Outsourcing information communication technology services in selected public university libraries in Kenya

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Outsourcing is a management strategy that is gradually proving its worth in library and information science. The purpose of this study was to investigate the outsourcing of ICT services in selected public university libraries in Kenya in order to establish the challenges facing libraries in outsourcing ICT services. The study adopted a multi-case study strategy in four selected public university libraries in Kenya. Purposive sampling was used to identify respondents. Data collection was done using a semi-structured interview schedule. The findings reveal that public university libraries in Kenya outsource ICT services such as Internet, e-resources and derive benefits such as cost cutting, knowledge and skills acquisition and economies of scale. The study noted that ICT policies and procurement laws are inadequate in guiding the outsourcing processes. The study found that ICT service processes had various challenges such as high cost and loss of control of the services due to relying heavily on the vendors. The study concluded that there was a need for the library management to be conversant with outsourcing procedures, such as negotiation of contracts, to gain more from outsourced ICT services. The study recommended that the university libraries develop, review and implement ICT outsourcing policies. The university management should involve librarians in the outsourcing process and implementation.

Keywords: Information Communication Technology, Information Systems, Outsourcing, ICT Outsourcing, Public Procurement Act, Public University Libraries.

Introduction and theoretical foundation

This study is largely informed by a theoretical approach provided by Pfeffer and Salancik (2003), Resource Dependency Theory (RDT) and Transaction Cost Theory (TCT) put forward by Coase (1937) and modified by Williamson (1985). Resource Dependency Theory (RDT) theorizes that organizations are dependent on resources that originate from their environment and controlled by other players in the environment. Resource supply depends on the complexity, dynamism and richness of the environment such that a poor environment faces scarce resources. Since organizations depend on the resources in the environment, resources become a basis of power, making legally independent organizations become dependent on others for survival. According to Pfeffer and Salancik (1978), dependence is contingent on how essential the resource is for survival and the degree to which others control the resource. RDT proposes that organizations lacking in essential resources will seek to establish relationships with (i.e. be dependent upon) others in order to obtain needed resources.

Transaction Cost Theory (TCT) predicts when certain economic tasks can be performed by hierarchical governance (in-source) and when they can be performed on the market (outsource) (Williamson 1979). According to Williamson (1985), transaction involves considering all "transactions" as not only the obvious cases of buying and selling, but also as day-to-day emotional interactions and informal gift exchanges. TCT proposes that outsourcing decisions should be made after evaluating transaction costs of producing required infrastructure services internally or buying them externally (Williamson 1979; 2002). Williamson (1985) recommends that decision-makers must weigh up the production and transaction costs associated with executing a transaction within their firms (in-sourcing) versus the production and transaction costs associated with executing the transaction in the market (outsourcing).

RDT considers outsourcing library functions as a strategic decision taken by libraries to secure critical functions for their survival and to fill gaps in their resources and capabilities (Grover, Cheon &Teng 1995). However, in the process of

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outsourcing, those who control the resources required for libraries influence libraries (Pfeffer & Salancik 2003). TCT expands RDT by suggesting that a library has to consider options of whether to in-source or outsource by assessing the transaction costs involved.

Public university libraries rely heavily on the effective and efficient use of ICT to support research and education to remain relevant and competitive. To achieve their objectives, university libraries require technical ICT staff among other resources and facilities. Due to recent technological advances, the trend has been to take advantage of the world of information technology outsourcing in such functions as subscriptions, digitization and automation. Policy makers in public university libraries view outsourcing as a way of securing critical ICT support services. To this extent university libraries have outsourced non-core services such as security, cleaning, and courier services to supplement subordinate library operations (Martin *et al*. 2000).

The term outsourcing originates from the Anglo-Saxon language realm and is an abbreviation of the words "outside resource using" (Weimer & Seuring 2007:149). According to Bordeianu & Benaud (1997) outsourcing is the transfer of an internal service or function to an outside vendor. Many authors (Grover, Cheon, & Teng 1994; Sharpe 1997; Quinn 2000; Rajabzadeh, Asghar & Hosseini 2008) view outsourcing as a form of predetermined external provision by another enterprise for the delivery of goods and/or services that could previously have been offered in-house. The acquiescence definition of outsourcing by the authors is an organization acquiring goods or services from an outside supplier at a fee instead of obtaining the goods or services on their own. Outsourcing is therefore the use of an outside contractor who is paid a fee to perform important parts of library operations/services previously undertaken in the information centers or brought in as new services.

The rapid technological advancement, evolution of the Internet and the availability and adoption of broadband networks has enabled even small and medium enterprises (SMEs) to implement outsourcing strategies (OECD 2008). Organizations practise outsourcing for a wide range of reasons, such as to cut costs, to bring in a skilled and competent work force and to gain a competitive edge over other organizations. Some benefits and challenges are highlighted in the next section.

Outsourcing benefits and challenges

Outsourcing is increasingly being used to reduce costs (Mohammed 2005), gain easier access to expertise (Lacity, Willcocks & Rottma 2008; González, Gascó & Llopis 2010a; González, Gascó, & Llopis 2010b), enable new technological developments (Claver *et al*. 2002) and achieve strategic goals by libraries. University libraries outsource for various reasons, from short-term tactical reasons such as unavailability of skills to long term strategic reasons such as to free resources for other purposes (Lederer & Tucker 2003).

Outsourcing introduces an element of competition (Rajabzadeh, Asghar & Hosseini., 2008; Gupta *et al*. 2005) and enables institutions to avoid risks (technological obsolescence) and variable staffing (Glickman *et al*. 2007; González, Gascó, & Llopis 2010b). Risks, such as liability issues and insurance coverage, can be transferred to the vendor. Additionally, outsourcing allows firms to focus their resources on core competencies as the outside experts assume operational details (Hayes, Hunton & Reck 2000; Smith, Mitra & Narasimhan 1998; Claver *et al.* 2002; Rajabzadeh, Asghar & Hosseini 2008). Outsourcing is a way of acquiring technology without having to make large investments in technology, thus increasing flexibility (Jurison 1995).

There are many challenges associated with outsourcing. Ngwenyama & Sullivan (2005) cite monitoring problems that arise from an inability to specify the scope of the work performed by the vendor, while Nelson, Richmond & Seidman (1996) acknowledge problems of applying penalties and incentives to contracts that depend upon accurate performance measures. Outsourcing may be expensive in the long run since; outsourcing providers may demand greater premiums. For example, Claver *et al*. (2002), Gonzalez *et al.* (2010a) and Miles (1996) specify loss of business knowledge and experience, as the tasks are taken by the contractor's staff who are highly qualified. Over time the organization may become over-dependent on the vendor (Ngwenyama & Sullivan 2005; Slaughter & Ang 1996), resulting in a loss of core competencies and proprietary information. As a result, staff may develop low morale and a feeling of insecurity (Palvia 1995).

According to Ngwenyama (2007), without careful considerations of the various risks associated with outsourcing, any gain can be more than offset by significant losses such as financial loss, individual privacy, data security and loss of ICT expertise.

As libraries outsource they face complex decisions about how to best engage alternative outsourcing options in ways that leverage their benefits and protect the public universities' interests. They create policies and processes that help individual libraries make effective outsourcing decisions.

Overview of outsourcing in libraries

Outsourcing in academic libraries has existed on a moderate scale for years, but its popularity as an alternative to direct in-house services grew rapidly in the 1960s and again in the 1990s (Benaud and Bordeianu 1998). The libraries mainly outsourced non-core services in peripheral areas such as security, maintenance and courier services. In the 1980s, some cataloguing functions began to be outsourced (Benaud and Bordeianu 1998). Libraries contracted with vendors for the provision of retrospective conversion of records, and they began buying indexing and magazine articles from H.W. Wilson Company and book cataloguing information, in card form, from Library of Congress (Martin *et al.* 2000). For instance, the Wright State University in 1993 outsourced its cataloguing department (Martin **et al**. 2000) and such trends have been followed even in recent years.

The early 1980s saw most Commonwealth countryies' universities turning to outsourcing as a way to do more with less when they were faced with shrinking financial resources coupled with a need to expand their enrolment (Ball *et al.* 2002). A survey done by Lund (1997) on outsourcing among 102 universities of the Commonwealth cited reasons for outsourcing as: lowering of costs at 49%, improving quality of service 26%, and 13% cited the growth of staff. In addition, findings indicated services outsourced including building design, construction, project management, cleaning, catering and operating bookshops.

In the UK, outsourcing became a trend in libraries in the 1990s and was much more extensive, including bookselling, Library of Congress cards, and computer maintenance for many years (Ball *et al.* 2002). Many public university libraries in the UK have outsourced preservation and collection development (Ball *et al.* 2002) and outsourcing of technical services is on the rise. Currently ICT outsourcing is on the rise with libraries venturing into Knowledge Processing Outsourcing (KPO) (Samulevicius & Samonis, 2006)

Outsourcing studies in Kenya are not as advanced as in countries like the USA, UK, South Korea and Australia, which have recorded the largest amounts of published literature as revealed by a study conducted by Alsudairi & Dwivedi (2010). This study sought to investigate the outsourcing of ICT services in selected public university libraries in Kenya in order to establish the challenges facing libraries in outsourcing ICT services.

2. Problem and purpose of the study

Information Communication Technology is an enabler of university research, innovation and educational competitiveness. University libraries, being the epicenter of the university system, need strong ICT technical staff able to provide quality services to the university community. Unfortunately, the majority of Kenya's top librarians have been equipped with a traditional set of library skills centered on the acquisition, organization and preservation of print-based information sources. Ondari-Okemwa (2000) and Ocholla & Bothma (2007) share the view that facilities for training librarians in Kenya were inadequate and not well maintained, and that the ICT skills taught to students was more theoretical than practical. Furthermore, even those equipped with the ICT knowledge move to alternative professions, leaving a vacuum in libraries. The nature of ICT services is such that constant changes occur at a faster rate, requiring staff to upgrade their technical skills continuously.

ICT is a prerequisite for driving the library in the right direction, being the heart of the university, as well as providing users with quality services. Due to the increased demand for Web-based information resources by users, librarians are compelled to outsource ICT services as a way of securing critical ICT services to complement the traditional library and information services and enhance their service delivery.

Outsourcing ICT brings with it enormous benefits to the library, such as cutting costs. However, in the case of public university libraries in Kenya, the outsourcing processes are not delivering the required benefits owing to various challenges. ICT outsourcing models in Kenya are scarce, with procedures that are fragmented. There are no empirical studies in the area to drive policies and procedures. It is with regard to the above that this study sought to investigate the outsourcing of ICT services in selected public university libraries in Kenya in order to establish the challenges experienced in outsourcing ICT services. The objectives of the study were to: examine the range of ICT services outsourced by selecting public university libraries in Kenya, review the legal and infrastructure framework for outsourcing and establish the challenges associated with outsourcing ICT services in public university libraries.

3. Methodology

A qualitative study adopting a multiple case study strategy was used. The study was conducted in four selected public university libraries in Kenya. Among the universities chosen the units of analysis were the university libraries, namely; Moi University Library (MUL), Kenyatta University Library (KUL), Jomo Kenyatta University Library (JKUL), and the University of Nairobi Library (UOL). The choice of libraries was based on their size, the history of the university and the adoption of ICT in the provision of library services.

The study purposefully selected 40 respondents comprising senior university managers, librarians, ICT Directors and vendors involved in outsourcing as shown in Table 1 below.

Table 1 Sample size and framework

Respondents	MU	KU	UoN	JKUAT	Total
Deputy Vice-Chancellor, Finance	1	1	1	1	4
Director of ICT	1	1	1	1	4
University Librarian	1	1	1	1	4
Systems /ICT Librarians	1	1	1	1	4
INASP Representative	1	1	1	1	4
Acquisition Librarians	1	1	1	1	4
Reference Librarians	1	1	1	1	4
Cataloguing Librarians	1	1	1	1	4
Circulation Librarians	1	1	1	1	4
Vendors	1	1	1	1	4
TOTAL	10	10	10	10	40

Data was collected using semi-structured interview schedules administered to the library management staff, IT managers, and university administrators. Qualitative analysis was applied complemented by quantitative analysis. The raw data obtained was scanned and sorted into different types to enable the researcher to establish categories through a coding process, which was done manually.

The study was limited to the public university libraries; therefore some of the findings may not be generalized to the private universities.

4. Results and discussions

This section presents the findings on the range of ICT services outsourced, the legal and infrastructure framework in outsourcing and the challenges associated with outsourcing ICT services in public university libraries.

4.1. ICT services outsourced by libraries

The study's objective was to explore the range of ICT outsourced by the Libraries. The respondents, who comprised the Deputy Vice-Chancellor in charge of Finance, Director of ICT, University Librarian, Systems /ICT Librarians, INASP Representative, Acquisition Librarians, Reference Librarians, Cataloguing Librarians, Circulation Librarians, were asked to provide information on the type of ICT services outsourced.

The study established that the ICT services outsourced by all four university libraries included e-resources, the Internet, automation and training. Among the services outsourced, resource acquisition was outsourced under joint ventures, while others, such as security, digitization and web-based references, were outsourced from different vendors.

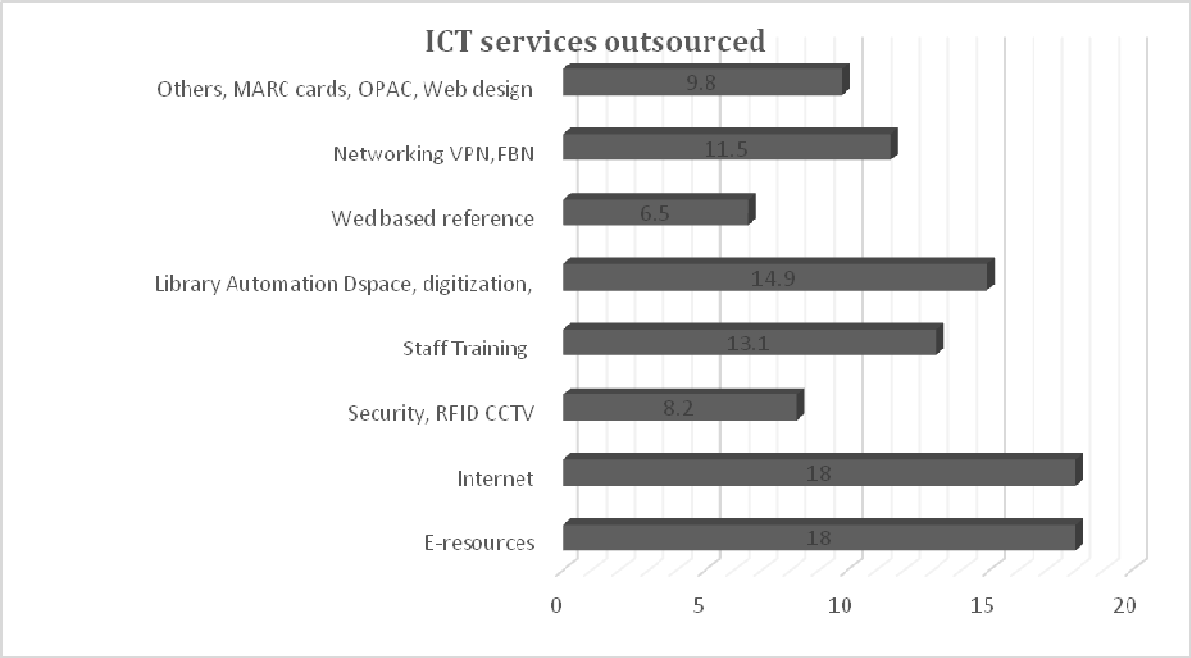

Figure 1: ICT services outsourced by the Public University libraries

The above table indicates the range of ICT services outsourced by public university libraries in Kenya. E-resources and the Internet are the dominant services outsourced by all the libraries. This is attributed to the fact that they signify the core business of the university, which is to provide information to users.

E-resources

All the libraries had outsourced e-resources through the Kenya Library and Information Services Consortium (KLISC) of which they were members. The Consortium works with PERii (Programme for Enhancement of Resource Information) and the International Network for the Availability of Scientific Publications (INASP) programme to get in touch with the publishers and provide feedback to the country representative(s). PERii sources services and then passes the requests to INASP. Libraries outsource the resources through INASP

The study found that the E-resources were the most outsourced ICT services, at 18%, because they were critical to libraries' providing users access to current and up-to date information using the state of the art technology. It was also cheaper to outsource due to economies of scale. Additionally, the individual library lacked the skill and technical capability required to host such an enormous ICT project. The study attested that the libraries contracted vendors specializing in the area of ICT; hence, they were knowledgeable and experienced in the respective areas of providing e-resources and the Internet. Petry-Eberle & Bieg 2009 affirm the findings of the study: they state that in the expansion of the demand for online resources, subscriptions are taken over by a portfolio of licensed online resources and internal alliances formed to jointly acquire electronic resources online.

Internet Services

Public university libraries all outsourced Internet services at subsidized prices from the Kenya Education Network (KENET) as rated at 18%, the same level as e-resources. The four university libraries had contracted KENET to provide Internet services as claimed by librarians:

> The library has outsourced from KENET because the university is not an Internet Service Provider and normally the requirement to be an ISP is that you have to buy a bulk bandwidth and it is easier to outsource from an INASP.

Virtual Private Network and installation of Fibre Backbone Network

This service had an 11.5% rating. Moi University had outsourced Virtual Private Network (VPN) and installation of the Fibre Backbone Network (FBN) services from Safaricom Ltd., (a leading mobile network operator in Kenya). VPN enables internal communication within the campus. This was outsourced because the university has no capacity to install a VPN and therefore the service is outsourced to Safaricom.

Installation of FBN connects the buildings, such as the schools and the students' centre, to the library. The library outsourced the service because it required expensive equipment for terminating and installing the fibre.

Library automation

All the libraries had outsourced the automation of the library, albeit from different vendors and rated at 14.9% with projects such as digitization and OPAC. KU and JKUAT had an outsourced implementation of open source software (LibLime KOHA). Though KOHA is an open source, KUL had contracted vendors to help in its implementation due to a lack of staff with the capabilities to implement the service. The University of Nairobi had outsourced their Library Management System (LMS) (Vubis Smart), from the University of Brussels and relied on a vendor for the maintenance of the system. The library had no staff with the skills to maintain the system and still completely relied on the University of Brussels.

Moi University Library had outsourced open source software, Automation of Libraries and Centre's Documentation (ABCD) system from Belgium. The Library initiated the project in 2010 and it was still operating at the time of compiling this report. The Library outsourced the system because it was well developed and was better than the other options the library had envisaged, as it was more cost effective than an in-house developed system. As explained by a respondent:

> The system was much cheaper to outsource than developing one internally, besides development and implementation of the system was facilitated by a donor making it easier to acquire the system.

Although most of the LMS was open-source software, the staff lacked knowledge to implement the systems and therefore relied on vendors to train them. A large proportion (three) of the libraries expressed dissatisfaction with the way their respective libraries outsourced various LMSs. Universities contracted various suppliers without benchmarking with the pioneer organizations. This concurs with Benaud & Bordeianu (1998) findings that even though academic libraries typically acquired off-shelf systems they still engaged in partial outsourcing. The majority of the public university librarians lacked the skills to develop an LMS in-house and it was cheaper to outsource than to develop one internally.

OPAC is an online database of materials held by a library or group of libraries. All libraries had commissioned vendors to set it up for them.

DSPACE is software used in automating resources. It is a software package for creating open-access repositories for scholarly and published digital content. The study revealed that MUL and KU libraries were in the process of converting their printed research and scholarly work in repositories and were considering using DSPACE or were using it. Moi University Library (MUL) had used the software to preserve and share academic research. However, at the time of the study, the library had suspended its use, citing logistic reasons. KU library was in the process of outsourcing the implementation of DSPACE for lack of internal staff with the necessary skills.

The study found that libraries also used vendors to digitize their Institutional Repositories; for instance, the University of Nairobi was in the process of engaging a firm (Digital Divide Data (DDD)) to digitize their institutional repositories. Kenyatta University Library was in the process of digitizing their library resources starting with all the past examination papers.

The study revealed that libraries outsourced LMSs since it was cheaper than developing them in-house. Developing an LMS is an expensive, costly and time-consuming affair that requires IT skills and knowledge of issues of systems design and development. The study findings are in line with Benaund & Bordeinu's 1998 study, which asserts that academic libraries choose to outsource rather than develop the systems in-house and employ several levels of outsourcing such as complete outsourcing or partial outsourcing.

Training staff in ICT

To enhance competency in staff skills, all the public university libraries had outsourced staff training; most librarians lacked skills in ICT areas. This occasioned the need to train staff to enable them to carry out routine maintenance and implementation of certain ICT projects.

All four libraries had engaged vendors specialized in areas such as digital and institutional repositories to train library staff, rated at 13.1%. Areas of training included record-keeping at UoNL, ICT courses such as CISCO, LINUS, Oracle and Dbase from certified organizations by MUL, and maintenance of ICT technologies by all four libraries due to a lack of ICT technical skills.

According to Bersin and Associates, 2004, outsourcing the training of staff is drawing attention today because of the value it brings to the organization. Training helps the managers focus on strategic priorities and more important high-level activities freeing up resources to focus on measurement, evaluation, and operational excellence in training programs themselves. Therefore, when there was a need to train staff in certain skills, the option that the library chose was to identify a supplier who could offer the necessary training and outsource the services.

Security

All the libraries had different methods of securing information: for example, by the use of Closed Circuit Television (CCTV) outsourced by the JKUAT library through 3M, Radio-frequency identification (RFID) by KU and the use of guards

at the University of Nairobi library using a security firm to safeguard their facility. This had an 8.2% rating. The findings concur with Debar & Viinikka's (2006) study that recommended the security of information as an area that may be outsourced.

Web-based reference services

Of the four libraries, Moi University Library and the University of Nairobi had contracted this service out. This earned a rating of 6.5%. Moi University Library collaborated with Indiana University, having the latter carry out reference searches for the former. The University of Nairobi worked with the British Library to have articles from certain journals delivered to them at a fee as indicated by the acquisitions librarian.

The study revealed that two of the libraries had not outsourced document-searching services and were not providing it internally. The study attributed this to librarians' lack of knowledge in web reference systems, forcing them to continue using traditional modes of reference services. Web-based reference, or an online reference, is a relatively new addition to library services that is gaining wide popularity in public and academic libraries (Sajeev & Ramingwong 2007). Web-based reference services require a network of ICT expertise, intermediation and resources placed at the disposal of someone seeking answers in an online environment, lacking in many libraries.

Other outsourced services

Other services the libraries outsourced (rating 9.8%) included:

- MARC bibliographic records. All four libraries were using LC MARC Record and tags for copy cataloguing bibliographic data.
- Provision of photocopying services is one of the major methods used by libraries to make copies of text, photographs and other printed documents. The study revealed that JKUAT library had photocopying services outsourced to a vendor; Moi University on the other hand was providing the service internally.
- It also revealed that JKUAT library was outsourcing lift maintenance to 3M Company.
- Printing of library cards.

The findings indicate that Kenyan university libraries outsourced ICT services which were selected based on certain factors. Libraries would outsource if the service was not within the library's core competency, where skills were lacking, to gain economies of scale and if the service was cheaper to acquire from a vendor than in-house sourcing. Services predominantly outsourced by all the libraries included the Internet, e-resources, training and LMS. This can be explained by the fact that these services were very crucial to the library and, due to financial constraints, library management had to find strategic ways of acquiring the resources at affordable costs. The study confirmed the views of related studies (Claver *et al*. 2002; Rajabzadeh 2008) that ICT outsourcing is preferred to allow management the control of their core activities and allow a firm to focus its resources on those activities that are considered its strengths, often referred to as core competencies.

4.2 Policy and legal framework guidelines for outsourcing services

The second objective was to review the legal and infrastructure requirements in ICT service outsourcing. The respondents were asked what policies and legal frameworks were applied in ICT outsourcing. Legal and regulatory measures utilized by the libraries in outsourcing procedures included ICT policy, procedural manual and service level agreement. These were to outline and guide the outsourcing processes. However, the study revealed that there were variances in the way the libraries operated, as shown in Figure 2.

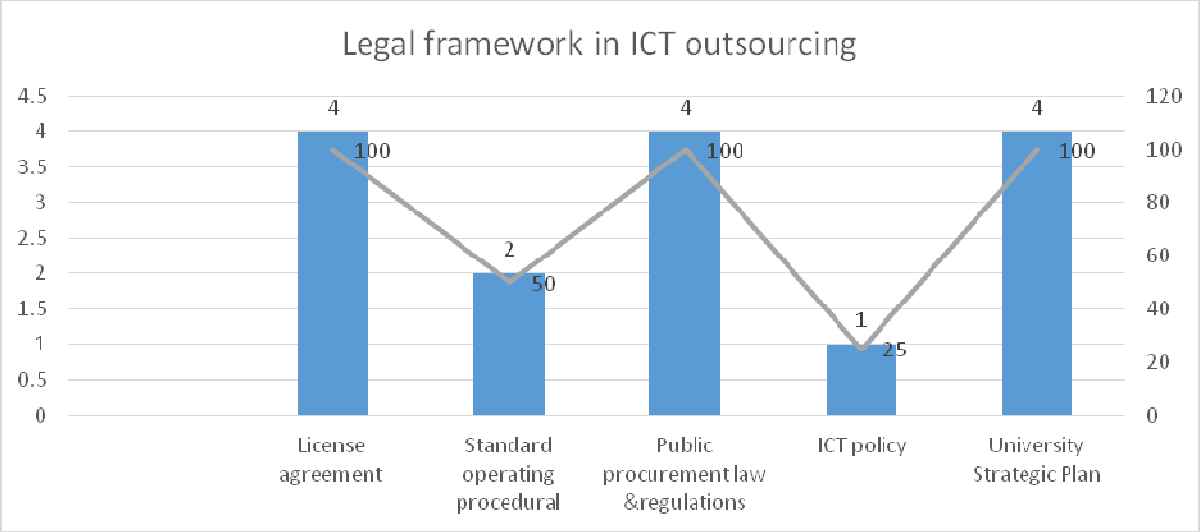

Figure 2: Legal and infrastructural frame work in outsourcing

The Public Procurement and Disposal Act of 2005

The Public Procurement and Disposal Act of 2005 contains the rules and procedures for the procurement of services, including the outsourcing of services in the Kenyan public sector (Republic of Kenya 2005). The study found that all libraries applied this Act in procurement. Although the libraries used procurement regulations, they did not cover all aspects of outsourcing. Procurement laws in use were inadequate in elaborating issues of outsourcing.

Libraries utilized the Public Procurement and Disposal Act of 2005 to select the vendor to award a contract based on the lowest bidder, in compliance with the Procurement Act. Section 66 (4) of the PPDA Act states that the successful tenderer shall be the one based on the evaluated price. The lowest bidder thus gets preference to everyone else. This in itself is a setback to attain the best value for money. The study attested that awarding contracts based on low prices does not guarantee that the services will be good or that the library will get ICT services that are tailor-made to address specific needs of customers. The study declared that this mostly resulted in selecting unqualified bidders, since the main criteria was the lowest bidder, suggesting that libraries did not always get the most qualified bidder.

Other areas where the Act was not strictly followed was the extent of library (user department) involvement in selecting a vendor. The study found that, while in UoNL Library librarians were involved in making decisions about some of the ICT services to be contracted, in others, namely MUL, JKUL and KUL libraries, there were minimal consultations, which left these librarians feeling let down. In two of the libraries, ICT outsourcing decisions were taken in consultation with the ICT Directorate. For example, in its draft ICT Policy, Moi University Library had a clause stipulating the following:

> The user department shall be allowed to outsource only in consultation with the ICT Directorate and only if the service cannot be provided by any other organ of the University.

Although all the libraries used the Public Procurement and Disposal Act in the outsourcing process, the Act was rigid and did not favour ICT outsourcing. For instance, according to Section 26 (1) of the Act, public entities have the authority to establish procurement procedures. This resulted in differences with regard to procurement processes, thereby defeating the purpose of the Act, which aims to standardize procurement across all public entities. The freedom to establish their own procurement procedures means that libraries are likely to treat identical situations differently. For instance, while the University of Nairobi allowed single sourcing when procuring books, the study observed that different procedures already existed in relation to outsourcing IT services.

Moreover, library ICT services outsourcing poses some intricacies compared with procurement of other goods, because the supplier owns not only the facilities but also the assimilation of the ICT service into the organizational environment of the outsourcer. For e-resources, the authors present divergent ideas and may choose to publish their work with different publishers, making it impossible for libraries to adhere strictly to procurement laws, which explains why such libraries as the University of Nairobi were not strictly following the procurement rules when acquiring books and e-resources.

Related studies (Katila, Rosenberger & Eisenhardt 2008) agree that a client must not focus too narrowly on a single, isolated process when making an outsourcing decision, because it can be dangerous and risky. They recommend that choices be made only after weighting considerations such as a net gain or loss in efficiency, the cost-effectiveness of using outsourcing, and dependence created by a third party outsourcing.

The study concluded that a successful ICT outsourcing application requires that the users, project managers and technical personnel be intimately involved in the development process to allow for staff project ownership and effective implementation. Other studies (Behara, Gundersen, & Capozzoli 1995; McCarthy 1996; Lankford & Parsa 1999; Katila, Rosenberger & Eisenhardt 2008) agree that suppliers who have a good understanding and an interest in the outsourcing firm's business will be better positioned to help define mutually beneficial goals. This will enable the library to outsource services in line with its objectives.

Table 2 Summary of the policy and legal framework guidelines applied in outsourcing services by university libraries

Legal/Regulatory framework	KU	MU	UoO	JKUCAT
Public Procurement and Disposal Act				
ICT Outsourcing policy	×	Draft format	×	×
Procedural manual	×	Draft format	×	×
Service legal agreements				
University strategic plan				

ICT outsourcing policies and procedural manual

All four university libraries lacked outsourcing policies; three had drafted policies that mostly covered acquisition generally, while one did not have any. Moi University had a draft policy that had not been ratified by the University Council. The University of Nairobi did not have an outsourcing policy, although they had a draft Collection Development and Acquisition Policy.

All libraries lacked operational ICT procedural manuals. Only Moi University's ICT Directorate had drafted ICT Procedure Manual. ICT policy and procedure manuals outline and guide the outsourcing processes. A procedure manual promotes adoption of the process approach to activities being performed, thus ensuring that the objectives of the service are achieved. The study by Khalfan (2003) supports the importance of standard operating procedures in an organization and views a lack of them as contributing to the failure of ICT outsourcing projects. The study concluded that due to the absence of procedural manuals inconsistencies occurred, such as libraries dealing with ICT outsourcing on a case-to-case bases.

Service Level Agreements

The four university libraries usually signed service level agreements and would engage the services of a lawyer for legal interpretation when drawing up a contract between the library and the supplier. Signing of a service level agreement made the contract legal and binding. Its purpose is to evaluate the services in certain cases. The study found out that only two of the libraries used the contractual agreements signedto assess the performance of the suppliers

Due to obscure outsourcing procedures, libraries evaluated and implemented opportunities for outsourcing on a case-by-case basis and lacked coordinated strategic planning across the functions and services. There appeared to be wide variances on how libraries understood, interpreted and applied the legal and operational procedures. The study attested that laws governing public procurement were not effectively utilized in outsourcing ICT services, and therefore did not produce the desired results.

4.3 Challenges associated with outsourcing ICT services

The study found that the laws governing public procurement, though utilized in outsourcing ICT services, did not produce the desired results, resulting in various challenges as indicated in Figure 3 below,

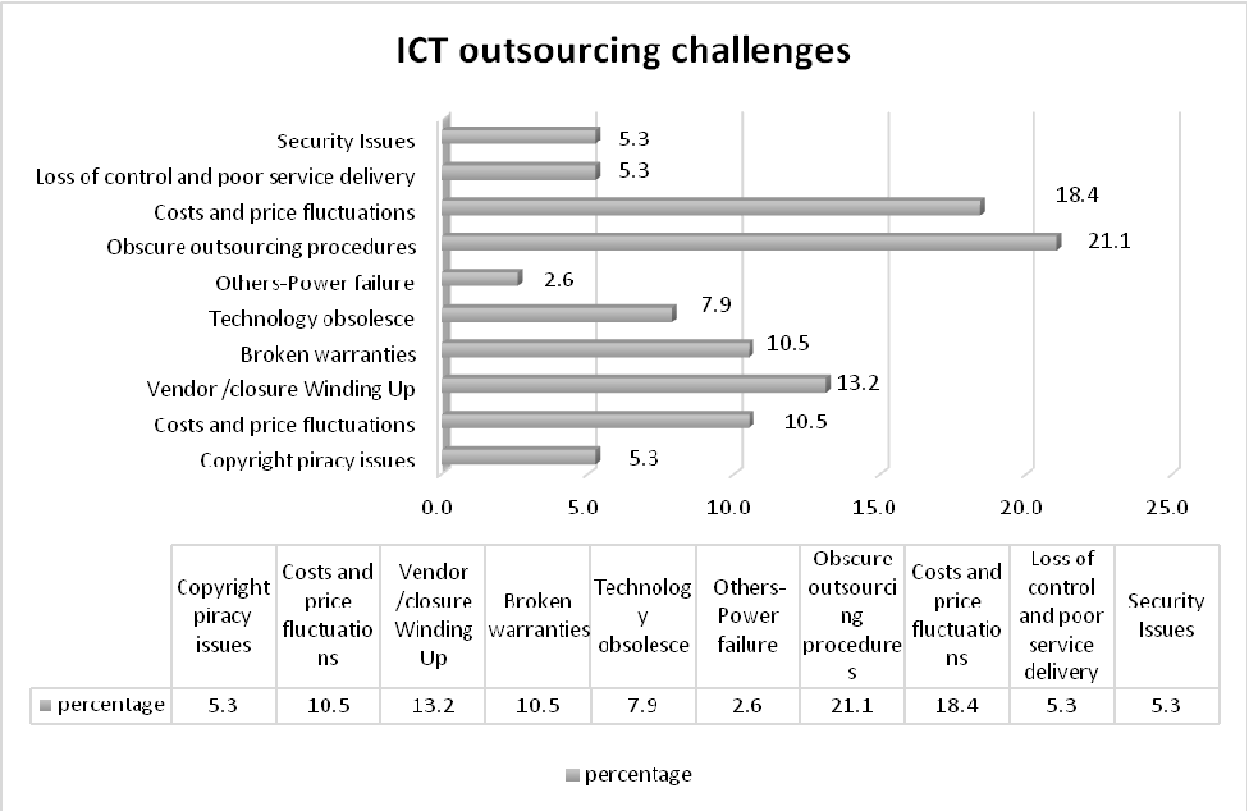

Figure 3: ICT Services Outsourcing Challenges

(a) Obscure outsourcing procedures. Libraries evaluated and implemented opportunities for outsourcing, often on a case-by-case basis as indicated by 21.1% of the responses. They lacked coordinated strategic planning across the functions and services. The procurement law was not effective in guiding ICT outsourcing processes as supported by studies such as Amemba *et al.* (2015: 273). Libraries selected vendors based on the lowest bidder, thus contributing to the selection of unqualified suppliers. There was a consensus among the respondents from the four libraries that the lack of policies and a legal framework was a major challenge. The study found that libraries lacked documented and approved outsourcing procedures as well as standard operating procedures, causing confusion.

(b) Cost of services and price fluctuations came second, rated at 18.4%. In many cases the budget allocated to libraries remained the same despite ICT services, prices being on volatile pace as supported by studies such as Kavulya (2006). This was a challenge which has led to the creation of numerous hedging strategies such as continuous negotiations and entering into a library consortium due to the unpredictability of ICT services for outsourcing price levels. Moreover services such as e-resources are not all localized in nature, contributing to market participants' lack of a better feel for demand levels, finding it hard to sustain the services.

(c) Vendor closure and broken warranties (13.2% and 10.5%). This was a challenge that libraries encountered when suppliers closed shop, either because of a change of business or lack of finances to sustain their business. For example, Moi University had contracted the Wantech Company to oversee radio communication between its campuses. Wantech went into liquidation, leading to a breakdown of equipment because the vendor had not trained library staff on maintenance. This affected the services that the library provided.

(d) Change of technology. The respondents (7.9%) admitted that constant change in technology requires librarians to keep upgrading their facilities, which was a challenge to libraries. For example, while the University of Nairobi was still using a manual security system, Moi University and Kenyatta University were outsourcing RDIF, a current technology. Jomo Kenyatta University of Science and Technology Library was using CCTV. Due to constant technological changes, librarians had to constantly deal with inadequate technology posing inadequate quality service delivery

(e) Security and copyright issues in ICT outsourcing: The Library entrusts its data to the supplier, especially with regard to ICT services. As a result, the library had challenges in dealing with matters of data security (5.3%) and copyright (5.3%). For instance, copyright issues arose when Moi University digitized its academic research reports, because some students

plagiarized the works. The Library withdrew the service and is now considering outsourcing DSPACE that is more reliable. University of Nairobi Library is drawing up an open access policy to deal with copyright issues. However, it has challenges in enforcing that policy so that anyone who either has used the university to carry out research or funded by the University deposits the resulting document in the university repository.

(f) Loss of control of the services (5.3%.). This was associated with the fact that not many suppliers provided full disclosure about their services. For example, some parts of the ABCD software's documentation that Moi University Library had outsourced from Belgium were in Spanish. This forced the library to keep relying on the supplier for the support of the system. This resulted in the library essentially losing control and relying heavily on the vendor. The study confirmed that in some instances the vendors had preyed on the librarians' ignorance through overcharging certain services and refusal to provide full disclosure of the services. The study concluded that the library essentially lacked control of some outsourced services because staff were incapable of performing the services without the vendor. Similar studies (Slaughter & Ang 1996; Antonucci, Lordi, & Tucker 1998) noted that the nature of outsourcing creates a dependence on the provider firm with a consequent loss of independence because the outsourced department is no longer readily available for use in management training, preventing the creation of easy familiarity with that function.

(g) Others (2.6%) included low access and connectivity due to bandwidth, which determines the efficiency of Internet connections in the libraries. The study found that the Internet bandwidth connections of most libraries are too low for them to enjoy most of the available e-resource services and online academic facilities. The poor state of Internet connectivity affects the information needs of the clientele as it hinders access to information. Besides, the study found that the high cost of Internet connectivity posed a challenge to the university libraries, meaning that many users had no access. Additionally, interrupted power supply and power fluctuations adversely affected access by users to the services outsourced.

A study (KENET 2010) supports the findings, observing that the higher education community, especially the university community in Kenya, is ready to use ICT for learning, teaching, research and management. However, the institutional leadership appeared not to have recognized ICT as a strategic priority for transforming these activities. Consequently, institutions were allocating low operational budgets to ICT, did not invest adequately in campus networks, and did not have strategies for building the capacity of faculty to use ICT effectively to support their teaching and research activities (KENET 2010).

5. Conclusions

Based on the findings, the study found that all the libraries practiced ICT outsourcing for services such as e-resources, the Internet, training of staff, web-based referencing computer network infrastructure, library automation, web designing, OPAC and security, that were critical services. Consequently, the study found that public university libraries outsourced to allow them to address perceived deficiencies in their own resources and capabilities.

The study alluded to the fact that due to obscure outsourcing procedures, libraries evaluated and implemented opportunities for outsourcing on a case-by-case basis and lacked coordinated strategic planning across the functions and services. There appeared to be a wide variance in how libraries understood, interpreted and applied the laws. The laws governing public procurement, though utilized in outsourcing ICT services, did not produce the desired results, resulting in various challenges. The study found that the challenges that the libraries were facing included a high cost of services, obscure ICT outsourcing processes, loss of control and vendor closures and broken warranties.

The study concluded that it is critical that public university libraries understand the challenges that can contribute to ICT outsourcing failure. In order to reap as many benefits as possible from outsourcing, it is essential for libraries to utilize a solid legal and infrastructure framework approach in managing outsourcing process. Such a regulatory framework may pave the way for a secured and successful ICT outsourcing with proper management and strong enforcement of policies and procedures.

ICT outsourcing holds great promise for public university libraries, giving them more time to focus on the core business and at the same time provide efficient services to the customer. Libraries can reduce the challenges of ICT outsourcing by eliminating the factors hindering effective services. The libraries must continually monitor and evaluate the services which are outsourced to ensure that the library does not lose focus and is achieving maximum benefits from the services.

As a result, the study makes the following recommendations. It is essential to:

- Strengthen library consortium to address outsourcing challenges and other areas of mutual interest.
- Benchmark the services to facilitate systems acceptance and avoid situations where ineffective systems are outsourced.
- Evaluate the ICT services outsourced regularly to ensure the objectives are achievable.
- Ensure security of data and copyright protection

- Streamline outsourcing guidelines and policies.
- Improve ICT infrastructure by providing remote access through the installation of wireless connections near the libraries, lowering or elimination excise duty to make ICT tools more affordable.
- Develop, publish and communicate ICT outsourcing policy.
- Involve user departments in outsourcing by encouraging their participation in decision-making to allow easy adoption to change and acceptance of systems.
- Train staff on outsourced ICT services.

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