no transformative

value, then this is definitely copyright infringement. In addition, if that work is copied in order to gain commercially from it, then copyright has been infringed.

Thus, fair use rule is as an exception of the copyright laws, when materials can be reproduced without first seeking the author's permission. This applies when the use of the material is not for financial gain, but is used for educational purposes or informing the public. This is why scholars are able to freely reproduce materials from journals and books, and to also quote from other sources, as long as it is not done for financial gain, but for education and research purposes.

Fair use is not considered to have been applied when the use of a work may affect the returns of the material in terms of sales. An example, is when by photocopying or recording an item potential buyers are prevented from going out to purchase the item. This obviously affects even libraries where lending of books may be considered to be harming the potential returns of the authors. Fair use, especially in the USA has been built up through lawsuits over the years.

Copyright and Fair Use in the Digital Era

There is no doubt that ICTs have changed intellectual property rights as they have affected many other things. The first concerns of copyright in the digital world were first raised in the USA, subsequent to the formation of President Clinton's Information Infrastructure Task Force (IITF). The IITF was tasked with articulating the administration's vision of a National Information Infrastructure (NII). The issue became the mandate of the Working Group on Intellectual Property Rights. The Working Group considered that a conference on fair use in the digital era (CONFU), bringing together copyright holders and educationalists and interested parties, was required to try and develop guidelines for fair use in the digital era. The working group met many times and developed guidelines, although they failed to reach a consensus on the applicability of these guidelines. In the absence of anything else guiding fair use in the digital environment, many institutions and universities, especially in the USA, have adopted the guidelines. These guidelines refer to a number of circumstances when digital copying might need to be carried out. For example it covers the digitisation of images for use in teaching and scholarly work. It is permissible for educators to digitise analogue images as long as they use thumbnail sketches of those images (small scale, usually low resolution digital representations of the image). Educators may also use images for teaching and scholarly presentations, but would be required to seek permission if they were to be published. Multimedia works may be created for either teaching or for scholarly

presentations, but with limitations on the amount of text, music, lyrics, video clips, etc, that may be included in the presentation. The multimedia work may only be used for a period of two years only.

Fair use makes it possible for individuals to make references to other people's ideas and reproduce them provided this is for academic study. An example is carrying out research or for teaching purposes. While this could work very well (or fairly well) when the material is in printed format such as books and periodical articles, copyright enforcement in the printed environment by nature could be difficult. First, creators and authors have the right to prohibit or bring forth a case if they perceive that their rights have been infringed. However, the monitoring required in this case is practically impossible for them. Hence, the existence of collective copyright management organisations who look after the interest of creators and authors in many countries. Secondly, even though the restrictions on the use of materials are set out in the copyright laws, interpretation of these has been subject to a lot of debate and lawsuits especially in the United States of America.

The advent of the Internet or the web has had implications for both publishers and users. It is easy to publish information and that information becomes instantly available to thousands of people all over the world. This is an advantage for publishers/creators because it has lowered the cost of distribution after the initial production. However, this has created a problem for both publishers/owners and the users of information. On the one hand, for publishers/owners, the easy distribution and availability of materials on the Internet means that the economic returns (i.e. from sales) of the works would be severely curtailed because once the material is available digitally, distribution becomes easy. On the other hand, for users, the concerns of the owners means that publishers/owners would want to take measures to curtail access to information, through licensing. This is the dilemma currently of copyright law enforcement in the digital era.

The economics of information have also been altered somehow by the digital era (Samuelson, 2002). Digital information has changed the economics of reproduction, because making copies of works has become very easy, the cost has gone down, and the quality is very good. In the digital world, opportunities for theft are much greater than they were before (Strong, 1994). In addition, the electronic media, namely the Internet makes it easy for individuals to make perfect copies of materials to the extent that it is not possible for one to easily distinguish the original from the copy. Thus, a piece of

work can be distributed and circulated by individuals other than the owners/publishers, as well as altered without being recognised.

Materials that are available on the Internet are regarded as being in a fixed, tangible medium (Stanford University, 2003) because they are stored somewhere in some file server. This means therefore that such work is subject to copyright and, therefore, should not be copied. However, the use of digital material involves copying or downloading the materials in order to read them. This means that the use of digital materials is in itself an infringement of copyright because the basic fundamental concept underlying copyright is the copying of materials. There is an inherent contradiction that seemingly renders the concept of copyright in the digital era untenable. This is an issue that has not been resolved as some people believe that downloading is legal and others believe that it is not (Mears, 2003). It is as a result of this dilemma that online publishers have opted for the licensing of materials, so that only those with the permission may download materials in order to use them. In some instances, publishers have used technology to disable the downloading, and therefore, access to their materials. All of this challenges the intent of copyright, which is not only to protect the rights of the creators but to also make it possible for the public to access materials in order for them to be able to create more from the espoused ideas and notions.

Networks have changed the economics of distribution – once a work is put on the Internet, it becomes instantaneously available to millions of people. It is therefore easy for publishers to distribute their work, and also easy for the public to distribute unauthorised works, such as pirate copies of movies and music, beta versions of software, and manuscripts that are not yet published. The easy distribution of information means that publishers and owners prefer to license rather than sell their works to users in the digital media. Again, this action has given more rights to authors and publishers – thus tipping the delicate balance that copyright is attempting to strike.

In the print era, copyright was about how other peoples' works were used. But according to Pike (2002), the tendency in the digital environment has become to control access since use is very difficult to police. This has upset the 'first sale' doctrine as found in the printed information era. First sale means that individuals and libraries could, once they had bought a book, be able to lend it out or resell at second-hand book sales, etc. Licensing, on the other hand, means that the licensee has limited transfer of rights of use with stated conditions and terms. It means that the works are not the property of the licensee, to use even years after once the licence has elapsed. In a sense, the licensee (for example, an individual or a library), is tied to the provider for as long as they need the

material. This also applies to the archiving of materials for posterity. Libraries are about storing knowledge for posterity, but in the digital environment where materials are licensed, this mandate is difficult to fulfil for libraries.

Digitised data can be easily manipulated and modified. Whilst it was not an easy matter to determine what is fair use of materials in the print world (as evidenced by lawsuits in order to rule on what was fair use), it has become extremely difficult to apply copyright laws in the digitised, electronic era. This is so because users are able to obtain data freely from the Internet and other networked sources and are able to create new works by culling from different sources. The restriction on copyright is just not evident in this environment. This has enabled the creation of multimedia documents. Putting together a multimedia document means putting together different types of data obtained from different sources. For example, while preparing a presentation on the *Bee Gees*, a student/author might want to include video clips, sound clips, etc, to illustrate their point. This means that issues to do with copyright are extremely difficult because of the myriad of sources that might be used.

An important point is that the moral and economic rights of authors and creators are seriously under threat. With the commercial development of the Internet, publishing conglomerates have taken over the copyrights of authors who then no longer have control over what happens to their creations. The fact that materials can be easily copied and distributed puts the rights of authors and creators in serious jeopardy.

Intellectual Property Rights and Indigenous Knowledge

Indigenous knowledge (IK) can be defined as a body of knowledge belonging to communities or ethnic groups, shaped by their culture, traditions and way of life. The term is sometimes used interchangeably with traditional knowledge. IK is home-grown knowledge that enables communities to make sense of who they are and to interact with their environment in ways that sustain life. It is knowledge that arises from life experience, and which is passed down from generation to generation through word of mouth in the form of folklore, idioms, proverbs, songs, rites of passage and rituals. IK covers the broad spectrum of life, and therefore there are different types of IK, ranging from people's beliefs, medicine, arts and crafts, etc. While knowledge in general is described as being explicit and tacit, IK is mainly tacit as it resides in peoples' heads, and has for the most part not been codified. Indigenous knowledge has a number of unique characteristics:

a) Any one single individual does not own IK because it is a product of the culture, tradition and way of life of a community. It is thus community owned.
b) It is usually passed orally from generation to generation; it is not codified or documented anywhere except in the minds of the community and the community's knowledge custodians, such as chiefs, traditional doctors, etc.
c) It has a potential to provide (and has done in many cases) economic returns either to the community that owns it, or to the individuals who may have taken it away from the community for meagre economic gain, or through some other fraudulent means. It is thus a very valuable resource, and this has prompted more debate on the intellectual property rights of IK.

There has been recognition of the economic potential of IK over the past few years, and this has brought issues of intellectual rights of IK to the fore. It is very clear that IK has contributed significantly to some medicinal and cosmetic products in use today. But it was not until 1992 that the importance of IK was recognised and the Convention of Biological Diversity (CBD) was put in place. There is, however, a contradiction between intellectual property and indigenous knowledge. Intellectual property, according to Blakeney (1999), represents the "propertisation" of traditional knowledge, and by definition traditional knowledge is not individual property. IK is generally perceived to be a collective property and is owned by communities. However, such communities are usually not able to take control of this knowledge and this often becomes the responsibility of custodians such as chiefs. It has historically been the case that these chiefs have "sold" IK without due consideration for the long-term implications of this on their communities.

Patenting is a way of protecting intellectual property that goes some way in assigning intellectual property rights. An example is the granting of a patent for the Hoodia cactus to the San community in South Africa (Mutula, 2002). The problem though for most other communities is that they have limited legal know-how, savvy and the means to engage agents of multinationals who appropriate their IK for their own gains. Where they can negotiate for their rights, the struggle has been protracted. The experience of the San people in securing recognition of ownership, and a share of the profits from the Hoodia cactus patent is a case in point that illustrates the difficulties that communities have in claiming their rights. The San sued South Africa's Council for Scientific and Industrial Research in 2000 for patenting the properties of Hoodia, which, they claimed, was their IK. Negotiations took three years, and were only concluded in March 2003. The question

is, how many communities will have the wherewithal and tenacity to engage an organisation as big as the National Research Council?

However, because IK is not documented, there is a danger that it would disappear as people steeped in the ways and knowledge of communities die off. This is a very real danger because as more people become educated, they come to consider only knowledge that has been through the rigours of scientific, laboratory experimentation as real knowledge. They tend to view IK as inferior and based on hunches and superstitions. There is therefore a need to preserve this information and knowledge, as it is in fact valuable to society. Preserving it, however, means documenting it. Once a work is documented in a fixed format, it is automatically copyright. The question is who owns the copyright – is it the community from which it was obtained, or is it the individual or organisation that took the responsibility to document the knowledge? Ideally, the community should have the controlling rights, but practically, this has not always been the case. Historians and anthropologists have studied communities and recorded their culture, traditions, way of life and indigenous knowledge, and have claimed the credit. Pharmaceutical companies and cosmetic companies have used plants and extracts that are known to local communities as being beneficial in one way or the other and have appropriated that technology in most cases in return for a pittance compared to the profits that they have made.

In many developing countries like Botswana, legislation for intellectual property rights has not really been enforced because this was not regarded as a priority after independence There is generally very little, if any protection for traditional knowledge holders in Botswana. Hence there have been instances of intellectual property infringement that were recently published in the media, such as the Hoodia cactus stories.

Indigenous knowledge property rights are generally included in the branch of intellectual property known as industrial property. However, the IK property rights are still very much under discussion locally and internationally. Even the World Intellectual Property Organization has not yet been able to promulgate the regulation of intellectual property for traditional or indigenous knowledge holders. However, some progress has been made with the establishment of working bodies within WIPO to establish procedures of protecting traditional indigenous knowledge. The Berne Convention on Copyright and the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) are some agreements that attempt to protect IK from abuse and piracy. However, according

to Raseroka (2002), these instruments are oriented more towards the modern knowledge systems, than to IK, and are therefore inadequate in protecting the rights of communities where their IK is concerned. The intellectual property regimes have been found wanting in protecting indigenous knowledge. This is due to the contradictions between the basic tenets of copyright, ownership and authorship; material form; originality, duration, rights of derivative works (Githaiga, 1998), and the nature of IK. As seen earlier, copyright gives individuals the right to knowledge that they have created. IK is not individually owned, but a sum total of communities that go back a long time. Under copyright, works have to be original creations. IK is mostly inspired and derived from previous eras and built upon and developed with time, thus the concept of originality does not resonate with IK. IK for the most part is oral knowledge passed that way from generation to generation. For copyright purposes, IK must be represented in a fixed form, i.e. written down. Copyright materials are said to remain so for the lifetime of the creator plus another 50 years after their demise. IK is timeless; it is a product of many lifetimes that has been carried over many generations.

Digitising Indigenous Knowledge

Over time, indigenous and cultural heritage is being digitised. According to Britz and Lor (2003), there have been quite a few digitisation projects of IK in Africa. There are a number of activities and initiatives aimed at capturing Africa's IK, one of which is the World Bank IK Programme, which maintains a database of IK, where people and communities can contribute IK. Whilst this may be a positive development that enables people who would not otherwise know or come to appreciate other people's culture to do so, it also poses a number of moral questions (Britz and Lor, 2003). Britz and Lor pose the following question: "will the originating communities be identified as the original creators of their cultural heritage, and will they have the right to control access and non-disclosure of certain categories of their cultural heritage, for example, sacred knowledge artefact?" (Britz and Lor 2003). The WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore set up in 2000 still does not have the answers to these questions. Of concern to IK holders is the right to be acknowledged and to prevent derogatory, offensive and fallacious use of their heritage (WIPO, 2003).

In general, intellectual property rights for IK are needed for the following reasons (Anon.):

1) The right to own and control one's own knowledge

2) The right to prevent and control commercial use of that knowledge
3) The right to benefit commercially
4) The right to be acknowledged and attributed to the knowledge
5) The right to prevent derogatory, offensive and fallacious use of the knowledge.

IK generally belongs to communities, and once such knowledge is digitised, then one may wonder whether the communities from which it originates will have rights to it, and if so, what sort of rights, given the general powerlessness of communities against multinationals. Will they be able to exercise the rights outlined above? History has shown otherwise. Communities have been unable to control their rights once their knowledge has been codified or digitised; they have been powerless to prevent their knowledge from being commercialised and used in derogatory ways.

Britz and Lor (2003) have proposed a number of broad principles that should guide the digitisation of indigenous knowledge, and which the writer feels could be extended to copyright issues of indigenous knowledge in the digital era. These include the cultural and moral rights of owners of IK should be protected. Digitisation should not lead to trivialisation of the culture where it is used derogatively and for enriching other people other than the community who owns the IK. Communities should own the IK and have a say in what should or should not be digitised. IK owners should maintain their ownership rights. The IK ownership should not fall into the hands of those digitising it – as it did in the past with those who were documenting it.

Conclusion

The concept of copyright as we know it is being challenged by the digitisation of information and the proliferation of networks, in particular the Internet. Many concepts enshrined in copyright, such as fair use and first sale doctrine are difficult to manage in a digital environment. Copyright has moved from being a concern of publishers and writers only because the very essence of copyright (copying/downloading) is at the very heart of using the technology to which many people in the world now have access. With issues of copyright being unclear in the digital environment, and the concern for developing nations to put content into the Internet, there are more questions than answers on the copyright of indigenous and cultural heritage in the digital environment.

Many developing countries' intellectual property laws have vestiges of their former colonisers' thinking embodied in them. Many of these countries, such as Botswana, are in

the process of developing new copyright laws with the assistance of WIPO. There is a need, therefore, for these countries to take note of some of the issues that arise from copyright and the electronic environment. There must be legislations to cover all possible scenarios to avoid ambiguity, especially as it relates to commercial content producers who now make use of protective software (encryption, fingerprinting, digital signatures, licensing, etc) to protect the copyrights o their materials. This, however, does not bode well for developing countries that lack the resources to purchase access to information. Given the fact that access to information is a human right, governments and civil society in developing countries need to ensure that most of the content that commercial content producers place on the Internet is accessible to all users.

Even as WIPO through the Intergovernmental Committee on Genetic Resources, Traditional Knowledge and Folklore is still working out approaches to protect indigenous knowledge, there is also a need for governments and civil society in developing countries to think very carefully about what needs to be done to safeguard the intellectual property of communities that own IK. One idea is that countries should develop IK databases that would indicate what IK there is, who or which community owns it, etc. The idea here would be that such a database could be used to check whenever individuals are claiming or applying for IP rights. When IK is being digitised, a clear statement of IP rights should be included that shows who the owners are and under what conditions the IK could be used – something similar to the licence notices that are displayed when one uses computer software.

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Challenges in the Provision of Library Services for Distance Education: A Case Study of Selected Universities in Kenya

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Abstract

With the increasing popularity of distance education, focus has turned to the role of libraries in the distance learning process. It is widely agreed that like their campus-based counterparts, distance education learners need adequate library services if they are to gain quality education. This paper examines the efforts being made by Kenyan university libraries to fulfil the information needs of the distance education students in their respective institutions. It concludes that although efforts have been made, there is room for improvement through adequate planning, financing and especially through collaboration between information personnel and those who design and implement such distance education programmes.

Introduction

Distance education is practised all over the world and in recent years its scope has developed enormously and rapidly. It has become an intrinsic part of many national education systems and an academic discipline in its own right. Ten years ago, distance education was dominated by correspondence courses, but today, institutions at all levels are providing instruction to remote and local users through the use of audio, video and Internet technologies (Lorenzen, 1998). With the increasing popularity of distance education, a lot of attention worldwide is being focused on the role of libraries in supporting distance-learners away from the campus. Questions are also being asked on whether libraries have a role in distance education at all (Lombardi, 2000). A review of existing literature has tended to turn up dim prospects. For example, according to Beagle (2000), a review he conducted of articles on the topic of distance education written by

faculty revealed that only a few issues relating to library access or library resource integration were mentioned. Roccos (2001), searching several databases, arrived at a rather pessimistic conclusion that there is almost no reference to library resources in studies about distance education. She also noted that libraries were rarely mentioned in distance education courses and literature, other than references to online catalogues and electronic resources. At the same time, like other forms of education, the aims of distance education cover a wide spectrum, all of which demand that learners are to be adequately exposed to existing literature on the specific field of study. These goals include the development of personality and cognitive structure through guided learning and problem solving, as well as training of knowledgeable and well-adapted professionals. Thus, distance education aims at more than merely conveying information or imparting knowledge. According to Culpepper (1999), like other forms of teaching, distance learning should facilitate learning goals, such as examination, self-realisation, or professional competence. Critical to the achievement of these goals is the need to promote productive critical thinking and the ability to conduct independent research among the students. This key element of higher education learning cannot be achieved if adequate literature resources are not provided.

Providing Library Services for Distance Education

Distance learning courses have been broadly categorised into two forms: the 'self-contained course', whereby students study from pre-packaged materials and are not expected to read or consult sources beyond the supplied material, and the 'expandable package' where study is done using packaged materials but wider reading is recommended for certain sections of the course. Stephens and Unwin (1997) have justified pre-packaged materials on grounds of equity, whereby some students may not have access to extensive library resources, and secondly, on grounds that the academics for practical reasons have to set the boundaries of study by choosing the necessary sources. However, such arguments can be questioned on the grounds that they do not fully address the aspirations of the learners, and one of the goals of university education, which isequipping individuals with the ability to conduct research independently.

Stephens and Unwin (1997) have also commented on ambivalent attitudes to the relationship existing between library services and distance education. They reported the

argument that although the main motivation for academics to embrace distance learning is the power of market forces, advances in educational technology is also an important contributing factor and, indeed, for both students and course providers, pragmatism outweighs pedagogic principles. However, in another research carried out in England, it was observed that there was a mismatch of expectations between students and course providers about the role of libraries in relation to courses delivered in distance learning mode (Unwin et.al., 1997). According to this research, although some course providers regard the issue of library services as irrelevant to their students, the students themselves felt the need to supplement the provided course materials with additional reading. Therefore, in spite of strong work or career-related motives, students do not wish their studies to be confined within a prescriptive framework.

It has been argued that an approach to distance education that ignores the role of libraries in the learning process in the first place provides a narrow experience for the learners and fails to encourage the expected research-led inquiry as well as the development and challenging of knowledge (Holmberg, 1994). Secondly, such an approach is against one of the fundamental aims of university education of equipping students with vital skills of independent thinking, since it reduces universities to mere designers of pre-packaged, pre-programmed learning. Therefore, unless libraries are encouraged to play a central role in the learning process, and supported in the effort, distance learners face a future in which their experiences as learners are tightly controlled. This underlines the need to find a balance between a market-driven approach and a commitment to the development of students who can operate as independent thinkers and researchers.

The justification for library services for distance education is that access to adequate library services and resources is essential for the attainment of superior academic skills in post-secondary education, regardless of where students, faculty or programmes are located. Like it is the case for regular campus-bound programmes, libraries are charged with providing distance education learners with user-based library services and information assistance that are required for successful completion of coursework, research papers and projects, and independent reading and research. Distance learning students require access to the full range of library services, such as lending services, reference assistance, interlibrary loan, course reserves, and Internet-based resources (Heller-Ross, 1999). Besides, library research and information literacy are essential components of the academic learning experience since the aim of instilling lifelong learning skills through general bibliographic and information literacy instruction in academic libraries is a primary outcome for the distance learning community as it is for those in traditional campuses (Association of College and Research Libraries, 2000).

The challenges of providing library services for distance learning revolve around the fact that until very recently most library collections as well as services were designed for on-campus programmes and were not well suited for the needs of distance learning students. Therefore, in the first place, the very characteristic of distant locations of students demands fresh ways to deliver services, based on constantly evolving technologies, new programme offerings, increasing enrolments and learner needs (Swaine, 1998). Secondly, in most cases traditional on-campus library services themselves cannot be stretched to meet the library needs of distance students and faculty who face distinct and different challenges in library access and information delivery. A case in point is Kenya where existing main library resources are generally poor in quality, are situated in major towns and therefore of limited use to the rural based students (Odini, 2000). In the face of this, the host institutions' libraries have the primary responsibility for identifying, developing, co-ordinating, providing and assessing the value and effectiveness of library resources and services designed to meet both the standard and the unique informational and skills development needs of the distance learning community.

In the first place, the provision of library services for distance education needs an infrastructure that integrates distance education services within the library. Secondly, there is need for the reassessment of library funding with the aim of identifying, tracking and understanding the cost factors involved, reallocating funds and using additional funding avenues besides the regular budget processes (Lessin, 1991). Thirdly, there is need to further assess the existing library support for distance learning, its availability, appropriateness and effectiveness, and develop methodologies and policies for the provision of library materials and services from the library to distance learning community designed to ensure an equitable service to the off-campus population (Association of College and Research Libraries, 2000).

Another key issue in developing library services for distance education is putting in place human resources to manage and coordinate these services. These include appropriately trained personnel such as a library coordinator to manage the services, subject specialists, additional professional staff in the institution, as well as support staff from a variety of departments, who all work together to provide these services. This implies that staff resources need to be reallocated and staff trained for new responsibilities, while issues such as extending library services to distant places even across national borders will be considered (Heller-Ross, 1999).

Perhaps the most challenging issue is how to ensure that the library services offered to the distance learning community are designed to effectively meet a wide range of informational, bibliographic and user needs. There is a need for reliable, rapid and secure access to institutional and other data banks including print and Internet-based resources. Also, there is a need for consultancy services and programmes of library user instruction designed to instil independent and effective information literacy skills (Caspers et.al., 2001). The distance library loan system is useful as it connects the library services and distance education students. Therefore, it has to be worked out well together with an efficient document delivery. The delivery of documents should be prompt and information personnel should carry out promotion of library services to distance learning community, including documented and updated policies, regulations, and procedures for systematic development and management of informational resources. This means that not only is there an increase in workload but also in electronic environment, training staff in new technologies, putting materials on the web and handling electronic request become necessary (Beagle, 2000).

Finally, providing information literacy instruction to distance education students on library use requires new methods of delivery such as the use of videos, interactive web-based tools and even video conferencing. This calls for investments in information technology and a close working relationship with others, such as IT persons for technical solutions. There is also the need for preparing documentation for electronic tools, and sometimes re-writing it to make sure that it is specific to distance education students' needs. Indeed, according to Ruess and West (1994), the greatest challenge is establishing a working electronic information system that, among others, takes account of the need for technical skills and restricted access among the students.

An Overview of Distance Education in Kenya

The development of distance learning in Kenya has been seen as an attempt to resolve the conflict between the aspirations for more education by an ever-increasing number of Kenyans and the resource constraints (both financial and human) on quantitative growth in enrolments in conventional higher education institutions (Makau, 1993). Consequently, distance learning in Kenya has the objectives of, firstly, providing opportunities to qualified Kenyans who cannot secure places in the existing internal faculties of national universities, and secondly, providing an alternative and innovative method of learning, which is not limited to a particular time and spacing and giving an opportunity for people

to learn at their own pace. Thirdly, it aims at maximising the use of limited educational resources, both human and material, by making university education available beyond the lecture halls (Republic of Kenya, 1981).

Distance learning in Kenya started with the admission of 594 students to the University of Nairobi in 1985. Up till now, this programme is based on a correspondence system and few contact hours when the lecturers visit the regional centres. Self-instructional materials in print, video and audiocassettes have been used as learning resources. Today, this method is also employed in a number of other universities such as Kenyatta University. In some cases, such as in Kenyatta University, it has taken the form of collaboration between individual universities and selected tertiary colleges. The tertiary colleges (centres) provide the physical facilities while the universities provide teachers and syllabi. At specified periods, students go to the centres for formal lectures and examinations. In 2001, Kenyatta University launched a school of distance learning to offer courses on management, education, nutrition and nursing, computing and information technology, banking and finance, and library and information science. In the sciences (computing, nursing, engineering and technology), arrangements are made to enable students to undertake practical sessions at selected study centres.

Lately, there has been a trend toward electronic learning. In 1995, the World Bank initiated the setting up of the African Virtual University, a satellite-based distance education institution whose objectives are to deliver to countries of Sub-Saharan Africa, university education in the disciplines of science and engineering, non-credit/ continuing education programmes and remedial instruction. The need for this initiative was the awareness that higher education in Sub-Saharan Africa suffers a severe crisis that manifests itself through inadequate inputs, declining staff to student ratios, low level of research and low internal and external efficiency. Currently, European and American faculty teach mainly courses which are beamed to 22 universities in Africa. In future the World Bank hopes to broaden the curricula to include African-based programmes. Two Kenyan institutions, namely Kenyatta University and Egerton University are participants in African Virtual University programmes. United States International University-Africa (USIU-A) has also introduced e-learning in areas such as accounting, marketing, and information technology. In the case of e-learning, delivery methods include video-taped lectures augmented with live video lectures, web-based course notes, textbooks, CD-ROMs, and interactive sessions using Internet delivery systems.

The preceding overview provides a framework for the present study. The objective of this study was to investigate the methods used by university libraries in Kenya to provide library services to distance learners enrolled in their parent institutions. The study also aimed to highlight some of the challenges faced by participants in the propgramme.

Methodology

This paper is based on a case study carried out between March and May 2002 to assess in a general way the status of library services for distance education in Kenya. There are many post-secondary institutions with distance learning programmes in Kenya. But only four universities had distance learning programmes, hence they are used for this study. These are the United States International University-Africa, University of Nairobi, Kenyatta University and the newly established African Virtual University based in Nairobi. Data for this study were collected through interviews with the chief librarian of each of the four universities. In the case of the African Virtual University, data were collected through a review of the available documents and an interview with the chief librarian of one of its partner institutions in Kenya, Kenyatta University.

The study relied on qualitative data collected through interviews based on an interview. Key questions were: (i) How would you assess the role of library services in the effectiveness of distance education programmes in Kenyan universities? (ii) Does your institution engage in any of the following methods in providing library services to distance learning community? (a) special collection dedicated to distance education learners, (b) Internet-based information resources, (c) postal lending, and (d) other techniques. (iii) How would you assess the effectiveness of the methods your institution applies in providing library services to distance learners? (iv) what are the main challenges faced by your institution in providing library services to the distance learning community? The data gathered from different institutions were analysed, and areas of uniformity and differences are discussed.

Findings

The Role of Libraries in Distance Education in Kenya

There is a dearth of literature on the subject of library services for distance learning in Kenya; and among both scholars and librarians, the subject has not been given much of attention. However, there is a recognition that adequate supply of library and information

services to distance learners is critical for the success of the distance learning programmes. Interviews with the chief librarians of the universities included in this study indicate strong appreciation of the role of library services in providing effective distance education in Kenya. In the face of the increasing importance of distance education in the country, and a poor library system, there is need to come up with creative ways of providing distant learners with adequate library services that are required for successful completion of coursework, research papers, independent thinking and research.

Methods of Providing Library Services for Distance Education

This study found out that in the first year of the programme in 1985, the Faculty of Education at the University of Nairobi used part of the fees paid for the course to buy essential books and distributed them to students. This approach proved to be expensive and unsustainable and was therefore discontinued. Currently, those students participating in this correspondence-based distance learning are expected to borrow books from libraries (including other public university libraries, the Kenya National Library Services and non-governmental institutions) or individually purchase their own books from booksellers. At Kenyatta University the study established that apart from instructional print materials, students had to visit the university library to access and borrow reading materials or make use of other relevant libraries in their locality. Apart from the printed materials, the United States International University-Africa Library subscribed to electronic databases with a total of 6000 electronic journals with full text articles. Therefore, students can access the local library as well as Internet resources.

This study also established that African Virtual University (AVU) has made more progress in providing library services for distance learning than other universities. It has created a digital library consisting of e-journals, e-books and online archives to facilitate access to worldwide resources by students. The AVU virtual catalogue is a searchable database that covers a wide variety of topics and contains about 3855 entries, which provides links to information on the Internet. All searchable items have been indexed into browsable web pages by author, subject, titles and series. The online journal service, named *ProQuest* thus provides access to over 1,100 journal and magazine abstracts and full text articles going back 10 years or more. The *ProQuest* is made available through *Howell Information* and *Learning Inc* and all students obtain user identification. There are also links to the World Bank web page as well as to the web of other international organisations. These Internet-based resources are meant to supplement library resources currently available at partner institutions.

Evaluating the Library Services Provision for Distance Learning

This survey found that a variety of techniques have been employed in Kenyan universities to provide library services to distance learning community. These include the provision of access to campus print collections and electronic resources such as CD-ROMs and Internet-based resources. There is also an effort (as in the case of United States International University-Africa and the African Virtual University) to provide electronic journal access from remote locations through user identification arrangement. However, in general terms, these methods are not effective due to a number of factors. According to the librarians, the most critical problem facing library services for distance education is the lack of institutional policies to guide the provision of information for this category of learners. They observed that while there is agreement among faculty members in distance learning programmes that access to adequate library resources is essential for attainment of superior academic skills, there exists an ambivalent attitude among the planners of these programmes towards the role of these services to the distance learning community. This has hindered the creation of viable policies to guide library personnel in designing services for distance learning. In the absence of policy and clear commitment by institutions concerned, it has not been possible to arrange for optimal funding, planning and implementation programmes for the provision of library services for distance learning.

It is also observed that inadequate funding experienced by public universities and its accompanying effects of poor facilities, equipment and resources is a major hindrance towards the provision of access and timely library services for distance learners. At present some libraries in host institutions, especially public universities, are facing unprecedented decline in funding from their parent organisations. (Republic of Kenya, 1999). This means that they do not have sufficient funds to purchase reading materials, such as journals and monographs, equipment such as computers, and enlist the services of qualified staff even for campus-based regular programmes. Therefore, the libraries from which distance learners are encouraged to borrow information materials are already incapacitated by the lack of financial resources necessary for acquiring a sufficiently large stock of books relevant to the courses. In cases where materials are available for students who live far away, especially rural areas, regular use of the library is inhibited by cost and time involved in visiting the university library, short loan period for books and restricted use of rare books, theses and journals. These prohibitive costs of reading materials could be one of the reasons for the high dropout rate from the courses, which at a time stood at between 15% and 25% (Otiende, 1988). The public libraries are not

adequately stocked. As at the end of 2000 there were 26 operational libraries in Kenya. But the stock could not support university learning (Odini, 2000).

Librarians view the use of virtual services such as Internet technology as a viable alternative to the provision of print-based services which would necessitate physically visiting the library to satisfy specific information needs. However, the prospects of web-based resources are constrained by a number of factors. In the first place, library automation in Kenyan universities has largely focused on functions such as acquisition and cataloguing, circulation and administration. Therefore, the use of Internet technology for information is still in its infancy. Secondly, Internet use has been hampered by high costs and low speed of access due to poor telecommunications infrastructure in the country. So far, Internet services are largely restricted to the main towns where the right telecommunications infrastructure exists. Thus, it is of limited use to distance learners spread throughout the country.

Conclusion and Recommendations

Distance education has continued to gain popularity in Kenya and many post-secondary institutions are creating programmes that target the increasing demand for higher education. While this trend needs to be encouraged, checks and balances need to be put in place to ensure that the quality of the learning process is ensured. Particularly in the university setting, which is the apex of the national education system, the market motive, as well as pragmatic considerations, should not be allowed to override sound pedagogic principles.

From this study, it is evident that although a lot of efforts has been made to satisfy the library and information needs of the distance education students, this has been hampered by several factors. These factors include lack of institutional policies, poor planning of distance education programmes, inadequate physical facilities and professional staff, lack of adequate funding of university libraries and poorly developed Internet infrastructure in the country.

At the same time, there is need for innovative methods that would ensure that the distance learning community in Kenyan universities are not disadvantaged compared to their campus-bound counterparts. There is need to ensure that distance learners also gain adequate library and information experience, which would enhance their critical thinking and enhance their degree of exposure to existing knowledge. These methods should take into consideration the unique setting of Kenyan distance learners, which is characterised

by poor national library network, especially in the rural areas, predominance of print-based courses and also the increasing predominance of e-learning throughout the world.

Critical to this endeavour is the principle that effective learning in the university is a collaborative effort of the curriculum planners, implementers, administrators and those providing the support services such as library services. To ensure that distance learners are well provided with the literature and information they require, there is need for partnership between those who plan and implement these programmes. These include teaching faculty members, directors of distance learning programmes and the library personnel. This partnership should start right at the planning stage, when the logistics for how the literature component would be supplied is established. Also, there is need first to create policies that recognise the need for library services for distance learners and give guidelines on how these would be provided as well as the necessary financial resources, personnel and physical facilities.

University libraries should also come up with information access and delivery mechanisms that favour the peculiar circumstances of distance learners. One particular method is to create a special collection targeting the distance learning community only. This collection should be composed of core texts for each of the courses on offer. It would be advisable to have multiple copies of these texts to ensure access by a large numbers of students. The commonest borrowing period prevalent in Kenyan universities is two weeks for undergraduate students and up to a month for postgraduates. Longer borrowing periods should be allowed for distance learners to avert frequent trips to the university libraries to borrow and renew materials. Photocopying of materials should be encouraged without infringing on the copyright laws. This will ensure that students have access to materials that are not available for out-of-the-library use. Through approved methods, such as vouchers, libraries can facilitate distance borrowing whereby students do not have to personally come to the library. By the use of postal and courier services, requested materials could be delivered to the learners.

The key to the development of library services for distance education in Kenya is the existence of a forward-looking personnel that would create and manage such library services effectively. There is therefore the need for appropriate training and retraining to ensure that the library personnel have the appropriate skills. An example is the skill in web design and electronic publishing in the case of web-based library services. Library schools also need to include courses in their curricula that would focus on techniques of library services for distance learning.

Finally, there is no doubt that the future of distance education lies in the Internet-based techniques of delivery. The Internet can be used to mount reading materials to support each distance education course. Already, a number of universities in Kenya, such as the United States International University-Africa and the African Virtual University, are pioneers in this direction. These methods of delivery will need to be accompanied by web-based delivery mechanisms of the relevant literature. It is important for institutions offering distance learning programmes to invest in Internet facilities not only for distance learning purposes but also because it is a useful tool for management purposes. The bottom line of this endeavour is the need to improve the national telecommunications infrastructure, which is presently restricted to urban areas in Kenya, and is largely expensive and inefficient, especially due to unfavourable government policies.

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The Relationship Between Author Collaboration and Productivity: A Study of Sorghum Literature in Nigeria

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Abstract

The publications on sorghum held in the agricultural library of the Institute for Agricultural Research (IAR) Zaria was used as the data for this study. Nine hundred and forty publications were found to be authored by 420 authors, revealing an average of 2.24 publications per author. Some 23 of these authors were found to have topped the productivity table. The study revealed that top ranked authors in productivity also ranked top in collaboration. The study revealed that authors who were truly productive in terms of numbers of publication also collaborated extensively.

Introduction

In any discipline, according to Bocher (1966), authors are essential elements in communicating ideas. Ideas are conceived, shared with others and finally recorded either individually or jointly. These records are then passed unto others who will advance on them. Clearly, each incremental advancement, in some ways, adds to,

modifies, refines or sometimes totally refutes the prior knowledge on which the advancement was based.

The continuing growth in both knowledge and subject literature and its effective utilisation has become matter of significant concern to the society, especially to librarians and information scientists. The latter groups have devoted their efforts to the study of the structure of communication patterns, writing patterns and habits of scholars in different subject fields. Several writers have focused particularly on the works of scholars of high reputation in a given field. Seraseric and Perck quoted by Pao (1982) observed that there are numerous ways by which a subject field can be analysed. These include the history of the subject, the problems towards which it is oriented, the content of accumulated knowledge, the methodologies, the philosophy, the ethics and the people in the subject, to name but a few.

The authors and scholars of the given discipline are usually the main contributors to knowledge in the field. This is often the main reason why their population is essential for study. The scholarly published papers of these people are vital in the proliferation of knowledge. It is little wonder therefore that their research publications have come under increasing attention among information scientists in particular.

No scientific activity can take place without the knowledge acquired in the past. Subramanyam (1983) observed that even scientists like Newton and Einstein were able to advance the frontiers of scientific knowledge by standing on the shoulders of giants. Agreeing with Subramanyam, Houghton (1975) had noted that:

> Papers beget papers; a scientist will read and assimilate the work of precursors and stimulant to his own activity. Their papers will act as a platform and springboard for his published work but homage and respect should be given to them by making reference to their works.

In line with the above statement, it is clear that quite a number of studies have been carried out in the past on citation and collaboration and on productivity among authors. For instance Subramanyam (1983), in his work entitled "Bibliometrics Studies of Research Collaboration", reviewed works that were done in the past by four authors. First were a series of three articles by Beaver and Rosen. In these studies Beaver and Rosen (1979) showed that collaboration in scientific research is

related to the professionalisation of the scientific community and that collaboration generally leads to greater productivity in research and enhances the mobility and visibility of scientists. Zukerman (1967) affirms that Nobel Laureates do collaborate and this has increased their productivity. A study by Pao (1982) revealed that although a small number of authors had collaborated in scholarly published papers in computational musicology from 1949-1975, yet the heavy collaborators were the most prolific in the field. Also Lawani's (1980) findings that bibliographies of Nobel laureates in science reflect a greater extent of collaboration tallies with that of Zuckerman (1967) that Nobel laureates are more collaborative. Collaboration in a given field is also a sign of solidarity in the field. To Afolabi (1995) such solidarity group hardly exists in library and information science literature in Nigeria because collaboration is low in library and information science. Single authors dominate the literature studied. This trend could suggest also that the library and information discipline is more humanistic than scientific.

With this background, the present study seeks to determine whether a relationship exists between author collaboration (as determined by the number of papers written by an author with another) and productivity (as determined by the aggregate of publications) in sorghum literature, a sub – field of agricultural literature.

Methodology

The study covers all the publications that appeared in the *Bibliography of Sorghum* held in the Institute of Agricultural Research Library (IAR), Samaru-Zaria, compiled by Salami and Musa (1988). The bibliography includes information on the contributions made to knowledge through research done and available at IAR Library from the year 1910 to December 1987. The data were subsequently updated to 2000 by this author through the subject entry on sorghum in the catalogue. This study was limited to authors only. All corporate bodies and institutional entries in the bibliography were excluded.

After the collection and coordination of the data, the analysis and discussion were carried out using simple statistical techniques such as percentages and frequency tables. To determine the extent of correlation between the author collaboration and productivity, the Pearson Product Moment Correlation Co-efficient was used.

Findings and Discussion

From the data acquired, the total number of publications on sorghum literature was 1260 distributed among 420 authors and corporate entries. Out of these total articles available for the analysis, 940 publications were found to be authored papers which constitute 74.60%. It is these 940 articles that were now used for the study.
The distribution of the subject shows that "Sorghum growing" has 362 articles (28.7%). Following this with a fairly large gap is "irrigation" which recorded 195 (15.5%) articles. Other topics include "soil" which forms an important aspect of any crop output with 116 (9.2%) articles, "storage" (6.2%) "botany" (6.2%) "production" (5.9%), "pest and diseases" (5.5%), "processing" (4.7%), history and geography" (4.3%), chemical nutritive value and utilisation" (3.9%), "general reference works (3.8%), "extension" (2.5%), while "toxic active constituents," constituted 2.1%.

From the data in table 1, the author with the highest number of publications had 44 papers, followed by the author with 28 publications, and another author with 27 publications. Generally, many of the authors not listed here had between one and five publications each. Thus, there was concentrated productivity among the prolific sorghum writers, taking into consideration that the percentage of authors that had five publications and below constituted 94.53% while those with six publications and above accounted for 5.47%.

The extent of collaboration was calculated on the number of collaborated works in the bibliography. The collaborated publications added up to 382, which constituted 40.63% of the total 940 publications. It was then apparent that co-authorship in sorghum literature was lower than single authored papers. In order to bring to focus the productive authors and to measure the degree of variability between the publication ranges, the standard deviation measurement was applied.

Table 2 is the ranked list of the top productive authors in sorghum literature. The table shows that 23 top authors had contributed a total of 297 articles which is 31.62% of the total 940 publications. After noting the productivity rate of the authors that featured in the analysis, it was of interest to determine why the most productive sorghum authors always collaborated extensively.

It was considered of interest to examine the extent of collaboration in authorship by productive authors. Table 3 summarises the data on the productivity of the 12 most productive authors in relation to their collaborative strength. The collaborative strength of each author was worked out by counting the number of papers written with other author(s) in the data.

Table 1: Authors and Number of Publications

A	B	C(ΣB)	D (AxB)	E (ΣD)	F
Publication frequency (No. of articles)	No of authors	Cumulative author frequency	Total publication frequency	Cumulative publication	Cumulative percentage of publication
1	249	249	249	249	26.50
2	87	336	174	423	45.00
3	37	373	111	534	56.81
4	11	384	44	578	61.49
5	13	397	65	643	68.40
6	5	402	30	673	71.60
7	6	408	42	715	76.06
8	2	410	16	731	77.76
9	1	411	9	740	78.72
12	1	412	12	752	80.00
13	1	413	13	765	81.38
16	1	414	16	781	83.09
17	1	415	17	798	84.89
18	1	416	18	816	86.81
25	1	417	25	841	89.47
27	1	418	27	868	92.34
28	1	419	28	896	95.32
44	1	420	44	940	100.00

By comparing the ranks of authors on productivity and collaboration in table 3, it is clear that the authors who topped the rank in productivity also topped the rank in collaboration, that is, their rank tallies. In the study, the result shows that the four most productive authors were also the top collaborative authors. Obilana who ranked first in productivity also topped the ranking in collaboration with 20 jointly written publications. Likewise Ogunlela who ranked second in productivity with 28 publications also ranked second in collaboration with 16 other authors. The third and fourth authors on the ranking of productivity swapped positions on collaboration but

still topped on the productivity ranking. On the other hand, Giles who ranked eleventh in productivity has all his works written singly.

Table 2: Rank List of the Productive Sorghum Authors

S/NO	Productive Authors	Total no of Publications	Rank
1	Obilana, A.T.	44	1
2	Ogunlela, V.B.	28	2
3	Andrew, D.J.	27	3
4	Weester, O.J.	25	4
5	Curtis, D.L.	18	5
6	Adesiyun, A.A.	17	6
7	Goldworthy, R.P.	16	7
8	Doggett, H.	13	8
9	Kassan, A.H.	12	9
10	Roisenow, D.T.	9	10
11	Egharevba, P.N.	8	11
12	Griles, P.H.	8	11
13	Axtel, J.D.	7	13
14	Eastin, J.D.	7	13
15	Futrell, M.D.	7	13
16	Harris, K.M.	7	13
17	Manzo, S.K.	7	13
18	Salako, E.A.	7	13
19	Ajayi, O.	6	19
20	El-Rouby, M.M.	6	19
21	Melchers, L.E.	6	19
22	Norman, D.N.	6	19
23	Ohiagu, C.E.	6	19

In order to assess the degree of association (correlation) between the variables, Pearson Product Moment Correlation Co-efficient was used. The rank correlation (r) of 0.87 revealed a positive correlation. Checking the t-table, the value of r is highly significant because the critical value is ($p<0.001$). This positive correlation is statistically significant because t=36.08. Therefore, one could conclude that there was a significant correlation between productivity and collaboration among the top productive authors and the top collaborative authors in sorghum literature.

Table 3: Authors Productivity Strength Versus Collaborative Strength

S/N	Author's Name	Productivity strength	Collaborative strength	Rank in productivity	Rank in collaboration
1	Obilana, A. T.	44	20	1	1
2	Ogunlela, V. B.	28	16	2	2
3	Andrew, D. J.	27	8	3	4
4	Weester, O. J.	25	13	4	3
5	Curtis, D. L.	18	4	5	10
6	Adesiyun, A. A.	17	4	6	10
7	Goldworthy, R. P.	16	3	7	16
8	Doggett, H.	13	4	8	10
9	Kassan, A. H.	12	1	9	5
10	Roisenow, D. T.	9	6	10	6
11	Egharevba, P. N.	8	3	11	16
12	Giles, P. H.	8	-	11	-

Conclusion

An understanding of the characteristics of authors in a given field is very important. Also, the desire by information seekers to obtain information of high value is rising. A librarian serving a particular subject needs to get acquainted with the field very well. All this would force the librarian to look into the characteristics of authors in their areas of specialisations as this would be useful to the librarian in assisting their clients to source information.

Users of libraries often demand information that needs a personal contact with the authors of a particular subject. In fact, information provided in a written form may not be satisfactory. Therefore, the identification of the core author(s) in a field is very important for direct contact and inter-personal communication. Identification of these core author(s) by the librarian will also contribute to the improvement of the acquisition, organisation and dissemination of information on different subjects.

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Retention of Medical Records in Ghanaian Teaching Hospitals: Some International Perspectives

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Abstract

This paper investigates medical records retention and storage practices in selected Ghanaian hospitals. The state- of- the- art in the use and final disposition of non-current patient records is reviewed with a view to recommending remedial measures that could contribute to the improvement of the existing system. The study is limited only to teaching hospitals in Ghana. In this study records retention practices in Ghana are described, problems which come to light discussed and feasible solution modelled on procedures and experience elsewhere put forward. Two data collection instruments, face-to-face interview and observation were considered appropriate for the study. The study revealed that the problems inherent in the retention of management of non-current medical records are due to the absence of formal guidelines and procedures, and to the fact that those that exist are not properly enforced. It is argued that the causes of these deficiencies lie in the lack of accountability and appropriate organisational and managerial structures. A second problem was the paucity of essential financial, material and human resources.

Introduction

Besides its primary function as an aid to patient care, the information contained in the medical record is a source of otherwise unobtainable data, useful for health services planning, and medical and social research. In its own right the record is an authoritative document, which may be evidential in all kinds of medico-legal contexts relating to former patients.

Hence, even when a record may have outlived its medical function, it retains an intrinsic value that may be useful in a variety of situations. It is, therefore, important for health institutions to cater for the different uses of old medical histories through a commitment to retention periods of at least several decades. But the reality is that not many health institutions can afford the space, personnel and other resources to voluntarily hold records much beyond the term required to discharge their minimum obligation towards the patient and the medical professional answerable for their treatment. The solution must therefore lie in making medical records subject to a mandatory retention period for the duration that is consistent with their potential range of different uses and potential users. For instance, the secondary uses of the medical record for historical and retrospective medical research dictate that records which have become legally redundant for clinical and legal purposes be kept for reference for a given period. The study argues that the current records retention problems faced by teaching hospitals in Ghana cannot be reversed without a resolute strategy of coordinating and planning, capital investment and regulatory legislation.

One of the more compelling challenges facing teaching hospitals in Ghana is how to deal with the endemic problem of older records clogging up records departments and other storage areas. This problem is gradually heading to a crisis situation after decades of neglect, a rudderless approach of *ad hoc* decision-making and piecemeal solutions, and no structure of formal accountability. At present, the state of medical records management in Ghana is chaotic, with hospitals and national institutions floundering in a structural void. In brief, the following are some of the records management problems being faced by health institutions in Ghana:

- Lack of policies and procedures at both national and institutional levels
- Insufficient resources including record storage facilities and manpower
- The lack of standardised procedures among health institutions
- The general absence of a coordinated records management programme.

That these shortcomings have persisted for so long is because the significance of an efficient system of medical records management has been underestimated at the higher level in the Ghana health care system. Presently all indicators suggest that the pivotal tool in health care delivery is lagging behind what pertains in other countries. The situation is detrimental not only of health institutions but of the national information databases management.

This study investigates how teaching hospitals in Ghana regulate the management of patient records. It discusses how problems associated with the retention and preservation of non-current patient records could be alleviated by utilising some of the strategies adopted by other countries and suggesting improvements on the existing Ghanaian structures.

A Working Definition of the Medical Record

The term medical record has come to be used synonymously with hospital patient record, clinical case notes, case notes and health record. For a working definition of the medical record, this author has followed Hamish Maxwell-Stewart *et al* (1996) who define patient case records as "... records containing information relating to an attendance or a series of attendance at a hospital either as an in-patient or as an out-patient." The modern hospital patient record contains both clinical and administrative information generated during the course of treatment. It is important to note that clinical information is held in many other records created by hospitals. These include books of admission and discharge, ward records or ward journals, operating theatre registers, X-ray registers, birth and death registers, laboratory records, pharmacy records and others (Maxwell-Stewart, 1996). None of these categories were included in this study.

The study concentrates on the clinical and other patient data compiled during the course of treatment and kept in folders -by various health professionals. The medical records usually contain three classes of documents termed primary, secondary and transitory.

The primary documents comprise those containing the pertinent medical data, based on summaries and reports, as well as test findings prepared during the period of hospitalisation. Secondary documents include notes and reports that may be of vital medical importance at the time of treatment and which may have lasting legal value, but which are not required for the future care of the patient. Transitory documents are items such as diet reports, graphic charts indicating temperature and blood pressure, and checklists which are of no future value once the patient is discharged.

Medical Records: A Case for Long-Term Retention

The medical record was originally initially created to introduce continuity of care into the health care management of the patient. This still remains its essential role. Over time,

however, the record has progressively come to assume an increasing number of secondary functions, beginning with its use in medical education, medical auditing, research (medical, social, historical), and epidemiological surveillance. As a document in its own right, it has considerable administrative and legal significance. Because of these varied functions, the use of the record is no longer restricted to the health care sector as was the case in the past. Today's medical record serves a broad spectrum of both medical and non-medical users, which include administrators, medical, social and historical researchers, insurance underwriters and the legal profession. Because of its numerous applications, the shelf life of a medical record varies according to its intended use. Whereas legally and clinically redundant, medical records are preserved for a number of reasons of which historical research is usually not the primary purpose of medical record keeping but it is ultimately often the most enduring secondary value.

Reed (1987) amplifies this view:

> If patient case notes are not required in the long term for current patient care, or in the main for medical research, they do however possess great value in the secondary nature of their content. That is, the records of individual patient cease to be important over time, but accumulations of patient case notes record the development of twentieth century medicine. The history of the practice of medicine is in these records. They represent not only the development of modern medicine, but also that of nursing, and of the para-clinical disciplines such as social work and dietetics. While the problems of choosing what patient case notes to retain are difficult, this is insufficient reason to regard them as insoluble and not to attempt to document the development of practical medicine.

Methodology

Hospitals in Ghana fall into two broad categories: government-controlled and privately-owned. The public sector comprises two teaching hospitals, ten regional hospitals and a number of district hospitals scattered countrywide. This study, was concerned with government- controlled hospitals only and focuses on the two teaching hospitals: Korle-Bu Teaching Hospital (KBTH) located in the national capital of Ghana, Accra, and Komfo Anokye Teaching Hospital (KATH), situated in Kumasi, about 169 miles north of Accra. Both hospitals deliver not only general health care service, but also specialist care in broad areas of medicine and surgery. Owing to the range of services provided, the teaching hospitals are cutting-edge referral centres for all health facilities in the country.

Serving a large number of the population has implications for the number of patient records generated, and how these are managed. Furthermore, as these institutions also function as research and training establishments, their medical records are in regular use for education and research. Thus, these hospitals have well-established (though not professionally managed) records departments which made them particularly suitable sample for study.

The data for this study were obtained by interview (formal and informal), observation and records survey. The interview schedule was designed to reflect the aims and objectives of the study, and conceptualised in keeping with the areas of inquiry. Most of the questions were open-ended. The few structured questions required a yes/no or one response from a checklist of possible replies. Open-ended questions required either a written or a verbal response, and were so formulated that the participants had plenty of latitude to express their opinion freely. The medical records staff and administrators and some medical officers were interviewed in both hospitals.

To augment the data obtained through interview, observations of some procedures in the hospital were made. This aspect of the research related specifically to admission procedures and records creation, the location/retrieval of records, and the standard of facilities in the hospitals. A complete list of observational categories/checklist was prepared and attached to the interview form. All observations were carefully and systematically recorded.

A record survey was conducted with the following objectives: identifying the location of records, gathering information on rate of records accumulation, examining the physical condition of records and the standard of facilities.

Discussions were also held with officials at the Ministry of Health, the Centre for Health Information Management (CHIM), and officials of the Public Records and Archives Administration Department. Data collection started in the first week of January 2003 and was completed in April 2003.

Findings

The responses obtained from interviews and informal discussions, and information recorded from observation and records survey were analysed and presented under the following broad subheadings.

Quantity and Storage Locations of Records

At the two teaching hospitals, medical files were declared non-current ten years from the last recorded date of attendance. Korle-Bu Teaching Hospital officially carried no pre-1989 non-current stock, but a closer inspection revealed that, in reality, some records that predated 1985 were included. The exact total at the time of survey was not known, but a conservative estimate provided by one medical records officer put the non-current medical records holding at approximately 500,000. This collection was quartered in a sizeable, unmarked single-storey concrete outhouse, located about half a mile from the medical records department. Also accommodated there were records that had not yet been declared non-current, but had been transferred from the medical records department to make way for newer records.

Among this consignment of current files (in non-current storage) were records created between 1995-1997. The post-1997 series were retained in the medical records department. The non-current collection was kept in an air-conditioned building with the records arranged in numerical sequence on a wooden shelf that was filled almost to capacity. Some of the records were reasonably well-preserved.

Elsewhere at the same hospital, non-current records numbered about 45,000 and were kept in a room far from the records department. The dates of these records could not be ascertained, as they were in advanced stages of decay, and mixed with miscellaneous administrative records, which had been deposited in this room. Because of their state of deterioration, it seemed improbable that these files could still have retained any value.

At the Komfo Anokye Teaching Hospital, the non-current record holdings dated from 1980 to 1992. The number of files was estimated to be around 220,000 and was spread over two separate locations. There were pre-1980 items kept in a room about 200 yards from the main medical records department. In all the locations examined, storage conditions were found to be far from ideal. The storage areas were filled to capacity with all shelf space exhausted, so that some records had had to be kept at floor level.

Rate of Records Accumulation

One problem which constantly asserts itself in these teaching hospitals is the spiralling number of new records generated annually. In 1994 the number of new patient files

created at the Korle-Bu Teaching Hospital, was approximately 22,000, rising to about 26,000 in 1995, and an estimated 29,000 in 1996. Between 1997 and 2002 Korle-Bu had generated over 100,000 new patients' files. During the same period, Komfo Anokye Teaching Hospital got over 18,000 records in 1994, 21,000 in 1995, and 23,000 in 1996.

Meanwhile, to worsen this inordinate annual increment, the overall number of files accumulating in the teaching hospitals also continued to mount by the year because there were no general policies and guidelines on disposal of records. This snowball effect had its repercussions on problems of storage, accessibility and maintenance. As a new crop of records topped the existing paper mountain, records updating became increasingly prone to error, which in turn easily led to more difficulties in separating the current from the non-current stock making systematic access to them tiresome and difficult.

Records Transfer Policy and Procedures

Records staff in both hospitals indicated that shortage of non-current storage space was the greatest obstacle to effective records management. In reality, this issue is symptomatic of another problem. Ghana had no national policy on medical records, no centrally-determined criteria for the retention, and disposal of old records, which hospital medical records department could translate into viable institutional strategies and provisions for life cycle management.

Without the requisite provisions for old records, there is no alternative to keeping records safe, and, in theory, accessible within the department for as long as possible. When the space demand for newly created records becomes too acute, the oldest non-current records are relegated to virtual lumber-rooms. There they remain until the space is filled to capacity and a mass cull takes place – or records deteriorate of their own accord. Worse still, because the volume of newly created records increase over time, records are retired prematurely. Although in theory (by custom) teaching hospitals keep current records for ten years from the date of last attendance, the true situation was that lack of storage space appears to be the sole criterion for retiring records from active storage. In endeavouring to gain control of non-current records stockpiles, teaching hospitals have all practised a piecemeal or *ad. hoc* approach. This philosophy has failed to produce the desired results because they do not slot into a coherent, total records programme. In both hospitals, records were indiscriminately destroyed in bulk, regardless of their future value for lack of space.

Clearly, the issues surrounding the preservation of patient records are too critical for a haphazard approach. By all the canons of records management, lack of storage space can never validate the consignment of records to destruction. Valuable records should under all circumstances be saved. Furthermore, as the volume of newly created patient records increases, more problems are likely to surface. Rather than waiting for that moment, remedial steps should be taken now.

Personnel

The study found that none of the hospitals investigated retained a medical record staff with the requisite training in archives and records management. Records staff had mainly qualifications and training in statistics, with little knowledge of managing records.

Retention Policy Considerations: Some Lessons from Abroad

A number of factors influence the decision on how long medical records are to be kept. They could be legal, medical or institutional. Legal considerations include state statutes, administrative regulations and statute of limitation. Probably the most significant reason for the retention of case notes and the one most likely to lengthen retention periods was the need for such records in litigation or historical and epidemiological research. Other factors that bear on the exercise of management discretion in developing a record retention policy include the availability and cost of safe and secure storage space, the feasibility and cost of preserving records through microfilming or some other minification process, and retention requirement imposed by law. Countries like Great Britain, the United States of America, Australia and The Gambia, with varying degrees of success, has applied these considerations or guiding principles. The statutory and regulatory guidelines of these countries could be studied for comparison. The International Records Management Trust (IRMT) can confirm that most Commonwealth countries have retention schedules modelled along the British example with modifications to suite local conditions.

In Great Britain, the statutory guidelines for the retention and destruction of health records in England and Wales are covered by the Department of Health Circular HC (89) 20 as amended by HC (1999/053), and for Scotland by the Scottish Health Memorandum 60 of 1958 (SHM58/60) as amended by the National Health Service Management letter (MEL 1993) 152. Table 1 gives a summary of the minimum retention periods that obtain

in Great Britain. While these terms are 'not legally binding, in general they reflect the statutory time limits for legal action to be taken and thus any hospital which ignores them would run the risk of being unable to defend itself against claims of medical negligence (Maxwell-Stewart, 1996).

In the United States of America, most states, by either statutes or regulations, maintain minimum retention requirements applying specifically to medical records. Actual retention periods vary – from three years in Arizona, to perpetuity in Missouri – and typically run from the day of discharge or the most recent patient care usage. Furthermore, the American Hospital Association and the American Health Information Management Association insist that destruction of records after ten years is conditional upon hospitals retaining basic data, which must at least include dates of admission, operative reports and discharge summaries of all records destroyed. In states which do not have specific statutory or regulatory requirements with specific application to medical records, these are subject to limitatory legislation (Avery and Imdieke, 1984). This is also the case of The Gambia, where an 8-year minimum retention period for patient records with comparatively recently adopted under the provisions of the Limitation Act of 1987 and the Public Records Act of 1993 (Government of The Gambia, 1995).

In Ghana, the Limitation Decree of 1972 governing tort and contract actions (Limitation Decree, NRCD 54, 1972) could similarly offer a sound legal foundation for developing retention and disposal schedule for medical records. The decree provides for suits for negligence, nuisance, and breach of duty becoming statute-barred after three years or twelve in exceptional circumstances. As this period coincides with the period during which health institutions are most likely to need records in connection with malpractice suits, the Limitation Act provides a ready-made starting point for drawing up a minimum retention policy for medical records. It must be emphasised, however, that legal counsel should be continuously consulted to determine the rule of law that applies. Furthermore, the multiple uses and users of the medical record mean that in coming to decisions on retention strategies suited to Ghana, record usage is certainly one area that merits serious consultation with the interest groups, like different kinds of historians, statisticians, epidemiologists and clinicians. Observations by some medical records officers indicate that except for relatively short-term research objectives, demand for old patient records in Ghana (even in epidemiological and historical work) is limited. Nonetheless, it would be disastrous to take this at face value and assume that the low level of current demand for old patient records under conditions as they are is any yardstick for how much interest there could be under different, more attractive structural conditions. The important lesson to be drawn from the British, American and The Gambia, examples is that the key to a

viable retention policy is to avoid any attempt to impose universal rules but to apply different criteria to the different kinds of medical records.

Table 1: Retention Period of Medical Records

Type of Record	England and Wales	Scotland
Obstetrics	25 years, 8 years if child's death was prior.	25 years from birth (including stillbirth)
Children and Young Persons	25 years from birth; 26 years if patient was aged under 17 on conclusion of treatment; 8 years if death was prior.	25 years from birth; 3 years if death was prior
Mentally Disordered	20 years from conclusion of treatment; 8 years if death was prior.	Indefinitely for records created prior to 1 January 1961; all other records 3 years from death
Oncology	8 years from conclusion of treatment	3 years from death: destruction thereafter subject to consent from consultant in charge
Pre- 1948	8 years from conclusion of of treatment	Embargo on destruction of all pre-1948 records
Clinical Trials	8 years from date of last trial (EU directive).	15 years from date of last trial (EU directive)
All Others	8 years from conclusion of treatment.	6 years from date of last entry; 3 years if death was prior.

Source: Hamish Maxwell-Stewart et al. Hospital Patient Case Records: A Guide to their Retention and Disposal, p.3.

The Public Records and Archives Administration Act, 1997

In Ghana, the Public Records and Archives Administration Act (Act 535, 1997) provides an institutional framework for the management of public sector records. Section 8 of the Act clearly and explicitly defines the responsibilities of the Public Records and Archives Administration Department (PRAAD) to include the development and implementation of record-keeping policies, and the promotion of records management principles, standards and guidelines in public sector organisations. Reciprocally, public institutions are enjoined by Section 9 of the Act to cooperate with PRAAD in promoting efficient records management programmes and to ensure among other things that retention schedules are developed and implemented. By these provisions, the Act sets out the essential legal groundwork for collaborative decision-making on public sector records management between PRAAD and public sector organisations, giving both a broad mandate for action.

It follows that teaching hospitals, by virtue of being government-controlled, are by extension, public agencies, which must be operate within the Act. It is important to note that the Act makes no direct mention of medical records. However, the view is commonly held by PRAAD and hospital officials that the Act does provide the basic parameters within which institutional policies and procedures could be developed to guide the management of patient records through the life cycle on the basis of viable retention and disposal schedules.

Interestingly, however, it emerged from investigations that PRAAD had never attempted to enforce the provisions of the Act in hospitals after nearly six years of its promulgation. Hospital authorities had also not taken advantage of the provisions of the Act. This inertia appears to be the crucial factor in the crisis, which is affecting the preservation of medical records in Ghanaian hospitals.

Options for Long-Term Retention

It is essential that any records management programme should incorporate a variety of options offering proven solutions to the question of records accumulation. These options, according to the literature, are (a) destruction of all patient files no longer required for continuous patient care (b) files conversion to space-economical formats, and (c) weeding/culling.

Reed (1987) suggests that whichever of these courses of action is selected, the choice should always be determined by reference to the value and physical characteristics of the

records. In what follows, these three options are reviewed and their relevance to the Ghanaian situation discussed.

Destruction of Files no longer Needed for Continuous Patient Care

This has always been considered a somewhat radical approach to which institutions would not normally resort unless all other possibilities have been exhausted. Accepting that not every individual patient case files should be kept in perpetuity should not under normal circumstances be an argument for destroying the lot. Reed (1987) has argued that in the case of hospitals, whose leading role in medical research is reflected in their records, this would be a particularly disastrous strategy. Indeed, whenever this approach was brought up as a solution during survey, medical record personnel and health administrators were unanimous in thinking that some of the records could be useful to research in the long term and ought to be preserved. However, formal quantification of the requirement for, and utility of medical records in, and the long term audit still needs to be investigated in Ghana.

Files Conversion into Space-Economical Format

The principal options here are microform, which involves photographic miniaturisation on to film (microfilm) or fiche (microfiche), and optical disc technology. Optical disc technology, which involves electronic conversion on to CD-ROM, is fast becoming the favoured option among the well-endowed and intensively used research organisations in the wealthy parts of the world. This technique provides security for an archiving medium, as it can never be accidentally or deliberately wiped off. Further, since the information is held in a series of images and not as text files, individual scanned pages cannot be updated or modified. The technology is consequently likely to be of value for the storage of medical records requiring no further updating. However, as optimal use of the technology requires widespread distribution of expensive equipment, this cannot be considered a feasible solution for Ghanaian hospitals at present.

The survey revealed that as a solution to the storage problem, health officials had considered the microfilm option, but no firm decision had been taken on this. Microtechnology offers the advantage of eliminating bulk storage while preserving documentation in its entirety. Maxwell-Stewart (1996) reports that filmed records occupy only about two per cent of space required to store paper records. Significantly, however, Maxwell-Stewart (1996) has noted that since the late 1970s and early 1980s, microfilm has become increasingly unpopular in Great Britain "following the finding of the

Committee on Departmental Records that the cost involved were comparable with storing the material in its original paper format."

For some reasons, this author holds the view that microfilm would not be the most expedient solution to the records problem encountered by Ghanaian hospitals. Firstly, the stockpiles of records currently held in hospitals, though worrisome, are not so overwhelming as to justify microfilming as a solution. Hospitals are facing storage problems mainly because basic retention and destruction policies are lacking. Until a well-structured medical record management programme backed up by well-thought-out policies and procedures is in place, any attempt to apply any form of bulk reduction technology is likely to compound problems rather than solve them. Reed (1987) sums up the situation when she reasons: "for a microfilm program to be an effective solution to records problems, it needs to be an integrated part of the records system, not an attempt to solve only the problem of ... old records". A record disposal programme structured on well-designed procedures will go a long way towards alleviating the storage problem.

Secondly, the long-term research value of the records has not been ascertained. Unless the content of patient medical files are of special significance, or unless they are considered to have a high research and reference value, permanent retention on microfilm may not be the most appropriate response to the bulk problem in Ghanaian hospitals. There is thus a clear need for prior deliberation and planning before any microfilming takes place.

Retention of a Small Proportion of Total Record Holdings

The third solution is retention of a small percentage of records. This can be done by two approaches, weeding or sampling. Weeding, also known as culling, is a procedure to reduce volume by removing portions of records which are adjudged inessential (beginning with duplicate and irrelevant material). In the hospital context, weeding within individual folders enables the preservation of selected portions of all patient records to be secured, and the divesting of materials of lesser worth. Given the classification of medical records discussed, it should be possible for stakeholders (in the Ghanaian context) to agree that secondary documents would only be retained for a limited period. All other transitory documents could be discarded while primary documents are kept together with the summaries or significant recordings. Such is the practice in the Province of British Columbia (Canada), where primary and secondary documents are kept for ten and six years respectively, after the last date of discharge. Transitory materials are destroyed six years after the final completion of the medical

record. These specifics, notwithstanding, hospital officials have legal authority to retain much longer, documents which in their discretion may have continuing research value (Howell, 1984). The process involves the rapid assessment of the value of material in relation to its possible future use. Since this can be an extremely time-consuming procedure, it should be embarked upon if the items to be removed are easily identifiable, and if their removal would make a demonstrable difference to the total volume of records. As a safeguard, (Peace, 1984) suggested that whenever weeding is undertaken, it is useful to retain prototypes of what was removed, so that a complete operational content of files can still be reconstructed for research purposes. Kearsey (1989) warns that this kind of procedure should not be perceived as a substitute for proper records management and that health institutions should not resort to it as an expedient solution for storage and bulk problems. This procedure is useful when records become due for destruction.

Sampling is the another approved method of retaining only a proportion of non-current records. With sampling, the objective is to reduce the volume or quantity of records while at the same time preserving general information content in a usable form. Archival practice recognises four types of sampling: purposive, specimen, systematic, and random. The principles underlying these as well as their merits and demerits are well documented in the literature (Hull, 1981). Sampling demands a high level of expertise from selectors, who would be required to predict and provide the future of documents demand. If properly applied, sampling can substantially reduce the volume of original records without harming their research potentials. The destruction of any set of records is irreversible. But with the professional input of archives workers, hospital administrators can carry out procedures of this nature ensuring that the long-term research value of their records has not been affected. An instance of the implementation of sampling as an option was put into effect in 1986 at Sydney Hospital in Australia. It was decided among stakeholders that a combination of random sampling and selective/purposive sampling should be applied to files created from the time the hospital had an active teaching and research role (Reed, 1987). Given the particular attributes of problems associated with alternative long-term retention methods, it is evident that there can be no universally applicable prescriptions for how best to retain records on long term basis. A flexible mix may be necessary. The factors to consider, depending on local circumstances, will include:

- The financial resources available
- The decisions made by senior medical staff on how long and in what form to retain medical records after statutory retention periods have elapsed
- Interest of various stakeholders such as medical and social historians, demographers, epidemiologist, etc.

Conclusion and Recommendations

There is no doubt that there is a disorder in medical records management in Ghana, but this could be solved with a three-pronged approach. First, well-defined national medical record policies and guidelines will have to be developed. Second, hospital management – who would have to provide logistic support in the form of storage facilities and general administrative back-up will have to be mobilised. Third, records departments will have to restructure their management and organisational practices.

A well-defined national medical record policy is inseparable from the issue of appraisal criteria on the basis of which retention, preservation and destruction schedules can be formulated so as to ensure longer-term documents selection of manageable dimensions. Two sets of identification and selection criteria will have to be developed: one for in-hospital non-current collections and the second for ultimate consignment to destruction or archival repositories. The first is by far the more urgent problem. Another issue, which can wait, is abstracting and microfilming, neither of which are solutions to stockpiles, but techniques for dealing with old records. For the time being, it is important to establish the criteria for identifying and selecting the comparatively minor component of interesting, non-current material that hospitals should keep in designated records centres.

From this naturally arises the issue of legitimising the position on archival and other long-term storage interests. This would remove what has to all intents and purposes been an insurmountable barrier to any records related to historical research. Here, effective liaison between individual health institutions and the Public Records and Archives Administration Department (PRAAD) is an absolute imperative. Under current legislation, PRAAD's mandate places no restrictions on its potential competence to assist in establishing retention and disposal schedules, policies, guidelines and protocols that would set the framework for a holistic approach to the management of patient records.

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Newspaper Use for Satisfying Basic Information Needs in The Polytechnic, Ibadan Community, Nigeria

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Abstract

This article discusses the use of newspapers for satisfying basic information needs in The Polytechnic, Ibadan community. Social survey research was employed in carrying out the research. Questionnaire and observation were the data collection instruments used to establish newspaper usage, respondents' interest in newspapers and their feelings after newspaper consultation. The findings reveal that newspaper information plays a dominant and satisfying role. The respondents expressed satisfaction, with the content and uptodateness of newspaper information. Specific topics considered to be the preferences of readers are also highlighted in the study. Some implications of the study on library services are provided.

Introduction

Information is power, there is no doubt about this. There is a universal agreement that information is important, and it cannot be underestimated. Information has therefore been classed by Berezi (1981) as the fifth factor of production, and according to him, increasing the information component of the input factor mix definitely improves productivity. The need for adequate, timely and up-to-date information in taking both personal and corporate decisions has often been stressed. One of the means through which information is transmitted is the newspaper, which is hereby referred to as newspaper information. Daily newspapers are accorded a great deal of importance in most countries In most cases, the source of many policy changes, priority changes and even interest changes has been the information read on the pages of newspapers. The newspaper medium has developed and has overshadowed the radio and television as mass communication tool in terms of access, permanence, concretisation, and even in terms of

growth. A newspaper contains ephemeral information which becomes stale as the day passes by. But some newspapers are known to contain articles of research value and intelligent reviews. This is apart from having the advantage of being up to date which may be lacking in books whose editions cannot be revised quite often. Such newspapers are kept and filed by subject for further consultation or are indexed by libraries.

Newspaper information has thus become an integral part of today's information sources. But the major thrust of newspaper information today has been in the areas of investigative, educational, occupational, social and business information. Newspapers have also been an intrinsic element in waging social revolution or campaigning for change in social structure (Smith, 1979). Newspaper readership has also been on the increase following an upsurge in the literacy level, and the reintroduction of printing in the local languages. The media houses themselves have employed ways to sustain the interest of their readers, often with eye-catching cover titles, adequately researched academic articles, good literary reviews, etc.

The impact of newspaper reading has often been stressed. While the publishers of newspapers know the impact of their products, they may not be adequately equipped to know the extent of that impact. Newspapers sell a combination of products – news, features and advertisements. One of the theories of the press – the social responsibility theory postulates five functions of the media. One of them is that the media should give citizens full access to all relevant information.

One basic strength of newspapers compared to other media is accessibility of information, whereas a basic weakness of television and radio media is the lack of an adequate information supply system that could provide news and other information desired outside the time frame of broadcasting hours. By this it may not be possible to respond to the time when the information is needed.

In an attempt to further satisfy the ranging information needs of its customers, many newspapers have introduced many human interest stories. Many have introduced the news section that package utilitarian information of the kind formerly regarded as the province of specialised journals. Some have even delved into yellow journalism where all available means are employed to catch the attention of readers.

The importance of newspapers as an information source was highlighted in Aiyepeku's (1982) study on information utilisation by policy makers. The study revealed that 84% of

the policy makers consulted newspapers and magazines and this ranked among the five most consulted information sources utilised by policy-makers in Nigeria. Every exploit in life and research is a product of information. Writing on the symbiotic relationship between newspapers and libraries, Ekpu (1985) stated that newspapers gather materials to perform the time-honoured functions of informing, educating and entertaining their readers. Newspapers invariably generate information which libraries find valuable to preserve for the purpose of meeting the needs of the patrons. In like manner, Fadiran (1988) noted that since newspapers record events and activities that take place in the country, newspaper libraries are therefore rich sources of research materials for the humanities and social sciences. Also writing on the importance of the newsmagazines, Olorunsola (1997) posited that it helps students, researchers and faculty to be well-informed about current events. He concluded that the knowledge gained from reading the newsmagazines helps to build a whole man.

In this article, newspaper information is recognised as vital in modern day-to-day living. The premise of the discussion here is that since The Polytechnic, Ibadan is an academic environment, newspapers would be an important reference point in the daily life of the community. Hence, in this study, the newspaper contents that best satisfy the information needs of such a community would be highlighted. Also for practical reasons, this study would be restricted to the Polytechnic Ibadan community and to newspapers available at The Polytechnic, Ibadan library.

Methodology

An important element in social science research is the use of the survey method to improve research studies. A curious observer may like to ask what those people at newspaper stands every morning want, and whether they are able to satisfy their curiosity for information? It was a similar curiosity at The Polytechnic, Ibadan that prompted this study.

Hence, the readers that crowded around the newspaper section in the serials unit of the Polytechnic Library, each waiting to get his turn at the papers, were studied for sometime. The social science as we all know is rooted in observation. The observation made on the readers of newspapers also helped in the design of the questionnaire, which was the main data collection method used. The questionnaire was a brief structured one designed to establish newspaper usage, the items of interest and readers' feelings after each newspaper consultation. In selecting a sample, the availability sampling procedure

was adopted. By this sampling method, all those people that crowded round the newspapers or those people reading the back issues were automatically selected as prospective respondents. The availability sampling procedure is particularly appropriate to this situation where respondents can be found in a particular situation and are interviewed immediately on the spot.

Great care was also taken to avoid duplication of responses. Each respondent was asked if he/she had ever filled the questionnaire previously. Respondents who were either in doubt or were not interested were excluded from filling the questionnaire. The questionnaire was administered to staff and students of The Polytechnic who came to read newspapers at the serials section of the library. Each respondent was given enough time and opportunity to fill the questionnaire but respondents were not allowed to take it out of the library. In the administration of the questionnaire, there was no attempt at controlling either the student/staff ratio or the academics/administrators/junior staff ratio. But at the end of the collection, all the different segments of the institution were represented.

The data were collected over a two year period with stop gaps during labour strikes/students disturbances, holidays and examinations. The collection of the data started towards the last quarter of 1999 and ended very early in 2002. The period of collection had to be prolonged because of incessant closure of the institution (the school was closed for over a period of seven or eight months in the year 2000 alone) and strict control to avoid double completion of the questionnaire by some respondents. Two hundred copies of the questionnaire were administered but 178 copies were considered good for analysis. The other twenty-two copies were excluded for improper completion, many omissions and inconsistencies. This represented 89% success rate.

Findings

The Polytechnic community consists basically of staff and students within the confines of the institution. Newspaper readership in the community is dominated by the males as shown table 1. This is probably to confirm the male dominance in the society and the

interest for current newspaper information by the male folk as witnessed in newspaper stands every morning.

Table 1: Distribution of Respondents by Sex and Occupation

Sex	Students	Staff	Total	% of Total Respondents N= 178
Male	87	66	153	85.9
Female	15	10	25	14.1
Total	102	76	178	100
Percentage	57.3	42.7		

The table above has shown that the study was dominated by the male folk. With 86% male population, it is expected that masculine information would be highly sought after on the pages of newspapers. The students/ staff ratio of 57:42 is also a good starting point for analysis. It should also be expected that the rate at which the respondents read newspapers would differ. Some people are avid newspaper readers while some are occasional users. Table 2 indicates the rate of newspaper usage.

Table 2: Rate of Newspaper Usage by the Respondents

Rate	Students	Staff	Total	% of Total Respondents N = 178
Very often	41	36	77	43.3
Often	37	23	60	33.7
Occasional	24	17	41	23.0
Total	102	76	178	100.0

There is a clear indication in table 2 that a greater proportion of the population read newspapers very often. Generally, the proportion that read newspapers regularly (often and very often) was 77%, with the 23% who were occasional readers. Respondents were asked to indicate the time duration for which they could cope with the absence of newspapers. The findings are very revealing as shown in table 3.

Table 3: The Period Respondents can do without Reading Newspapers

Extent	Students	Staff	Total	% of Total Respondents N= 178
1-3 days	67	59	126	70.8
4-7 days	14	10	24	13.5
1-2 weeks	9	4	13	7.3
2-4 weeks	3	2	5	2.8
1-2 Months	3	1	4	2.25
2 Months	2		2	1.1
Not filled	4		4	2.25
Total	102	76	178	100

It is apparent from the above table that newspaper information is very important to the community to the extent that 70.8% of the population cannot do without reading newspapers within three days and 84.3% cannot do without newspapers in a week. To such people newspaper information is so paramount to their lives that it has become part and parcel of them. To them, the effect of newspaper blackout is easily noticeable as it is manifested in changes in their normal behaviour as revealed in table 4.

From all indications, it can be seen that newspaper information plays a basic role of information provision and consequently enhances satisfaction. Table 4 reveals that only 4.5% of the respondents felt not affected by newspaper blackout. The rest, which is over 90%, felt one effect or the other. The effects ranged from uncomfortability, unhappiness, inconsistency, to lack of knowledge on current developments. To this kind of people, the ability to grasp the required information on the pages of newspapers elicit series of behavioural changes as shown in table 5.

From the foregoing, it is clear that newspaper information evolves some actions that solve basic information problems. All the respondents (with the exception of the 12.4% that did not fill that portion) expressed interest in newspaper information. Educational, political and sports information alone accounted for 61.5% of the information needs of the respondents. If this is extended to cover business, employment and health information the first six needs would account for an overwhelming 93.5%.

Table 4: The Effects of Newspaper Blackout

Effects	Students	Staff	Total	% of Total Respondents N= 178
Uncomfortable	29	21	50	28.1
Not sociable	11	6	17	9.6
Not up to date during discussions	46	28	74	41.6
Incommunicado	8	12	20	11.2
No Effect	3	5	8	4.5
No Response	5	4	9	5.0
Total	102	76	178	100

Table 5: Behaviour of Respondents After Locating Required Newspaper Information

Behavioural Actions	Students	Staff	Total	% of Total Respondents N = 178
Satisfied	46	35	81	45.5
Good/Relieved	21	13	34	19.1
Entertained/More informed/Updated	13	16	29	16.3
Contented	5	2	7	3.9
Able to Compare events	3	2	5	2.8
No Response	14	8	22	12.4
Total	102	76	178	100.0

In an academic setting the need for educational information is understandable. And so with 24.1% it topped the list of information needs met by newspaper information. Also, with the current political dispensation in Nigeria, it is expected that political information would also be needed, hence it was not surprising that 21.4% of the respondents said that newspaper met their need for political information.

Table 6: Information Needs met by Newspaper Reading

Information Needs	Students	Staff	Total	% N = 557
Educational Information	77	57	134	24.1
Political Information	71	48	119	21.4
Sports Information	53	36	89	16.0
Business Information	45	28	73	13.1
Employment Information	25	29	54	9.7
Health Information	25	26	51	9.2
National/International Issues	4	-	4	0.7
Spiritual /Religious Issues	2	1	3	0.5
Entertainments/Art/Literary/ Cartoons/Editorial Opinion	7	8	15	2.7
Real Estate/ Cultural/Security/Obituary	8	5	13	2.3
None	2	-	2	0.3
TOTAL	319	238	557	100.0

The study went further to examine specific topics under the first six information needs that readers sought in the newspaper as summarised in table 7.

Table 7: Specific Topics Sought in Newspapers

Information Needs	Specific Topics
Educational Information	Science news, English construction, educative stories, research, news relating to history, articles/write ups, quotable quotes, literature, new discoveries, technology, language and style, academics, course-related information, news on The Polytechnic, Ibadan science page, computer life, for assignments, information technology, debate, counselling, higher institutions admission advertisement.
Political Information	Regional news, national news, foreign news, political features, letter to editor, current affairs, life story, global update, government policies, national affairs, daily events, quotations, public opinion.
Sports Information	Sports update, football, sport pages, complete sports.
Business Information	State of the economy, foreign exchange, business marketing, financial market news, Nigeria Stock Exchange, banking information, business update, financial information and reports, accounting related news, equities and bonds, money matters, marketing mix, commerce, business news.
Employment Information	Job opportunities, advertisement, job vacancies, employment news and opportunities, application formats, job openings.
Health Information	Medical and health news, medical enlightenment, health matters, living, first aid treatment, natural health, family matters.

Implications of Findings for Libraries

The importance of newspapers to The Polytechnic, Ibadan community has been demonstrated in this study. It has revealed that newspapers perform greater roles than imagined. It then becomes important that newspapers should be an important component of library acquisitions. In view of this, therefore, there should be an increase in newspaper budgets. There is no doubt that some of the respondents read newspapers for relaxation in newspapers and should be encouraged. Reading newspapers is widely known to broaden the students' knowledge. If newspapers are available at many points of the serials section of the library, students would feel free and be confident that when they

come to the library, they would get papers to read. Gradually, library users would increase in number, the library will be more useful to the clients, the library usage could be boosted, and the purpose of the library would be fulfilled.

Conclusion and Recommendations

One of the greatest impediments to success in life is the inaccessibility to relevant information. Newspapers are one such source of relevant and timely information. It is therefore seen that access to newspapers is one of the basic sources of satisfaction to those people who are addicted to it. There is some correlation between satisfaction, motivation and job performance. The satisfaction derived from newspaper reading is a good motivation in this respect. Newspapers are also known to be a very good source of information on the opportunities that exist outside our immediate environment. Such opportunities exist in the form of vacancies, business, school admissions, health, politics, etc. For a place like The Polytechnic, Ibadan, educational, political, sports, business, employment and health information on the pages of newspapers could play great roles towards satisfying these needs on these topics.

From the importance of newspapers outlined above, it can be seen that newspapers are highly needed in our libraries in order for them to fully perform effective roles in their communities. And so for those libraries that do not acquire newspapers (some small libraries), efforts should be made to prepare a budget for newspapers by convincing the management or the higher authority on the need for newspapers in such libraries.

For those libraries that are already acquiring newspapers, efforts should be made to increase the newspaper budget. This is necessary to ensure a steady supply of newspapers at a period when price increases are announced at short notices and at times about twice/thrice within a year. Budget increase would also be necessary to ensure increase in the number of titles and number of copies. The number of newspaper reading points in large academic libraries need to be increased to reduce the number of readers who would feel disappointed due to the size of the crowd at the reading points.

Students who read newspapers regularly could also discover items of interest which are course related. Lecturers would therefore be helping their students if they are encouraged to read newspapers regularly. In this way, those who do not read newspapers may be influenced to develop the reading habit.

Back issues of newspapers in libraries should be cumulated in bunches, while at the end of the year, the whole annual volume could be bound to ensure its safety. Libraries could also microfilm back issues. This is because back issues could be useful for answering clients' queries anytime.

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Library Computerisation at the University of Benin, Nigeria

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Abstract

The paper gives an outline of the history of automation in academic libraries in Nigeria. It tries to enunciate the conditions necessary for computerisation as well as the criteria for choosing software in Nigerian libraries. The paper also describes ongoing computerisation of library operations at the John Harris Library, University of Benin. The software of choice is SLAM – Strategic Library Automation Management.- which is developed by a local library systems consultant and runs on the Oracle DBMS platform. The paper reviews the different modules of the software, and its advantages over other library automation software.

Introduction

Traditionally, libraries are repositories of human knowledge and culture, so emphasis had always been on collection development. The present information age has however necessitated a paradigm shift from just information provision to access to information. This paradigm shift was in turn caused by the advent of the computer. Computers enable us to get more accurate and cost-effective knowledge to assist in decision making; reduce the tedium of getting results through manual operations; mental and physical efforts in tackling some tasks and inefficient practices; and enhance improved customer services (Awe, 1997).

Major computer applications to the processing of bibliographic information did not begin until the early 1960s when the Chemical Abstracts Services first presented machine - generated alphabetical subject index to 600 influential journals produced by *Chemical Abstracts*. Also within this period, the United States Library of Congress produced the (Machine Readable Catalogue (Falaiye, 2002). Automation of library operations has

gradually become a necessity and most academic and research libraries the world over have become automated or are in the process of automating their processes.

All the subsystems within the library can benefit immensely from computerisation. Records in acquisition can be maintained with the assistance of all kinds of lists – on-order, new arrivals, accessions, book dealers' performance rates, etc. Automation could reduce the tedium of cataloguing, as information can be transferred from the acquisition module to the cataloguing module. It facilitates the establishment and maintenance of an On-line Public Access Catalogue (OPAC). Automation is very useful in inventory control and the preparation of statistics. In circulation, automation facilitates the process of locating and lending materials; generation of user records and instant status information on items on loan. Output records such as customised reports, overdue notices, reservation and usage statistics are better processed with computers. The preparation of such lists as printed circulations lists, subject lists are easily done with computers. For the serials subsystem, automation facilitates journal subscription control, order preparation, accounting, cataloguing, preparation of serials records entries and transaction control (Olanlokun and Salisu, 1993; Ogunrombi, 2003).

The history of computerisation in Nigerian academic libraries dates back over 30 years. The initial efforts were in 1973 when Nigerian universities first generated serials listings on computers. From then on, various attempts were and are still being made at full automation of library processes by academic, special and research libraries. In July 1984, the International Institute for Tropical Agriculture (IITA), Ibadan, blazed the trail of full automation when it converted its library's catalogue to the Online Public Access Catalogue, thereby creating the information system ALISTRA (Automated Library and Information Services for Tropical Agriculture) (Adedigba et al, 1995). The system, based on an integrated database developed with BASIC software, has all catalogue, circulation and acquisition records integrated so that they can be searched at the same time. Other research libraries like the Nigerian Institute of International Affairs (NIIA) Lagos and the Raw Materials Research and Development Council (RMRDC) soon followed in 1991 using the TINLIB and the CD/ISIS software respectively. Being dissatisfied with the CDS/ISIS, the RMRDC decided to develop software that would be more "user friendly." Thus, they settled for Oracle and Fox Pro software in developing their own software, and the end result was the XLIB software, which is complete library management software with provision for all aspects of library operations (Uga, 2001).

University libraries, being larger and more complex than research libraries, were naturally slower at adopting automation. The Abubakar Tafawa Balewa University,

Bauchi began the process by experimenting with the computerisation of its acquisition operations in the 1988/1989 session. Next in line was the Ladoke Akintola University of Science and Technology Library, Ogbomoso, which commenced computerisation of its activities in 1991 using the TINLIB version 250 which it later upgraded to 270.

The first generation universities in Nigeria really got serious with automation when the Nigerian Universities Commission (NUC), through the World Bank facilities in the 1994/95 session, acquired and distributed to some federal universities 386 ICL computer systems along with 4-user TINLIB software (Falaiye, 2002). Only a few universities were able to make some headway with the TINLIB software after a lot of adaptation. The Kenneth Dike Library, University of Ibadan was able to generate computer readable tickets as at December, 1995. Hezekiah Oluwasanmi Library, Obafemi Awolowo University, Ile Ife, created its own database with the with TINLIB software.

University of Benin Library's Experience

University of Benin was established in 1970 as Institute of Technology but later became a conventional university with academic disciplines in such fields as the sciences, engineering, medical sciences, social sciences and the humanities. There are twelve faculties/institutes in the university. It is one of the first generation universities in Nigeria and currently has a full-time student population of about 26,000 (twenty-six thousand) and a faculty of well over eight hundred.

The university library system comprises of the John Harris Library (main library), a branch library at the Ekehuan Road Campus and faculty libraries. The University of Benin was one of the federal universities that benefited from the Federal Government assistance through the National Universities Commission / World Bank facilities in the 1994 – 95 period. During this period the university received a total of 17,000 volumes of monographs, 344 journal titles in addition to the installation of a 386 ICL-computer system and 4-user TINLIB software to initiate automation in its library. Unfortunately, as a result of unpreparedness, the library did not make much progress with the automation programme. Although the university began its computerisation programme in the early 1990s, the library was not at all involved. The actual process of computerisation of the library operation was between 1999 and 2003. In April 2001, tenders were sought from qualified computer vendors for the contract of automating the

libraries. The contract was awarded to Global Software and Technologies Ltd., Benin City. Consequently, in January 2002, funds were made available for the take-off of the automation project.

The University of Benin Library computerisation exercise is a part of the general computerisation efforts going on in the University. From the early nineties, the University of Benin started massive computerisation of some of its operations. As at the time of writing this paper, the Vice Chancellor's office, the Registry, the Bursary, Academic Planning, Faculty and Departmental offices, Students' records, Students' account, Personnel Divisions have been computerised. There is an Information and Communication Technology Committee which coordinates these processes. Under University of Benin Technologies Ltd, there is a cyber cafe where staff/students can access the Internet for a token fee. The residential quarters are also being networked for Internet access. The increase in student population, coupled with the complexity of new academic programmes and increase in the acquisition of library materials catalysed the automation of the library.

Preparation for Computerisation

The library management set up a Library Automation Committee to work out the modalities for automation. This committee worked with the Central Information and Communication Technology Committee (ICTC) of the university. Meetings were held weekly to assess the human and physical facilities on ground. The physical features considered included power supply, security and air conditioning. To support the national electric power supply, the library had a 500KVA generating plant. The University also had a central power station as a back-up. It was thought that power supply from the above sources would be adequate. The University library has a central air-conditioning unit which is no longer efficient, so split unit air conditioners were installed at appropriate places to ensure the effective cooling conducive for computerisation. Library security was reinforced in order to protect the computers and peripherals. Windows were protected with wire mesh and burglary proof metals. The doors were reinforced with burglar-proof metals.

The library has qualitative human resources. Most of the senior staff and typists are computer-literate. In addition, staff training was made part of the computerisation programme. It was decided that shelf list catalogue cards be used for data entry for each book. If the shelf list card could not be found, then the author/title card could be used.

SLAM – The Software of Choice

The Strategic Library Automation and Management (SLAM) software was selected because it is designed to work the way librarians work. It is a library application software that integrates all library processes into one powerful system. Each module of SLAM follows a similar Window's graphical user interface outline that is designed to make the tasks easy and quick. In many cases the user simply clicks on a button to perform various functions, such as acquisition, cataloguing, circulation, etc.

Among the vendors that bid for the job, the consultant who is also the developer of SLAM gave the most reasonable price. As the developer of the software, he owns the software code and could re-engineer it to suit the specific needs of the library. He is always around to answer inquiries that may arise. SLAM is Oracle-based. Oracle is mature, robust, and stable and has a very secure platform for enterprise-wide information management. Oracle is popular worldwide, and is used in large organisations like Central Bank of Nigeria and Independent National Electoral Commission. SLAM is not used in any other university library yet. It is hoped that when it is fully operational at the University of Benin Library, other libraries might want to adopt it.

The Computerisation Process

The process of computerising the University Library was in three phases. The first phase was the supply and installation of hardware, the second phase was the installation of library software and the last phase was the data conversion. Each of the phases will be discussed in detail.

Phase I: Supply and Installation of Hardware

The requirements of the computer hardware and network cabling to the 23 network points were determined. Table 1 shows the list of items and the quantities delivered.

Table 1: List of Items Supplied

Serial No	Quantity	Item
1.	1	Compaq Proliant Server
2.	20	Pentium III Personal Computers
3.	21	Stabilizers
4	21	Universal Power Saver (UPS)
5.	1	HP Laser 4050N Printer
6.	6	Laser 1200 Printer
7.	3	Bar code reader

Other accessories include: Bar code label papers, printer papers, computer tables, and power cables.

Phase II: Installation of the Library Software

The Proliant server runs on MS Windows NT operating system. The database used is Oracle for windows NT, which resides in the Proliant Server. It also has bar code technology functionality. SLAM has modules that handle specialised library tasks such as:

- Patron management
- Cataloguing and classification
- Serials management
- Circulation control
- Fines, late charges & payment function
- Short-term borrowing
- Binding jobs & orders
- Administrative functions
- Hold & reserve functions
- Auditing trail functions
- Various reports including "students' clearance"
- Advance search capability – catalogue retrieval
- Catalogue card duplication functions
- Computer training – computer appreciation – a total of fifty (50) library staff were trained.
- Training on the application modules – cataloguing and retrieval.

Modules of the Strategic Library Automation Management (SLAM) Software

Cataloguing and Classification Module

SLAM provides a complete catalogue worksheet that allows one to create and manage catalogues. The catalogue window provides a detailed view of a particular catalogue record. Through this window, one can easily capture and access detailed and relevant catalogue information about materials in the library, such as the author(s), title, ISBN, accession number, call number or subject.

- **Quick duplication of catalogue**
  One only has to catalogue a title once. To save time, one can use the duplicate function to make a copy of the current record one wishes to add to. The copy can then be edited as appropriate.

- **Interface with acquisition**
  This allows a cataloguer to retrieve an already entered record for acquired material without having to start from the scratch.

Serial Control Module

SLAM provides a complete serials module that allows one to create records and manage serial collections. The serial module can be used to create serial catalogue records, track subscription holdings, manage serial expirations and renewals, and maintain routine lists. The serial module uses a different set of indices to display, sort and search for serial records.

Circulation Module

The circulation module is very comprehensive, enabling the circulation desk to easily manage loaning and returning of books. SLAM provides many settings and options for circulating library materials.

- Check-out Window provides a quick and easy user interface for checking out items.

- Check-in: This interface was designed for very quick check-ins for the return of materials into library holdings.

- Overdue items: When an overdue item is checked in, the system will present one with the overdue dialogue box to alert one on the overdue status of the items. The overdue dialogue box displays the check out date, due date, return date and any fines due. It will also allow one to charge a fine to a patron's record.
- Reservation

Users or library staff sometimes wish to place an item on reserve for a period of time. Such an item is said to be on "RESERVE" and cannot be checked out of the library. It is only available for use within the library. This is easily done with SLAM.

- Hold

Specific items can also be put on hold for a patron. SLAM can place an item on a virtual hold shelf. Once an item is placed on hold, only patrons on a waiting list may check out the item. If another patron tries to check out the item, a dialogue box will appear indicating that the item is on hold.

- Pay fine

SLAM allows one to easily pay a fine from the renewal/pay fine window.

- Short -term borrowing

The circulation module includes an option for processing short term borrowing. These are usually items that are loaned for use within the library for only a few hours at a time.

Acquisition Module

The acquisition module offers an efficient method for entering and tracking request information for acquisition. Requested items can be classified as Pending, On-order, or Acquired. Once items have been acquired, the data is automatically made available to the cataloguing module.

Properties of Strategic Library Automation Management (SLAM) Software

Catalogue Search

SLAM features a fast search by author, title, subject or keyword. The catalogue information searcher, which is stored in Oracle database, can locate an item from among 1,000,000 items within a split second. Library patrons and staff can now spend less time researching materials in the library.

Patron Records Management

The patron window displays a detailed view of a patron's record. There are several fields within the patron's record window that allows you to enter important information for each patron that uses the library. There is also a circulation tab, which displays all the current transactions for a patron.

Binding Jobs and Orders

When damaged books and serials need to be sent to the bindery, SLAM provides a simple and easy interface for managing such jobs and orders. Through the job window, one can place a job order, update existing jobs, review the status of jobs, etc.

Security

SLAM provides effective security measures to prevent any unauthorised user from accessing the system. Registered users are required to enter a user name, password and database name to access the Oracle database.

Administrative functions

This software also provides options for various system settings and parameters. Examples are the removal of catalogue items, denial of access to the database and the degree of access, and auditing of the collection.

Reports

With SLAM, one can easily generate a lot of reports covering cataloguing, acquisition, circulation, serials, staff and patrons, etc.

Phase III – Data Conversion (Ongoing)

The library is currently at the third phase– retrospective records conversion. Management decided to begin creating the database with the retrospective conversion of catalogue records. All categories of library staff including professional library staff, library typists and library assistants were trained in basic computer operations and the use of the software. The retrospective data conversion is being handled mainly by the consultant and his staff (some of them as keyboard operators). The books are physically brought

down from the shelves and a shelf-list card is withdrawn for each book. Using the card, the data are entered into a catalogue template in the form of a catalogue worksheet. This procedure is also useful for stock revision and verification.

Library Computerisation: Necessary Conditions

The application of modern information technology to Nigerian academic libraries can no longer be ignored as the trend in the information age is towards enhancing business activities through computerisation. Effective computerisation of library processes and functions will bring significant improvement in the information delivery services to the university community. Library automation is a capital-intensive project, which must be carefully analysed, planned and coordinated. The automation project should be done properly so as to get the best results. When embarking on library computerisation, it is very important to carefully consider the following:

- Financial implications
- Networking and structured cabling (Local Area Network)
- Computer hardware – the memory and the hard disk of the system to be purchased should be large enough and the processing speed should be fast. The hardware to be bought should include a complete system: CPU, monitor, keyboard, mouse, printer, UPS for electricity back-up and a stabiliser.
- Library management software
- System and application support (post installation)
- Retrospective conversion and verification of library data
- Staff training
- Alternative power supply for the equipment.

Software Selection Criteria

The single most important element to consider in any library automation is the application software. The software package selected must be able to handle various tasks performed within the library. The programmer and the librarians must work hand in hand to ensure that no details of the work to be done are left out and the correct method is employed for writing the codes so as to give the best result. It is important to determine the IT background of the software company. There is a lot of advantage if the proprietor is the developer of the software, and owns the software code and can thus re-engineer it to suit the specific needs of individual library. Part of the problem with library software use in Nigeria is the near absence of a comprehensive package designed specifically for

Nigerian university libraries. Therefore, each software package should be carefully evaluated for its strengths and weaknesses using the following criteria:

- Integration: does the software provide for data integration? The acquisition data should be available for cataloguing and cataloguing data should be available to the circulation desk.
- Database utilisation: Is it client/server or does it stand alone? Client/server architecture consists of a client process and a server process that can be distinguished from each other, yet can interact seamlessly. The server is able to service multiple clients concurrently.
- Availability of local and technical support, e.g. telephone and on-site support.
- End-user manual.

Conclusion

About sixty thousand (60,000) monograph records have been converted so far. There are at most twenty thousand (20,000) more records to be converted. The computerisation project was to have been concluded by April 2003, but as a result of some local labour strikes, it might now end by 2004. The staff members are overstretched but the joy of automation is visible. Librarians can access and update data in their offices. The users have started accessing the library collection through the On-Line Public Access Catalogue (OPAC). There is initial user frustration now, when materials found on the OPAC are not on the shelf, but this is because the process is ongoing. When conversion is complete these teething problems would be over. With the local area networking (LAN) going on, users would be able to access the library collection from all over the campus without the need to physically come to the library. This is an experience that both staff and students alike are looking forward to.

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Book Review

Organisation of Data in Information Systems by M. Tiamiyu. Ibadan: Stirling Horden Publishers, 2003, 249 p. (ISBN 978-032-077-6)

This book is broad in scope and comprehensive in detail. It covers topics largely in information and library science but also strides across related disciplines such as computer information systems, information technology and communication science. The book covers principles and strategies of organising information-information generation, processing, data communication, document representation, controlled and natural indexing languages and classification systems. This book also covers computerised retrieval systems; bibliographic databases; bibliographic standards; data modelling and data models, normalisation, of databases, data dictionaries, record structures, management of data in organisations, and organisation of data for communication.

Each chapter begins with simple introduction that sets the tone and scope of the subject under discussion and ends with review questions and a comprehensive bibliography for those who may wish to read further on the subjects. The book is logically organised into major sections and sub sections. The sections start with fundamental issues and progressively build up content with increasing degree of sophistication while maintaining the simplicity for ease of understanding. Concepts such as data, information, field, record, file, information systems, entities, recall ratio, and precision ratio are neatly explained and illustrated with real life experience thereby making the content easy to understand.

It is a very simple language and hence easily understood. The book appeals generally to information professionals but specifically to students of certificate, diploma and undergraduate programmes pursuing courses in information and library science, as well as beginners in computer information systems, information technology and communication science. The topics on databases, data modelling, and normalisation of databases are written with such simple language that one rarely finds in books of computer science, information technology and computer information systems. In addition, the topics on cataloguing, classification and string indexing, which students generally find difficult to comprehend are well written with several illustrations.

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Professional News and Events

WALISJE takes off

The West African Library Association of Library and Information Science Editors (WALISJE), which was inaugurated in July 2003, formally took off on 16 January 2004 in Ibadan, Nigeria, when the constitution of the association was ratified and the executive committee of the association elected. The association whose main objective is to improve the quality of LIS journals in Africa elected Dr. S.O. Olanlokun, Editor-in-Chief of the *Nigerian Libraries*, as the President. Other officers elected are Mr. I.K. Antwi, Editor-in-Chief of *Ghana Library Journal*, Vice President; Dr. Emmanuel Dawah, Editor-in- Chief *Borno Libraries*, Secretary General; Dr. Iyabo Mabawonku, Business Manager of the *African Journal of Library, Archives and Information Science*, Treasurer; and Dr. Charles Omekwu, Editor-in-Chief of *Lagos Librarian*, Publicity Secretary. Prof. L.O. Aina of the University of Botswana and Prof. A.A. Alemna of the University of Ghana were elected as Advisers to the association. The membership of the association is open to editors, associate editors, consulting editors, former editors, and business managers of LIS journals in West Africa.

Tsebe Appointed National Librarian

Mr. John Kgwale Tsebe has been appointed as the National Librarian of the National Library of South Africa. Mr Tsebe, until his appointment was the University Librarian of the University of the North, South Africa. He holds a master's degree in Library Science from Syracuse University as well as a master's degree in Public Administration from Harvard University, both in the United States of America. Mr Tsebe is actively involved in many professional activities. He played a major role in the formation of the Library and Information Association of South Africa (LIASA). He was the immediate past chairman of the Standing Conference of African National and University Libraries – East, Central and South, and also chaired a Forum of University Librarians of South Africa. He currently serves on the boards of the South African Library and Information Trust and SABINET.

IFLA Conference to Hold in Africa Again

The 73rd IFLA/Council Conference will take place in Durban, South Africa in August 2007. This will be the second IFLA conference to b e held in Africa. The first IFLA

conference held in Africa was in 1983 in Nairobi, Kenya. It is hoped that many librarians in Africa will avail themselves of this opportunity by ensuring that they attend the Durban conference in large numbers.

Oxford University Press to Provide Assistance on Access to Online Journals in Developing Countries

The Oxford University Press is to assist in providing free (or subsidised) access to many of its online journals until the end of 2004. The offer is made in conjunction with the International Network for the Availability of Scientific Publications (INASP). All non-for – profit educational institutions in developing countries will benefit from this service. For further information, please visit the following websites:
http://www3.oup.co.uk/access/instagmt.html
http://www3.oup.co.uk/jnls/devel/countries. Html
http://www3.oup.co.uk/jnls/devel/journals. Html
http://www3.oup.co.uk/cgi-bin/cs/dev

Forthcoming Conference

August 20-26, 2005, Norway. World Library and Information Congress: 71st IFLA General Conference and Congress.

Theme: Libraries – A Voyage of Discovery: Linking the Future to the Past .
For more information, contact IFLA 2005 Oslo Secretariat, Ann Margaret Hauknes, Secretary General Norwegian Library Association, Malerhaugveien 20 N-0661 Oslo, Norway. E -mail: IFLA 2005@norskbibliotekforening.no

AIMS AND SCOPE

African Journal of Library, Archives and Information Science is established mainly to provide a forum for librarians, archivists, documentalists, information scientists and other information related professionals in Africa to report their research findings but with emphasis on African setting. The Journal is refereed by distinguished scholars. Emphasis is on empirical research; however, manuscripts of high quality on theoretical aspects of the three information related disciplines will be considered for publication.

MISSION

To provide on a regular and sustainable basis an excellent scholarly journal for reporting empirical research findings in the information profession in Africa

VISION

To be the main resource base for library, archives and information science research in Africa

NOTES TO CONTRIBUTORS

Contributors are to submit the manuscript by e-mail file attachment using MS word and a hard copy, typed double space on A4 paper. Ample margins should be provided. The title, author's name, position and place of work should appear on the first page. Subsequent pages, not more than 15, should include an informative abstract of not more than 100 words. A manuscript will be considered only if it has not been published elsewhere.

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Mazikana, P.C. (1987) Archives and Oral History: Overwhelming Lack of Resources. *Information Development*, 3 (1) 13-10.

References to books should be in the following order: Author(s), date, title, place of publication, publisher, pagination, e. g.

Aboyade, B.O. (1989) *The Provision of Information for Rural Development.* Ibadan: Fountain Publications, 104 p.

References to contributors in collected works should be in the following order; authors(s), date, title of contribution, name of the editor, title of the collected works, place of publication, publisher and pagination, inclusive e.g.:

Neill, J.R. and Kotei, S.I.A. (1981) Towards a National Information System for Botswana. In: Inganji, Francis (ed.) *Use of information and Documentation for Planning and Decision Making.* Gaborone: NIR, pp. 36 – 53.

No charge is made for publication. Fifteen copies of reprints of each major article will be supplied to the principal author.

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