Records Digitisation Technologies and Systems in the Banking Sector in Kenya

*Malenya Lusimba[1], Tom Kwanya[2]
[1]Bank of Africa, Nairobi - Kenya
[2]The Technical University of Kenya, Kenya
Email: *malenyalusimba@gmail.com*

Abstract

Whereas some studies on digitisation in the banking sector in Kenya have been conducted, none has investigated the technologies and systems used as well as their suitability for the purpose. By using a fit-viability analysis, this chapter investigates the digital technologies and systems used by banks in Kenya to digitise their records; assesses their fit to the needs of the banks; examines their viability for the Kenyan banking environment; and proposes strategies to enhance the fit and viability of digitisation technologies and systems to the Kenyan context as a means of enhancing the benefits of digitisation for banks in the country. The study from which the chapter is extracted was an exploratory survey. Primary data was collected using key informant interviews from records managers of various banks selected through information-oriented purposive sampling. The data was analysed using conversation analysis. The results of the study reveal that banks in Kenya use diverse systems to digitise records. These systems fit the requirements of the banks and are viable in their economic, infrastructural and organisational contexts.

Keywords: *Banks, Digitisation, Digital Records, Fit-Viability Analysis, Kenya*

1 Introduction

Kenya's financial system comprises of numerous commercial banks, non-bank financial institutions, a range of insurance companies and a stock exchange. Similarly, there has been a phenomenal growth of non-bank financial intermediaries. The insurance industry has also experienced a rapid expansion, both in terms of firms and customer numbers and range of services offered. To this extent, the Kenyan financial system is by far the largest in Sub-Saharan- African countries by total assets although largely dominated by the banking sector (Cihák & Podpiera, 2005). Over the last thirty years, a significant growth in the number of commercial banks has taken place in Kenya. This has largely been contributed to by the fact that financial services are one of the key sectors factored within the economic pillar of Kenya's Vision 2030.

According to the Central Bank of Kenya's Financial Stability Report (2016), the country's financial system has grown significantly, becoming more complex and highly integrated. The report further explains that so far, the banking industry is comprised of 42 banks, one mortgage finance company, 13 microfinance banks and 8 representative offices of foreign banks. In addition, there are 76 foreign exchange bureaus, 17 money remittance providers and three credit reference bureaus. As such, there are five main actors regulating the financial sector activities. The sectors include banking, insurance, capital markets, SACCO and pensions. The actors are regulated by the Central Bank of Kenya (CBK), Insurance Regulatory Authority (IRA), Capital Markets Authority (CMA), Sacco Societies Regulatory Authority (SASRA) and Retirement Benefits Authority (RBA) respectively.

Cytonn Investment, in their December 2017 "Kenya Banking Sector Report" indicated that in Kenya, there are a total of 39 commercial banks, with Chase Bank and Imperial Bank under receivership, 1 mortgage finance company, 12 microfinance banks, 8 representative offices of foreign banks, 86 foreign exchange bureaus, 14 money remittance providers and 3 credit reference bureaus. Financial inclusion in Kenya has continued to rise, with the percentage of the population living within 3 kilometres of a financial services access point rising to 77.0% in 2016 from 59.0% in 2013. The report further explains that of all the listed banks, 7 are in Tier I, 4 in Tier II while the rest fall under tier III of the CBK's rankings. The banks' tier ranking is done by Central Bank of Kenya and is based on the bank's market share, and asset base customer deposits among other parameters.

However, Redford (2017) notes that despite growth, the sector has its unique challenges. These challenges range from the recent development in terms of interest rate caps that is expected to constrain the access to finance for small and medium enterprises (SMEs) in the coming years to non-compliance issues that has led to the CBK placing two banks under statutory management in the past year. However, opportunities are still there in the sector to enable it to tap into the economic environment thereby filling in the gaps brought about by threats of these challenges. One of the opportunities lies in the adoption of records digitisation as a means of enhancing evidence-based decision making thereby streamlining operations and improving productivity.

2 Digitisation of Records

Now, more than ever, organisations have realised the need to utilise technology in streamlining business processes in order to gain competitive advantage and keep up with the forces of the external business environment (Ryan & Frater, 2002). The financial and banking sector, in particular, is not an exception to this scenario. As such this sector has embraced electronic document records management technologies to eliminate or reduce inefficiencies and drawbacks of paper-based transactions in its operations.

It is worth noting that the nature of banking operations leads to the generation of large volumes of paper from back office operations, account opening processes, loan application processes, banking hall operations, transmission slips, administrative communiqués, legal documentation, securities, credit and risk documents and so much more. In the 2015 World Economic Report, it is estimated that in a banking institution every 100 employees will generate over two million pages of documents in a year. These physical documents come with their own sets of challenges. Therefore, digitisation technology serves to increase operational efficiencies by breaking down the inefficiencies associated with the use of physical paper documents.

Market experience has shown that a number of digitisation technologies have been used by both financial and non-financial institutions to enhance record keeping. Over the years technologies such as the Optical Character Recognition (OCR) technology has been used to automatically capture data from papers (forms). This technology comes in both structured and semi-structured forms. The structured forms come in a standardised format. In such forms, fields to be captured are located in a specific area. A good example of these is the account opening forms. The semi-structured forms are documents which have the same fields but different layouts. Examples include invoices, purchase orders, and receipts, among others.

Another digitisation technology is the Barcode Recognition. This is the use of barcodes to capture records. The barcode technology has the ability to name, batch, split, file and route a document, making the process of digitisation more efficient.

Another form of records digitisation technology is the image clean-up and enhancement software. This software is used for editing and making poorly-stored and worn out documents more legible. This software usually has features such as skewing (straightening the document), de-sparkling (removing dust and specks from scanned documents) and orientation detection of a document which involves automatic rotation of a document to the desired angle. Bates stamping is another records digitisation technology. This is where a document is digitally stamped by a document scanner.

In addition to the technologies, a number of systems are also used in the financial institutions for digitisation. The systems include Digital Imaging Systems. These are software applications that give organisations the ability to capture, store and distribute an enormous number of records over electronic networks. Also used is the Business Process Management Systems, a software application that uses various methods to discover, model, analyse, measure, improve, optimise, and automate business processes. In use also are the scanning systems that are used in converting analogue documents such as printed or handwritten documents into electronic formats. The Document Management System is also used to create, find and share information. It usually takes the form of business software and facilitates the organisation and dissemination of the organisational knowledge base.

3 Practical Application of Digitisation

The banking sector in Kenya is growing at a fast rate and needs to re-engineer existing processes to deal with the ever increasing workloads. Take, for example, a loan approval and disbursement process which would normally take two or more days to complete using the manual processes in which various departments would require to access one file. Thus, some parties would be delayed. The approval is dependent on the physical presence of specific approvers. Therefore, there is great risk of documents being mishandled and misplaced hence putting the integrity of the processes in doubt.

The above problems can be solved using an electronic workflow, like credit quest, where loan documents once received at the branch from the client would be scanned into the EDMS. Once scanned in the EDMS, the loan application would be routed to a central processing centre at the headquarters where all processes are centralised for approval and processing through an electronic workflow. This process is independent of geographical barriers. The workers need only to access a computer terminal to process work while the approvers can approve and disburse payment at the comfort of their iPad and smart phones thereby allowing banks to process loans faster and meet client demands. This can be replicated to other processes such as account opening, product launch, administrative duties, human resource unit, and others functions. This is just a tip of what the systems can offer. Digitisation systems are evolving into more dynamic solutions that provide organisations with a competitive edge over the competition allowing banks and other financial institutions to save cost and enrich the customer experience.
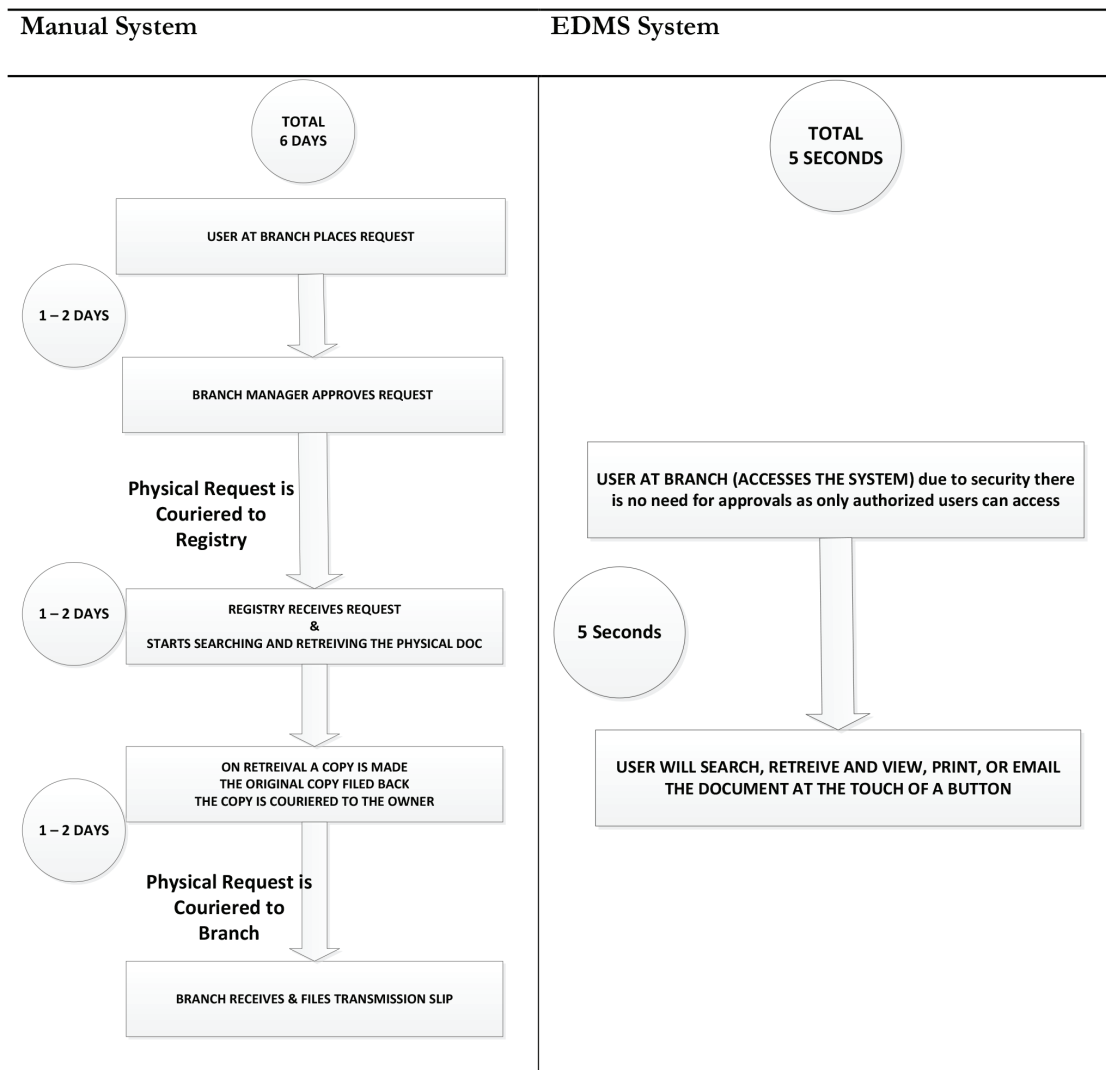
Manual System	EDMS System

TOTAL 6 DAYS

USER AT BRANCH PLACES REQUEST

1 – 2 DAYS

BRANCH MANAGER APPROVES REQUEST

Physical Request is Couriered to Registry

1 – 2 DAYS

REGISTRY RECEIVES REQUEST
&
STARTS SEARCHING AND RETREIVING THE PHYSICAL DOC

1 – 2 DAYS

ON RETREIVAL A COPY IS MADE
THE ORIGINAL COPY FILED BACK
THE COPY IS COURIERED TO THE OWNER

Physical Request is Couriered to Branch

BRANCH RECEIVES & FILES TRANSMISSION SLIP

TOTAL 5 SECONDS

USER AT BRANCH (ACCESSES THE SYSTEM) due to security there is no need for approvals as only authorized users can access

5 Seconds

USER WILL SEARCH, RETREIVE AND VIEW, PRINT, OR EMAIL THE DOCUMENT AT THE TOUCH OF A BUTTON

Figure 1: Flow Chart

Source: Adapted from Xie, Zou and Liu (2015)

Xie, Zou and Liu (2015) demonstrate how various branches will generate numerous records of bank slips which are then shipped to the banks archive on a daily basis. Occasionally, there will be requests to access the archived documents. This process will normally take a day or two to be processed and will require a dedicated records management team to execute the request (search for the physical record, retrieve, make a copy and transmit via courier). On the other hand, if these documents were captured within an Electronic Document Management System, retrieval would be done directly by the authorised users at the branch without requiring the intervention of the records team. The user at the branch would simply search and retrieve the record at the touch of a button. In cases where an external party requires the document, the user can simply print or email the document. The flow chart in Figure 1 demonstrates the manual and EDMS systems' processes as explained by Xie, Zou and Liu.

4 Benefits of Records Digitisation Technologies and Systems

According to the International Records Management Trust, a United Kingdom based consultancy company, other benefits of records digitisation technologies and systems include:

1. **Control of records creation and growth:** An effective records digitisation technology and system addresses both creation control (that is, it limits the generation of records or copies not required) and records retention (a system

for destroying useless records or retiring inactive records), thus stabilising the growth of records in all formats.

2. **Improvement of efficiency and productivity:** Time spent searching for missing or misfiled records is non-productive. A good records digitisation technology and system can help any organisation to upgrade its recordkeeping systems so that information retrieval is enhanced, with corresponding improvements in office efficiency and productivity.

3. **Ensuring regulatory compliance:** The only way an organisation can be reasonably sure that it is in full compliance with laws and regulations, is by operating a good records digitisation technology and system which takes responsibility for regulatory compliance.

4. **Cost reduction:** Professional records digitisation helps organisations to save on the costs of space and equipment, which are engaged to manage records that would otherwise have been disposed of.

5. **Risk mitigation:** Adequate records management protects organisations from risks resulting from insufficient or inadequate information such as weak management decision-making, a negative corporate image and the loss of client confidence. Proper records management reduces instances of leakages of confidential information to unauthorised persons reducing the chances of litigation on confidentiality.

6. **Assimilation of new records management technologies:** A good records digitisation technology and system provides an organisation with the capability to assimilate new technologies and take advantage of their many benefits. It is easier for an institution to introduce and test a new system if it already has one without interfering with the existing records and also not having to undergo training costs of personnel.

7. **Knowledge sharing:** A key perspective of organisational performance management is knowledge sharing. Proper records management ensures that critical knowledge is captured and preserved for sharing across the organisation to sustain competitive advantage and ensure continuity in service and product delivery. Through knowledge sharing, turnaround time is reduced in service delivery and corporate image is also enhanced since it gives the perception that all employees are hands on about happenings in the institution.

5 Literature Review

The International Organisation on Standardisation (ISO) 15489-1:2016 defines a record as information created, received and maintained as evidence and information by an organisation or person in pursuance of legal obligations or in the transaction of business. This definition is also shared by a number of authors, who contend that a record can be in many forms of media including the electronic media (Ngulube, 2001; Shepherd & Yeo, 2006).

Records digitisation is rapidly becoming one of the standard forms of preservation for libraries, archives and information centres as well as analogue materials in the banking sector. This approach is enabling the institutions to ensure information contained within fragile, organic materials will still be viewable by future generations. However, as technology changes, there are concerns that the methods used today to preserve these records are not going to be sufficient or even viable in the future. Software and document formats change very quickly, and could be obsolete in a relatively short time period. This applies both to hard copy records that are converted into digital copies as well as born-digital items (those created as digital). For this reason, digitisation is not strictly a preservation activity as the new records will require preservation as well. It is important to understand what digital preservation is and how it can be effectively used to preserve collective knowledge for future generations. There is little information on this topic in the literature today, and finding relevant articles and sources is difficult. There are different schools of thought on digital preservation. The old school of thought sees it as the most important advancement in the topic of preservation, while the modern school opines that it is not the only or even the best solution to keeping information safely. While there are opposing views on some aspects of digitisation and digital preservation, there are also areas where most authors like Conway (2010) and Smith (2016) seem to agree. Budgetary issues, professional education and increased technological currency are frequently mentioned as challenges in the field, and the need for better and more in-depth education, cost-sharing initiatives, and cooperation are universal suggestions. This is a field where changes happen very fast. What was current at one time becomes out-dated quickly.

Digitisation of records is the conversion of traditional, analogue materials such as log books, title deeds, maps, and other paper items into an electronic, digital copy. This is not to be confused with digital preservation. As Conway (2010:64) notes, it is important to distinguish "digitisation for preservation" from "digital preservation". Digital preservation is the conservation of all digital materials, whether they were born digital (such as emails, websites, videogames, and other electronic files), or whether they have been digitised from analogue materials (Conway, 2010). Although digitisation is often seen as preservation, this is not always the case. According to Smith (2016), much is gained by digitising, but permanence and authenticity are not among those gains. Digitising may allow greater access to an artefact, but it comes with its own challenges. Digital records have many the same function requirements that paper ones do. In other words,

the work required by professionals to transfer, process, store, and preserve files, which allows a user to retrieve the desired information, applies both to analogue and digital records (Galloway, 2011).

However, once an item has been digitised, that new version requires continuous, on-going maintenance for as long as the record is to be kept. This presents huge cost and time implications for the facility (Sanett, 2013). Additionally, when it comes to digital materials, there is a huge difference between storage and preservation. Storage is simple, as there is enough space in hard drives or in the cloud for as much material as can be created. The difficulty is that even if the stored data is intact, it may not be available or accessible, due to technological changes or human error in naming conventions. Preservation, that is, keeping the information available and usable for future generations, requires much more complex actions (Brand, 1999). Differences in digital preservation needs occur depending on the type of institution involved. Libraries usually have published materials, which mean there is often more than one, and usually many, copies of the same artefact. Preserving the original material is important, but the information contained within is often more important to users (Galloway, 2011). Conversely, archives contain material that is unpublished and one of a kind. In this instance, both the information contained and the original artefacts themselves have intrinsic value. It is important for both libraries and archives to preserve the authenticity of an artefact, as well as the source of the object as a means of answering the questions surrounding where it came from, whom it came from, and in what context it was created (Galloway, 2011).

Galloway (2011) explains that if something is worth preserving digitally, it must be preserved as closely as possible to its original state. This will guarantee the authenticity of the item and preserve it for historical use. It is also best to work with both digital and hard copy mediums to ensure safekeeping of all types of knowledge contained in a material, as digitisation is only possible if works have been preserved in a more traditional format as well. Preservation strategies are more important than the actual formats used, and migration strategies for formats must be decided upon (Tennant, 1997). There are a number of ways professionals can ensure that digitally preserved materials remain usable. It is important not only to preserve the record itself but also the hardware and software it was created on and designed to be used with. Digital materials are very complex, and compression, encryption, and HTTP links that were active in original works make it much more difficult to extract meaning from a preserved artefact. Because it is often not possible to preserve a digital file exactly as it was when it was created or when it was analogue, at the very least the focus must be on preserving the 'essence' of a file (Zorich, 2007). Emulators are computer programs designed to mimic or "emulate" other operating systems, and are one solution to obsolete software or hardware (Galloway, 2011). Using an emulator allows users in the future to see exactly how the material could have looked like. By creating a similar operating environment to the original, emulators help the files to remain interactive. Because it is important to be able to see something in its original form whenever possible, in order to preserve historical authenticity, emulators would need to be created and updated regularly, as older technology becomes obsolete (Jain & Mnjama, 2016).

When working with digital materials, there is the problem of mutability. An example of this is with a video game. Watching the game is a very different experience than playing it, and it is difficult to get the full feel of the material when not using it in its intended context. Because of this, it is important to use the most descriptive metadata possible, in order to give future viewers a better understanding of what they are seeing (Brand, 1999). The format, the naming convention, and the reasons why certain aspects have been chosen will all likely be of interest to future users, just as aspects of old artefacts, such as the binding used in an old book, or what was used for ink, are important to scholars.

Digitisation and therefore digital preservation are no longer emerging tools in the financial sector; they are now the preferred and accepted practice for saving many analogue records. Libraries and archives are in a transitional period and many are moving away from print into a primarily, or, in some cases, entirely, digital format (Jain & Mnjama, 2016). Users expect instant access to materials wherever they are, and the only way this can be achieved is by digitisation of records (Conway, 2010). It is important that current and future users will be able to access the information, be able to tell whether the information is accurate and preserved as it was intended to be, and use it in their intended way (Gladney, 2009).

6 Rationale of the Study

Banks and other financial institutions produce vast volumes and varieties of records on a daily basis. These records include, but are not limited to, customer details, account statements and transactions, as well as corporate documents such as permits, licenses minutes and reports, among others. As the volume of these records continues to grow, banks face myriad challenges such as inadequate storage space; inability to search, locate and retrieve records promptly when needed; and vulnerability to unauthorised access and misuse. Most banks have therefore turned to digitisation as one of the strategies of coping with the aforementioned challenges.

Financial institutions in Kenya, particularly banks, can benefit from an effective use of the records digitisation technologies in their operations. Unfortunately, operational literature on records digitisation technologies is scanty. Perhaps, this is

because of the high costs required for initial system purchase and training that come with the implementation. However, despite the constraints that come with the implementation, there is need for better records as they are the best means for preservation and access (Cox & Cox, 2001).

In their quest for new information technologies, banks are facing risks and adjustments that are common to many other industries and these are easily observable nowadays. Cyber-risks and the transformation of human capital are probably the most important ones that banks deal with. Banks are now investing huge amounts in cyber security.

According to Business Wire consultants, the breach level index, in 2017 alone were 1,765 vulnerabilities detected in information systems that caused data breaches affecting 2,600,968,280 information registries globally. Of these, the breaches that affected the financial institutions were 235,563,765 being 9% of all the breaches affecting all the industries, coming in third after governments 18%, technology 15%. There are 3,407 data breaches every minute. It is important to consider that one of the information advantages attributed to banks in managing credit and market risk is their day-to-day market participation but this only makes the amount of information that banks have to protect larger and larger.

The specific objectives of the study anchoring this chapter were to investigate the digital technologies and systems used by banks in Kenya to digitise their records; assess their fit to the needs of the banks; examine their viability for the Kenyan banking environment; and propose strategies to enhance the fit and viability of digitisation technologies and systems to the Kenyan context as a means of enhancing the benefits of digitisation for banks in the country.

7 Methodology

The study was designed as an exploratory survey. This is a methodological research approach used to investigate emerging research problems which have not been clearly defined (Stratton *et al.*, 2008). The cardinal purpose of exploratory research is to gain familiarity with a phenomenon or acquire new insight into it without necessarily making conclusions about it (Brown, 2006). Stebbins (2001) argues that exploratory researchers utilise discovery and serendipity to explore and gain valuable insight into the research problems. The authors found this approach appropriate for the current study because the concept of records digitisation technologies and systems is relatively new in Kenya. Similarly, records digitisation and technologies are dynamic to the extent that it may not be appropriate to give a "final word" on matters pertaining to them. The research design was also considered appropriate because of the limited literature on the topic of study.

The population of study consisted of Kenyan banks identified from the Central Bank of Kenya online database. The authors accessed and analysed the banks' various operations. Data was collected through content analysis of the bank's operations based on the files from the Kenya Bankers Association's checklists and guidelines. Additional data was collected through interviews with 510 staff members drawn from the thee banks picked through information-oriented purposive sampling. The sample size was arrived at using a calculator proposed by Survey Monkey based on the formula below:

$$Sample\ Size\ =\ \frac{\frac{z^2 \times p(1-p)}{e^2}}{1+(\frac{z^2 \times p(1-p)}{e^2 N})}$$

Where Population Size = N | Margin of error = e | z-score = z

From the 510 population size, confidence level of 95% and margin of error of 5%, the calculated sample size was 220. Out of the 220 distributed, 197 interviews were successful representing a response rate of 89.54%.

The institutions requested that their identity be concealed for confidentiality purposes. One bank belongs to tier I, while the rest belong to tier II. The selection of the staff to interview was based on their availability and willingness to participate in the study. The collected data was analysed using descriptive statistics because it enabled the authors to summarise, interpret and describe the data within the context of the study.

8 Findings

Some of the questions to the interviewees included a response on whether their institutions have you digitised their records or not, name of the digitisation system in use, how the systems fits in the institution's operations and their general level of training on the use of the systems. Based on the responses, the study findings led to the following findings:

8.1 Records digitisation tools

The study revealed that there are various digitisation tools and systems currently used by banks in Kenya. These are identified and discussed hereunder.

One of the systems used was the Straight through Processing (STP). This is a system used by banks to speed up

their transaction processing time mainly in the back office. The software enables banks to have the same information being streamlined through a process across multiple points. This is performed by facilitating information that has been captured electronically to be transferred from one party to another without manually re-entering the same pieces of information repeatedly over the entire sequence of events. The system, therefore, helps in avoiding data capture errors, saves time and enhances confidentiality since information only passes through the hands of intended bank staff.

Another system used by the banks and most financial institutions in Kenya is the Credit Quest (CQ) software. It is a suite of products that provides integrated and easy-to-use solutions that are built for the unique needs around records management. It also reduces turnaround time on applications and boosts productivity by automating routine tasks. As such it increases efficiency via an adaptive workflow, allowing collaboration and common access to an electronic credit file.

The study further revealed that banks in Kenya also use tools such as Kodak Capture Pro for capturing images and Case 360 for processing and sharing account opening forms and related documents and processing daily vouchers. Kodak Capture Pro and Case 360 both have scanning, viewing and sharing capabilities that if optimally employed will greatly enhance workflow within the financial institutions. Other digitisation tools used include Sybrin system which is used for cheques truncation processing. The system allows users to scan and electronically share copies of the cheques across banks, hence, avoiding the physical carrying of cheques and reduces the turnaround time for cheques clearance.

8.2 Assessment of the "fit" of the digitisation tools

Technologies have a high potential to generate value to the adopting organisation if they fit the tasks of the organisation. Therefore, the fit of a technology is a measure of the extent to which it performs the tasks the adopting organisation requires it to. According to Liang and Wei (2004), the fit of technological tools measures the extent to which they match the needs of the tasks. In this study, the authors assessed the extent to which the digitisation technologies used by banks in Kenya fit the requirements of the tasks they are being used for.

All the respondents affirmed that the digitisation systems their organisations have deployed best serve the tasks for which they were installed. They explained that the core tasks of digitisation technologies in banks are embodied by the features and functionalities in the systems. These included capture, index, save, share, archive, search, retrieve, view, print, and back up digitised materials. The respondents also explained that digitisation systems have enabled banks to deploy security measures not possible with paper-based records systems. For instance, it is practical to implement "view only" rights on paper-based records. This is possible on digital records systems which enable authorised persons to view files, for instance, to know their status. The respondents also explained that the workflow management feature on digital records systems streamline operations. It is a necessary functionality which digital records systems bring to the banking arena.

It was observed, however, that some banks use different systems for different functions leading to a fragmentation of sorts. This fragmentation of systems still requires high level of human interaction through paper work, diluting the noble intention of digitisation of records and processes. There is need for an integrated system that performs most of the critical activities and only allows minimal human interaction during the processes. The respondents also pointed out that some banks only used a few of the modules available on digitisation systems thereby limiting their benefits.

From the foregoing, the authors conclude that the digitisation systems currently used by banks in Kenya fit the tasks they are put to by the banks. It is expected, however, that new features may be required once in a while as a consequence of new expectations emanating from emerging customer needs and regulatory compliance.

8.3 Viability and challenges

Liang and Wei (2004) explain that the viability of technologies is a measure of the readiness of the environment in which they are being adopted to support their effective use. They explain that viability is considered in terms of economic feasibility, technical infrastructure and the social readiness of the adopting organisation.

In this study, the respondents were of the view that the digitisation technologies currently used by the banks in Kenya are viable. They explained that the Government of Kenya through the ICT Authority has invested in developing ICT infrastructure to enable institutions enjoy full benefits of their digitisation efforts. Through regulation of ICT in the public sector, stakeholders in the private sector too enjoy a windfall of benefits such as high-speed Internet connections which is an important element for any digitised process to be successful.

However, banks have also experienced a fair share of challenges that come with the quest to digitise. These challenges include financial constraints on initial installations, inadequate personnel in the projects, poor handling of original documents and material and inadequate resources for sustaining the various technical support contracts. Given that technology is dynamic, the rate of obsolescence for ICT is high. As such, banks have to keep substantial reserves to cater for continuous replacements.

To mitigate the challenges, study findings revealed that various banks in Kenya undertaking digitisation projects have devised strategies which have enabled them to cope with some of the challenges. Some of the workable strategies include documenting standards and best practices to be applied uniformly across projects. Other strategies usually applied include having digital and quality standards and policy enactment before digitisation starts. Furthermore, all staffs are engaged during digitisation to ensure a consistent transition and reduce chances of resistance. Similarly, all digitisation projects should decrease the likelihood of re-digitising in the future by promoting best practices for conversion of materials into digital format and the long-term preservation.

9 Conclusion

Banks in Kenya have invested heavily in various technologies and systems all of which are expected to ensure security of records and enhance operational efficiencies within the institutions. The systems fit the tasks to which the banks have committed. Similarly, they are viable in the economic, infrastructural and organisational environment of banks in Kenya. Rapid development of technology has changed the way banks work and interact with their customers. Most of the banks work by using the digital technologies and systems in their various operations and even insisting on their customers to embrace the same. Leveraging on technology through installation of ERP systems to integrate the various systems is therefore inevitable for banks to realise the benefits of digitised operations as demonstrated by the capabilities of the software mentioned in the findings.

There is need for further studies on this subject to reveal the current state of records digitisation technologies and systems used in the banking sector in Kenya and its impact on service delivery. The research on the nexus between records digitisation technologies and systems and service delivery would have a direct impact on risk mitigation because efficient service delivery systems and seamless flow of processes contribute heavily towards risk mitigation.

It is also of importance to note the policy implications associated with records management. Countries all over the world have come with legislations to guide issues relating to management of records. In Kenya for instance the management of records is carried out in compliance with the Public Archives and Documentation Service Act Cap 19 laws of Kenya and other relevant statutes, rules and regulations that may be issued by the Government of Kenya from time to time. International Standard Organization (ISO) 9001 and ISO 15489 also emphasise the global need for standardisation of records management. By so doing, jurisdictions protect their records management systems' patents.

10 Recommendations

During the study it was noted that banks have installed various systems whose intention is to increase efficiency in the operations. As such there is need for them to install of ERP systems to integrate the various systems instead of the disjointed systems which are costly in terms of maintenance and staff training.

Banks should also endeavour to build in-house human resource capacities through continuous staff training on the systems and technologies that are in operation in their respective institutions. This will enable them to easily handle issues arising from the systems such as system breakdowns instead of relying on the system developer or service level agreements.

Banks have no choice but to increase their budget allocations and invest more in human capital, if they really want to leverage on records digitisation technologies and systems for their business development growth.

Since this study limited itself to only a few banks in Kenya, a similar study needs to be conducted in all banks in Kenya to reveal the status of records digitisation technologies and systems in all banks. This will be necessary to understand whether the findings of this study are indeed representative of the entire banking sector.

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About the Authors

Mr. Malenya Lusimba is a Senior Administration Officer in charge of Records Management and Procurement Bank of Africa, Kenya. He has worked with different organisations in Kenya and other African countries including Archiv System, a subsidiary of AGS-FRASERS and URTNA–PEC, now Africa Union of Broadcasting (AUB). He is currently pursuing his Master's degree in Information & Knowledge Management at the Jomo Kenyatta University of Science and Technology, Kenya. He holds Bachelor of Technology in Information Studies, a Diploma and Higher Diploma in Information Science all from the Technical University of Kenya. His area of specialisation is Archives Administration and Records Management.

Tom Kwanya is an associate professor in the Department of Information and Knowledge Management at the Technical University of Kenya. He is currently also serving as the Director of the School of Information and Communication Studies. Prior to joining academics fulltime in 2013, he worked as a consultant on public information and knowledge management. He has authored several refereed journal articles, book chapters and conference papers. He has also edited two books and authored two monographs. His current research interests include organisational knowledge management, indigenous knowledge management, technology in information and knowledge centres, big data, and Internet of Things. Prof Tom Kwanya is also a research fellow in the Department of Information Science, University of South Africa.