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LIST OF ABBREVIATIONS

CHELSA:	Committee of Higher Education Libraries of South Africa
EIFL:	Electronic Information for Libraries
ICT:	Information Communication Technology
ILS:	Integrated Library System
LELICO:	Lesotho Library Association
LSP:	Library Service Platform
OCLC:	Online Computer Library Centre
OPAC:	Online Public Access Catalogue
SANLIC:	South African National Library and Information Consortium
WMS:	Worldshare Management Services

KEY TERMS USED

21st-centurylibrary services: For the purpose of this study, this term is meant to encompass all those services that are relevant to researchers and patrons who have a high level of digital literacy. These users are skilled Internet users and do not need librarians as intermediaries. The term is synonymous with terms such as "library of the future," "modern libraries" and even to some extent, "digital libraries."

Cloud computing: cloud computing is said to help libraries shift from owning and operating local servers to web-based services (Webber& Peters, 2010:4). It provides technical infrastructure and services to those who do not have their own infrastructure or do not have the relevant IT skills.

Information Communication Technology (ICT): The term, as well as its acronym refers to technologies used for broadcasting, telecommunications and mediated communications. The term "ICT" is defined by Parvez (2011) as a combination of computer applications and communication technologies used for gathering, process

Library automation: This term relates to the use of a computer system or application to manage one or several key library functions such as acquisition, serials control, cataloguing, circulation and the public access catalogue (Lam, 2002:1; Jan & Sheikh, 2011:10).

Lesotho Library Consortium (LELICO): A collaborative initiative of certain Lesotho libraries seeking to enhance resource sharing using ICTs. (Sejane, 2017:4; Taole, 2008: 10).

Resource sharing: In the library world, resource sharing means that you are collaborating with one or more libraries to maximise access to a larger array of resources by sharing the collections of the cooperating libraries or pooling funding to purchase shared digital resources, for example, interlibrary loans. (OCLC, 2018).

Shared OPAC: "With the arrival of the internet, most libraries made their OPAC accessible directly from a server to users all over the world. It is now also possible for libraries to share the same OPAC" (Farkas 2014).

CHAPTER 1: INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 Introduction

Having worked with the libraries under study for almost two decades, the researcher has learnt that it is vital for libraries to automate so that modern library services can be provided. In the past, libraries could operate manually without the use of automated library systems. This was doneusing the Browne charging system. The process worked as follows: when a new book was purchased, several detailed cards, containing the bibliographic record of the book were created to represent the holding in the library's card catalogue. One of the cards was inserted into the book pocket, and the pocket was pasted into the book during the cataloguing process. Library members were each issued with a few library cards, which they used to borrow books. The loan process required the book card to be inserted into the borrower card and the borrower's card was then filed alphabetically at the issue desk according to the due date of the books. This process was laborious and entailed a great deal of paperwork and storage issues but helped the library staff to manage the issuing of books.

The arrival of Information and Communication Technology (ICT) products changed the laborious functions described above. Library functions can be completed using computers to deliver a more efficient service in general and for developing effective and relevant services to support scholars, in particular. When library functions are performedwith computer systems, the process is known as library automation (Amekuedee, 2005:443; Eyo & Augustine, 2014:33). The process of automation occurred over several stages, from the simple starting point of typing cards to the complex fully automated systems being used today.

In a report by The Electronic Information for Libraries (EIFL, 2014:2) it is indicated that to attain full or effective automation, libraries, sometimes shared the costs of subscribing to library automation systems by establishing consortia. These consortia shared training in ICT, information pertaining to the latest developments in automation as well as expertise. These aspects made it easier for member libraries to provide their clients with library services that have kept pace with technological developments — the International Coalition of Library Consortia (2010) state that library consortia helped member libraries to stabilise themselves in

the marketplace. According to Mutula (2012:296), libraries contemplating automation should, therefore, be encouraged to form and join library consortia.

Certain Lesotho libraries, like libraries across the world, have grouped togetherin their quest to provide relevant library services. Accordingly, they have formed the Lesotho Library Consortium (LELICO) which enabled them to share resources such as publications, software, databases, human resources, expertise, equipment and training, while reducing costs for individual libraries (Taole, 2008:42; Mutula, 2012:296). Based onthe above, it can be concluded that if all the Lesotho libraries, with the help of LELICO, could be fully automated, it would be possible for all the libraries to provide library services geared tothe 21st century.

1.2 Backgroundto the study

The Kingdom of Lesotho is a landlocked country surrounded by South Africa. According to the Lesotho Review (2015:56), Lesotho is just over 30 0000 km^2in size and has a population of slightly over two million people. Its capital and largest city is Maseru.

LELICO was founded in March 2003, (Taole, 2008:40). LELICO, like other consortia, was formed with the mandate to provide information and documentation services among members. According to Taole (2008:40), LELICO was formed with the following objectives:

a) To develop and improve co-operation among member libraries.
b) To serve as a co-ordination unit among member institutions, organisations and agencies, state and funding sources on those matters related to the improvement of services to members.
c) To work towards a co-ordinated policy of technical information growth and the development of efficient systems, rapid communication among the membership, shared resources, co-operative and co-ordinated purchasing, subscriptions and exploration of other areas of co-operation.
d) To co-operate with other libraries, research institutions and organisations within and without the country to further the purpose of the consortium

Since 2008, LELICO membership has grown from twelve to twenty-one members (EIFL, 2016). LELICO's current membership is as follows

a) The National University of Lesotho Library –with its branches.

b) Lesotho National Library with ten branches serving as public libraries in four districts.
c) College libraries (Lesotho College of Education and Lesotho Agricultural College).
d) Agric Research library.
e) Special libraries in some government departments.
f) Transformation Resource Centre Library (TRC) an NGO library (EIFL, 2013).

The above list indicates that LELICO is a unique consortium as it has several types of member libraries, which include special libraries, a national library and academic libraries.The latest information available about the automation status of each of the LELICO member libraries is available in a study conducted by Taole in 2008. At that time, only four of the member libraries had automated (see Table 1A on the next page). This study endeavoured to update this information (see Table 4F).

Table 1A: Automation status of LELICO libraries in 2008

LIBRARY	AUTOMATED	LIBRARY SYSTEM USED
Agricultural Research (AR)	No	-
Institute of Development Management (IDM)	No	-
Lesotho Agricultural College (LAC)	No	-
Lesotho College of Education (LCE)	Yes	Bookworm
Lesotho Highlands Development Authority (LHDA)	No	-
Lesotho Institute of Public Administration and Management (LIPAM)	Yes	Q & A
Lesotho National Library Services (LNLS)	No	-
Lesotho Planned Parenthood Association (LPPA)	Yes	CDS/ISIS
Lerotholi Polytechnic (LP)	No	-
National University of Lesotho (NUL)	Yes	Integrated Tertiary Software
Palace of Justice (PJ)	No	-
Parliament of Lesotho (PL)	No	-

Taole (2008:123)

During the ten years since this survey was done, much would have changed, but it was not clear whether all libraries were already fully automated. Even if the libraries had been automated, it was anticipated that the systems used, might be outdated. (The statement is based on the fact that Lesotho is an extremely small country andits libraries are small in comparison with those in better-resourced countries. An added advantage of this study would, therefore, also be to document an update on the status of the services rendered by current LELICO members formally. It was not possible to retrieve a LELICO strategy document that indicated any future plans to assist libraries that had not automated yet or to ensure that those that had automated were able to provide services associated with a21stcentury library.

In contrast, libraries in neighbouring South Africa appeared to have transitioned successfully to become modern, proficient providers of relevant services. Additionally according to interviewees from the academic libraries in South Africa, allthe academic libraries belong to a bargaining consortium, the South African National Library and Information Consortium (SANLIC) (2008) and the Committee of Higher Education Libraries of South Africa (CHELSA, 2018) facilitate the strategic discussions that ensure alignment amongst the members.

1.3 Statement of the problem

There are fundamental issues regarding customer service in any service industry, and libraries are no exception. The main objective of a library is to provide information to the right users at the right time (Pandya, & Darbar 2017:14). In the library environment, users expect to have access to reliable information and automated library services can enhance the value of the library by providing excellent information services. Learning, research and decision-making processes all require reliable, relevant and timeous information. At the start of this study it was not certain that Lesotho libraries were able to deliver on this mandate. There is neither progress nor procedures in place to encourage new developments. As a result, Lesotho libraries are unable to introduce the technological developments which in turn will affect the provision of information services. This poses a problem for the nation as citizens are deprived of the latest information which can help in decision making. Informed decisions can take the country to greater heights and at the same time help scholars and researchers with valuable information.

1.4 Aim of the study

This study strove to establish what the service delivery *status quo* was in LELICO member libraries. Once the *status quo* was known, the researcher formulated recommendations that these could be used by LELICO so that it could devise a strategy to assist member libraries to modernise their services.

1.5 Objectives of the study

The primary intention of this research was to document the gap between the *status quo* and the state of the art in library system-based service delivery at LELICO libraries. While acknowledging the anticipated resource constrained status of the selected libraries a second objective was to also identify the actions that can drive a strategy to help LELICO libraries become more relevant in terms of service delivery.

Before these objectives could be addressed, it was necessary to:

i. Establish which services modern patrons/library users can expect from modern libraries.
ii. Define which of the modern services are associated with an automated library system.
iii. Establish the automation status of libraries that belong to the LELICO.
iv. Investigate whether the identified 'modern services' are already being delivered by the LELICO libraries.
v. Identify areas of service improvement for LELICO libraries.

These sub-objectives lead to the formulation of number ofvery specific questions. These questions will be used to guide the research.

1.6 Research questions

To ensure that the set of primary objectives are addressed, the study posed the following principal research question:

What actions are required to ensure that LELICO libraries will remain relevant to the 21st century library user?

In order to answer this question, the studyattempted to answer the following sub-questions:

a) Which services do modern patrons expect to receive from modern libraries?
b) Which of the contemporary services are associated with an automated library system?
c) What is the automation status of libraries that belong to the LELICO?
d) Are any of the identified "modern services" perhaps already delivered by the LELICO libraries?
e) Which service improvements can be recommended for LELICO libraries?

1.7 Concise literature review

A detailed literature review is provided in Chapter 2 of this dissertation. The intention here is to provide an overview of the most important research that was consulted and to show where the gap in the literature, as far as this study is concerned, is.The literature review covered the period from 2008 up to 2015. In the first instance, the researcher consulted literature that focused on the status of automation in LELICO libraries. Furthermore, the aim was to find the extent to which the LELICO libraries have embraced automation in their service delivery. It was found that very few cases have been documented. The most relevant research, specifically focussed on Lesotho libraries and their state of automation, is a thesis by Taole (2008). She established that out of 12 LELICO member libraries, only four were computerised in 2008 (Taole, 2008:123). Significantly, it appears that there is a dearth ofrelevant literature in the public domain describing the current *status quo in* Lesotho. Information provided by EIFL (2014) indicates that LELICO's membership has grown since 2008, but this information is also already dated.

Other authors consulted were Nok (2006); Islam & Islam (2007), Obaseki (2011); Mutula (2012); Barfi (2015); Idiegbeyan-ose, Ilo & Isiakpona (2015), and Pieterson (2015). Their work is of specific relevance because they address issues linked to library automation in Africa. The specific library automation challenges identified were a lack of financial support, lack of skilled manpower, ICT phobia, techno-stress and the incessant power shortages.

One of the other important authors to consult, when it comes to library automation, is Breeding (2009, 2012a, 2012b, 2015a, 2015b), his reviews of library automation completed in 2009, 2012, and 2015 were especially most useful and were used extensively. From these reviews, it

made clear that due to the technological innovations that are rapidly changing, so are the systems used in libraries for automation. It is possible for the latest systems to break free from the models of automation that are focussed on print material. They also eliminate a model of ownership and allow the library to concentrate on access to information (Breeding, 2015b).

In the last instance, Pieterson's (2015) thesis provided a good perspective on the services that should be available to the modern library patron.

1.8 Research methodology

The research methodology for this study is described in detail in Chapter 3 of the dissertation. The intentionhere is only to provide a brief overview of the research methodology. The chosen methodology is central to the research process because it is the lens through which a researcher looks when making decisions on acquiring knowledge about social phenomena and getting answers to the research questions (Ngulube, 2015a:127). A research methodology is defined by Blaxter, Hughes &Tight (2010:59) as the approach or paradigm that underpins the research. The sub-sections below provide details regarding the research approach, the design and on how this research was conducted and which data collection and data analysis methods were used to address the objectives of this study.

1.8.1 Research approach

There are three approaches to research: quantitative, qualitative and mixed methods research. Data collected for this study is not in the form of numbers, but was instead collected by means of in-depth interviews to help the researcher understand the phenomenon being studied. This researcher, therefore, used a qualitative research approach to investigate the research problem. In brief: Corbin& Strauss's (2015:4) explanation of qualitative research refers to a form of research in which the researcher collects and interprets data, making the researcher as much a part of the research process as the participants and the data they provide. De Vos et al, (2005:362) mention that the strong point of qualitative data is its rich description. According to Creswell (2014:185), qualitative data collection has the following characteristics:

a) It is conducted in a natural setting.
b) It enables multiple sources of data such as interviews, observations and documents rather than to rely on a single data source.

c) Researchers try to develop a complex picture of the problem or issue under study.
d) The researcher keeps focussing on understanding the meaning that the participants hold about the problem or issue – which may not necessarily be the meaning the researcher brings to the research.

Extracting relevant information from participating librarians required an informed discussion which allowed for probing and memory jogging. Hence, it was obvious that this specific study needed to be qualitative in nature.

1.8.2 Research design

A research design is defined by Nieuwenhuis (2007:70) & Creswell (2014:13) as "a plan or strategy which moves from the underlying philosophical assumptions to specifying the selection of respondents, the data gathering techniques to be used and the data analysis to be done." Research designs are therefore types of inquiry within a research approach. Since the study is a qualitative investigation, the research design for this study is also qualitative in nature. In brief: the research was designed as a case study. Maree (2007:76) emphasises that the purpose of a case study is to gain insight and to understand the dynamics of specific situations. The researcher did exactly that by interviewing both managers and system administrators of all the LELICO libraries.

1.8.3 Data collection methods

Suter (2012:217) is of the opinion that in research there is little chance of answering the research question, or testing the research hypothesis, without having the right quality of primary data, that are defined by Ngulube (2015a:74) as data collected by the researchers for the purpose of research. Data collection methods also need to be aligned to qualitative research. Typical methods used for qualitative data collection are interviews, observations, and focus group discussions. For this study, the primary data were collected using interviews.

Interviews are consideredthe ideal method for data collection not only because they are believed to be the main mode of data collection in qualitative research, but, as stated by De Vos *et al.* (2005:287), "you interview because you are interested in other people's stories and stories are a way of knowing." Interviews were conducted because the researcher wanted to get rich and descriptive data that would help her to understand the participants' perceptions and

experiences of automating libraries – with the intentionof considering these when designing a strategy to get all the libraries automated. Interviews are good data collection tools as the interviewer can "read" people, assess their moods, probe, clarify and seek additional information. For these reasons, face-to-face interviews wereconducted with respondents from the LELICO member libraries. Telephonic and Skype interviews were conducted with respondents outside the country, (South African academic libraries and library system vendors).

Taking notes, recording the proceedings and capturing non-verbal cues are an integral part of conducting interviews. The way in which these were managed,is described in full detail in Chapter 3.

1.8.4 Data analysis

When the data have been collected, the next stage is to process the information so that the data can be reviewed to see if the research question(s) has /have been answered (Leedy & Ormrod, 2005:29). In this section, the qualitative approach that aims to look at an in-depth understanding of the topic is introduced.

The data collected during the interview sessions were recorded and then documented as a 'note for record.'The notesfor record were provided to participants to review for accuracy. The same procedure was for data that was collected through telephone and skype interviews.The notes were then read and reread by the researcher in order to gain a broad sense of what information had been collected. The data were coded and subjected to thematic analysis. Since the study did not collect large amounts of data, the common themes, patterns and codes were identifiedmanually.

1.8.5 Population

It is extremely important in research to describe the target population (for example, thepeople / ideas / institutions) that will be included in the research. The target population for the study can be subdivided into three strata: the LELICO Libraries, the South African academic libraries and the library system vendors.

The first stratum comprised the LELICO libraries. LELICO has 16 members (EIFL, 2016) libraries, which are all based in Maseru, the capital city of Lesotho. In addition, the Lesotho

State Library with its main library situated in Maseru, also manages ten branch libraries which are distributed across the country. All 16 LELICO members were included in the target group. To obtain quality data for the study, interviews were held locally with the heads or systems administrators of each of the LELICO libraries. The heads were targeted because some of them were at the forefront when their libraries were established. They had extensive knowledge about the history of their respective libraries, and therefore, they were able to provide in-depth information regarding their expectations and requirements for library automation.

A second layer or stratum in the target population is the South African academic libraries. Three of these libraries were purposivelychosen for benchmarking purposes. The criteria used to choose the applicable libraries are discussed below (see section 1.9.5 sampling).

The third layer in the target population consists of the library system vendors. They were included in the target population as they play and will continue to play an important role in automating the libraries in Lesotho. Three system vendors, Inmagic, Alma and Worldshare Management System, were also selected purposively.

1.8.6 Sampling

The process used to select a portion of the population for the study is called sampling. In qualitative research, either representative or purposive sampling is usually applied. Purposive sampling, which was used in this study, means that participants were selected because of certain"defining characteristics that make them the holders of the data needed for the study" (Nieuwenhuis, 2007:79).

As was indicated above, the first stratum in the target population is the LELICO member libraries. LELICO is the only consortium in Lesotho which dealsspecifically with the use of ICT in libraries. By virtue of this mandate and because the group is relatively small, it was decided to approach all the members (full population sample). From the LELICO member libraries, two groups of people were identified to be interviewed. Firstly, the head librarian, as a decision maker, to provide information regarding managerial decisions and strategic direction was chosen. Secondly, the system administrator was selected as this is the person responsible for the library system (and, therefore also automation at the library).

Convenience sampling was used when the three South African libraries were selectedas a benchmark. Both these libraries are well known and well established and located geographically where it was easy for the researcher to conduct interviews.

For the third stratum of the population, it was necessary to select a sample from an extremely wide range of possible library system providers (vendors). In the end, purposive sampling was used to identify the current vendor of the most popular system in Lesotho (InMagic). In addition, the vendors for Alma and Wordshare were also approached as they are currently the main suppliers of new generation library automation systems.

1.8.7 Reliability and validity of the data

Reliability and validity are key aspects in all research. Reliability is said to be concerned with the consistency, stability and repeatability of the informant's accounts as well as the investigator's ability to collect and record information accurately, (Blaxter, Hughes & Tight, 2010:19). Reliability as further defined by Cohen *et al.* (2011:19) as the ability of the research to yield the same results consistently over repeated testing periods.

In turn, Blaxter, Hughes & Tight (2010) explain that,"Validity in research is concerned with the accuracy and truthfulness of scientific findings."Blaxter, Hughes & Tight (2010) further note that a valid study should always demonstrate what exists and a valid instrument or measure should exactly measure what is supposed to measure.

The researcher conducted the research knowing that the qualitative data collected would not necessarily be valid or reliable for extrapolation purposes. That is the nature of qualitative data. The transcript notes for record were validated against the audio recordings of the interviews and by allowing participants to check the 'note for record' developed after the interview, for correctness. The researcher pre-tested the data collection instruments (interviews) with two LELICO member libraries (LCE and LP) to determine the understand ability of the questions in collecting the expected data.

Reliability and validity are addressedin more detail in Chapter 3.

1.9 Limitations of the study

According to Simon & Goes (2013),the limitations of a study are factors that are beyond the control of the researcher. A limitation in this study was the fact that LELICO, unlike library consortia elsewhere, is a multi-type consortium. As a result, libraries within the consortia are not easy to compare. For example,special libraries have considerably fewer resources than a large academic library. It was, therefore, expected that there would be differences between the different library types, but in today's world of interconnectedness and collaboration the type and size of the library should not determine the level of service or the products the patron has access to. It was therefore decided to include all LELICO members in the target group.

Costs and time were severe limitations as well. As a result it became necessary to conduct some interviews making use of modern communication technology. Lastly, the lack of documented evidence regarding the current state of library automation in Lesotho was seen as a limitation. In the absence of current information, it was also decided to collect and document the state of automation across all LELICO libraries.

1.10 Importance of the study

As was indicated before – the current information about the automation status of libraries in Lesotho is insufficient and outdated. The significance of the study is that it will update the existing body of literature about the automation status and it will record the *status quo* of service delivery in the libraries under study. Therefore, the study fills that gap by providing more recent information regarding the subject, thereby contributing to better planning for service delivery in the Lesotho libraries. The study's significance is also linked to the development of a body of knowledge about relevant library services and the importance of full library automation.

Accordingly, the real value of this research is perhaps more pertinent in Lesotho, but libraries are experiencing similar circumstances could also benefit from the findings and the recommendations.

1.11 Ethical considerations

Researchers should always consider the ethical implications of their research. This study used the guidance provided by UNISA's Research Ethics Policy and ensured that the research

participants will not be exposedto any form of physical or psychological harm. Secondly, the research participants were informed that their participation was voluntary and that they could withdraw from the interviews at any time. Furthermore, they were informed before participation why and how their input would be used.Each participant was given a form that described the nature of the research project, as well as the nature of the participation in the research. In addition, it is important to note that, the participants were assured of their anonymity. No details regarding the participants were shared. That is, that the researcher would keep the nature and the quality of a participant's performance strictly confidential.

Last, but not least, is researcher honesty. Researchers, as advised by Leedy& Ormrod (2005:102) to report the findings in a complete and honest fashion, without misrepresenting what had beendone.Here too, the researcher adhered to the requirements of ethical and honest research by not misrepresenting or fabricating the data collected and analysed.

1.12 Structure of the study

Chapter one introduces the research intention; and provides a statement of the problem, the research objectives and questions, a concise literature review, the methodology that was used, limitations and ethical considerations as well as the definitions of key terms used in the document.

Chapter two contains the results of a comprehensive literature review.The characteristics of 21st century library services were documented toprovide the context and to serve as a guideline for the direction in which Lesotho libraries could move. In the last instance, this chapter also considered the role that LELICO can play in supporting member libraries in their endeavours to modernise their services to their modern patrons.

Chapter three describes the research methodology used for the study in much more detail. The research design selected for the study is motivated, and the target and sample populations are described in detail. The method of data collection and motivation for their choice is provided. The chapter also shows how the research data collected will be analysed.

Chapter four presents the research findings, as well as an analysis and interpretation of the research conducted.

Chapter five presents conclusions reached as a result of the study. Recommendations, based on the findings of the studyare provided.

1.13 In summary

Chapter one provides the study context and alludes to the research procedure that will be followed. Accordingly, the research problem, the objectives as well as the research questions were stated. Furthermore, the research methodology and literature review were briefly summarised as these will be discussed in more detail in Chapters 2 and 3. The structure of the document is discussed, and finally, the chapter also provides the motivation for this study, the expected limitations as well as definitions for the key terms used in the document.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

A literature review is defined by Bless& Higson-Smith (2013:49) as the process of finding and examining literature that relates to the topic in order to sharpen and deepen the theoretical framework of the research study. Another definition of a literature review by Albon & Mukheriji (2015:247)sees it as the critical analysis of related literature in a relevant field in relation to the research being undertaken. The researcher used relevant literature to establish which factors contribute to modern service provision in libraries. Furthermore, the researcher consulted literature to define the characteristic of 21st century library services. Based on the information found, the documented state of LELICO libraries was compared to what was reported in the literature about modern services. This study, therefore, provided the necessary background and context that enabled the researcher to conduct research and establish how well services were being delivered by LELICO libraries.

2.2 Library automation

Looking at its history, libraries, like any service that makes use of ICT, seem to adopt new technologies and services extremely quickly. Cloete (2008:20) concurs with this statement when she states that the developments in library automation and online integrated library systems, whether internationally or in Africa, take place quite rapidly. Horsfall (2014:1) reiterates this fact when he states that library automation has the ability to increase the morale of library staff, to provide faster and easier ways of getting library functions and services done as well as to provide a cheaper means of purchasing information resources. As a result, the number of libraries automating their services is increasing rapidly.

Early in the 21stcentury, Aina (2004:322) defined library automation as the use of computers and networking technologies to perform traditional library housekeeping activities such as acquisition, circulation, cataloguing, reference, catalogue access and serials control. In short, Aina (2004:322) sees automation as using computers and networks to execute library services. Cloete (2008:3); Webber& Peters (2010:2),Ahenkorah-Marfo & Borteye (2010:2) and Faisal (2012: 3) all seem to concur with him. Cloete (2008:3) and Ahenkorah-Marfo & Borteye (2010:2) share the opinion that library automation facilitates the change from manual, paper-

based methods of recording, organising and retrieving information to computerised or automated systems.

In essence, these opinions are the same because as Cloete (2008:3) explains, the result of library automation is an online integrated system, which is software that manages library operations with separate modules that interact and share a central database of records. The process of automation occurs over a series of stages; from a simple starting point to a complex or fully automated stage. With these definitions as background, it is necessary to understand that an automated system is an essential prerequisite for modern services. The next section will first discuss the process of automation, while the characteristics of 21st centurylibrary services are dealt with in section 2.4.

2.3 The nature of library automation projects

Lesotho's situation is perhaps not well-documented, but there is ample evidence that libraries in other African countries also struggled with the process of automating their services. Swee & Abdullah (2005:42) report that automation takes a long time. Nok (2006) reiterates this by stating that library automation projects in Nigeria remained at the planning stage for many years before they were carried out. The reason for taking such a long time, according to Nok (2006), is that the projects were usually planned to be carried out in phases. Faisal (2008) concurs with the view that the automation of a library's services is an extensive project that requires proper planning and active implementation. Simply put, library automation is not an easy task that can be carried out overnight. It needs to be well thought out andplanned in the drawing room before it is executed. The last example is the case of Ghana. Amekuedee (2006),as reported by Ahenkorah-Marfo& Borteye (2010:4), notes that most libraries in Ghana were lagging behindwith regard tothe automation of their operations compared to libraries in the developed countries.

One should note that Amekuedee (2006), in Ahenkorah-Marfo (2014:4), posits that the libraries in Ghana realised the importance of automation. Nonetheless, they were hampered by a shortage of funds to purchase the relevant software, they also lacked support from the university administration, and lastly, they lacked skilled staff to embark on the automation of all library processes.

Nevertheless, Obaseki (2011) reiterates that automation is easy to accomplish when the steps to implement it are followedduly. Horsfall (2014) states that automation is only possible if the conditions necessary to execute it are available. Eyo & Augustine (2014:31) and Obaseki (2011:62) support the view that automation cannot be done overnight. In turn, Marfo (2010:3), &Eyo (2014:31) point out that, in order for automation to be successful, certain steps need to be followed. It is worth noting, however, that these steps may differ depending on the nature of the library, its location and the era in which the project is to be undertaken. This may, therefore, affect the effectiveness of the implementation of the respective automation project. The steps are as follows:

a) Plan the process.
b) Gain support from the institution.
c) Select appropriate hardware and software.
d) Conduct retrospective conversion of the library collections, that is, printed materials and artefacts and records using computer software information machine-readable options .Alternatively, the retrospective conversion of existing electronic records must be carried out.
e) Enter data into the new application.
f) Train the library personnel.
g) Train the end users.

Each of these steps is mentioned in more detail below.

2.3.1 Plan the process

Eyo (2014:31) stresses the importance of planning when conducting automation and expresses the opinion that, since resources are extremelyscarce, especially in developing countries, planning is of critical importance. Proper planning before, during and after automation will ensure successful automation. Furthermore, as stated by Eyo (2014:32), any librarian, anywhere in the world, who wants to embark on the automation of his/her library has to engage in detailed planning as the first step in order to identify the need for or the reason for automation. After that, users, equipment, skilled and unskilled workforce as well as the capital or source of funds, can follow.

2.3.2 Gain support from the institution

Another factor that is part of proper planning for library automation is support from the institution. In effect, a well-planned project will help the library to gain support from both the management and clients. As observed by Swee & Abdullah (2005:29), support from the management is the most important factor in deciding whether or not the library should engage in an automation project. This means that a successful automation project is determined, in part, by the commitment of the institution's management. According to Swee & Abdullah (2005:29),the majority of libraries in Malaysia lacked the support of the executive management. Consequently, that became a challenge for automation projects to be approved and executed effectively. In instances where institutional management supports the library, management may be able to source financial help on behalf of the library. In other cases, management may mobilise input from other departments, such as the IT or the planning sections, to assist with the planning of the automation project. With this type of support, automation projects are unlikely to fail. These sections will be able to use their expertise to guide the library in choosing a reputable vendor for the system. As stated by Swee & Abdullah (2005:29), if management understands the importance of library automation, it means that they will most probably support the library.

2.3.3 Select appropriate hardware and software

Based on the above, and on the situation in Nigeria, Obaseki (2011:63) feels that the selection and acquisition of selected software is the most important step to take. Faisal&Surendran (2008:5) had already raised the same issue several years earlier by indicating that selecting the right software is extremely important as the strength of the automation is mainly dependent on the quality of the system software. This means the library should be able to select software compatible with its needs, at a reasonable price. All the modules acquired by the library should be able to manage, organise, and retrieve information regardless of theformat in which the information was captured. Ahenkorah-Marfo (2010:6) explains that, although it is sometimes possible to purchase selected modulesonly, it may not be a good idea to do so, as it will hamper the ability to migrate to new software when it is time to do so. Similarly, Eyo (2014:35) warns that customised software should be avoided as far as possible because no continuity will be builtinto the software.

Another important factor in the selection and acquisition of software is the vendor of the system. A reputable vendor, whose software is maintained regularly at an affordable price, is highly recommended. As a lack of financial resources is one of the major hindrances in library automation, Obaseki (2011:63) advises that software should be purchasedfrom a trusted vendor only. Accordingly, a vendor's credibility and reliability are vital for a quality assured system. Regarding the issue of a vendor of the library system, Ahenkorah-Marfo (2010:6) is of the opinion that it is necessary to establish whether the maintenance of equipment and the training of library staff are provided by the vendor.

Finally, Eyo (2014:34) acknowledges that the needs of libraries differ depending on their sizes, the funding available, the expertise of the staff and the functions performed by the staff members. Eyo (2014:35) explains that there are several criteria to use for the selection of appropriate automation software to enable libraries to achieve successful automation, some of the questions which should be asked include the following:

a) Who has developed the software?
b) How many times has the software been revised since its first launch?
c) How user-friendly is the software?
d) Who will be providing the training and guidance after the installation?

Once the system has been selected, the library could start capturing the collection.

2.3.4 Conduct a retrospective conversion

When a library automates its services, information that was contained in traditional card catalogues, has to be converted into an electronic format. The process of converting the bibliographic details of the existing stock into a machine-readable form is known as retrospective conversion (Aina, 2004:268; Faisal, 2008:7). Ahenkorah-Marfo (2010:6) is of the opinion that after the crucial selection of software, it is also necessary to recapture all the bibliographic records of materials in the library, in whatever format that is appropriate for the library concerned. The processes necessary to convert bibliographic data are, according to Swee & Abdullah (2005:42), Ahenkorah-Marfo & Borteye (2010:6), Eyo& Augustine (2014:31) and Obaseki (2011:62), classification, cataloguing, indexing, barcoding, labelling, and shelf arrangement.

2.3.5 Data entry into the new application

The next step, after retrospective conversion, is data entry into the new library software. Otherwise known as “dealing with the backlog in cataloguing,” this can either be done by the staff of the library concerned or contracted to data entry companies. Ahenkorah-Marfo & Borteye (2010:6-7) compare the difference between making data entries by the staff (in-house entry) and contracting data entry companies for making data entries. He is of the opinion that data entry conducted by the staff of the library is cheap and the number of errors made during the data entry process islow provided that quality control is maintained. While data entry companies will enter all the data in the databases within a shorter period, the data will require some corrections such as the eliminations of typing errors. Therefore, it is advisable for libraries to weigh their options before they decide which methodof data entry they prefer.

2.3.6 Train the library personnel

It was mentionedearlier that the library staff needs to be skilled to cope withthedevelopments that accompany automation. Therefore, their training is an essential component of automation. The training of the staff of the library, according to Ahenkorah-Marfo & Borteye (2010:8), is an essential component forasuccessful exercise. Ahenkorah-Marfo & Borteye (2010:8) and Mamvoto (2008:9) all aver that rigorous in-house and formal ICT and related library information systems training should be carried out regularly. This will help to develop the capacity of library staff to manage the ICT facilities, resources and services. The training should address issues such as:

a) How to input data into the system correctly.
b) How to troubleshoot when problems occur.
c) How to train prospective users of the software.

It is noted that although authors such as Swee& Abdullah (2005:42), Ahenkorah-Marfo (2010:8), Eyo (2014:31) and Obaseki (2011:62) have documented the same steps required for automation, staff training, system selection and retrospective conversion have been documented as the most crucial steps to execute properly to ensure successful library automation.

2.3.7 Training the end users

Training end users isjust as important as training staff. This is emphasised by Hepworth (2010) when he states that for the effective use of automatedlibraries, it is requiredthatthe users, both the library staff and the clients, should have specific knowledge and skills. As a result, training for automation must meet certain criteria it if is to be successful. For example, according to Hepworth (2010), training for end users should:

a) Establish the need for training.
b) Devise a training strategy to cover content and method.
c) Estimate resources required.
d) Produce appropriate training materials.

2.3.8 Addressing the challenges

Finally, Ahenkorah-Marfo & Borteye (2010:9) and Akala & Ayankola (2017:11) listed the challenges that are likely to occur. Generally, automation takes longer than expected, will cost more than what was expected, and will require a higher level of skill than what is available. In addition, a lack of institutional support, an irregular power supply, and myths that the technology can be too expensive, are other challenges to be faced. Automation can also be hindered by logistical constraints, an inadequately skilled workforce, data loss or system crashes, poor management and the vendor's inadequacy. All these challenges need to be addressedto enable successful automation. Knowing about these challenges upfront will afford the automation project manager the opportunity to put risk management plans and mitigation actions in place even before the project starts.

Once the library has been automated, it is possible to start thinking about the services that are made possible because it is automated. In this case, the researcher plans to show that even though libraries are not yet automated, it will be possible to leapfrog ahead and start delivering 21stcentury services as soon as all the LELICO libraries are automated. The next section will define what is meant by the phrase "21stcentury library services."

2.4 Characteristics of modern libraries

The electronic age has brought about many changes to the daily lives of ordinary citizens. The evolution of library automation from the humble beginnings, to the fully integrated cloud-based

services that are currently availableis considerable and worth noting. One of the factors that has brought about this change in libraries is that user demands are continuously increasing (Smith, 2008:2). For example, library users now alsorequire libraries to give access to e-Books instead of only provide access to electronic databases such as Lexus-Nexis or Academic Search Premier (Iglesias, 2013:3). e-Books allow several library users to use the same book simultaneously. This translates into more than one user benefiting from the same asset at the same time, hence, the maximum use of library materials. e-Books are also easy to use and navigate as long as the library holds a subscription to them. Finally, Aina (2004:326) and Obinyan (2013:4) argue that e-Books allow library users to access the library collection from remote locations.

In the past, libraries focused mainly on acquiring information resources and then organising these. That is no longer sufficient because the world is fast becoming digital and routines carried out in libraries are now being automatedin order to enhance their effectiveness, (Amekuedee, 2005:25).

According to Iglesias (2013:3), library users of the 21st century also want access to research facilities that provide them with information as well as assistance in research. In the library environment,Amekuedee (2005:443) notes the transitionin the library mandate or function is "from a custodian of books, to a service-oriented information provider, from own collection to library without walls. From local reach to global reach and from we go to the library to library without walls". These shifts have played a significant role in influencing the introduction of automation in libraries. Now, as it has been shown in the previous section, the use of ICT has enabled library operations to be done electronically, hence, the ushering in of 'libraries without walls' – which is a concept linked to modern libraries.

Twenty-first century libraries are characterised by services such as: software-as-a-service (SaaS) models, data and workflows in cloud infrastructure, web-based interfaces for staff as well as clients, personalisation, personalised alerting services, personalised products, cloud and access to information captured in multi-mediaBreeding (2015a:5). In addition, there are services such as integrated searches across several/all platforms, direct access to research data,integration with mobile technologies, seamless integration into virtual work environments, APIs, the harvesting of content, the harvesting of identities and real-time online communication (Webber & Peter, 2010:6). Further services are workflow automation, self-

service, resource sharing, automated statistics on tap, web services such as a recommender service, shared infrastructure as well as fully integrated library back-office functions (Breeding, 2016; OCLC, 2018). A description of each of these services is provided in Table 2.A.

Table 2A: Characteristics of 21st century library services

Characteristic	Description / definition / explanation
Access to information captured in multi-media.	The library system provides access to information captured in multi-media. The multi-media item can be recorded and played, displayed, interacted with or accessed by information content processing devices, such as computerised and electronic devices, but can also be part of a live performance (Beal, 2018).
Accessibility from any convenient location	This is the extent to which users can obtain a good service at the time it is needed and at a place of their choice(Web accessibility initiative, 2018).
Application programme interface(API's)	The way computer programs 'talk' to one another. It can be understoodin terms of how a programmer sends instructions between programmes (Web accessibility initiative, 2018).

Characteristic	Description / definition / explanation
Automated current awareness services (CAS)	A current awareness service is a process whereby the library informs its users of the newly acquired resources. Library users are kept up-to-date with information by providing them with the option of accessibility without the client having to come to the library and without the librarian's intervention. In the past, the information was made available to the users through telephone calls, letters, library bulletins and email messages. Today, library users can have information on their mobile devices, electronic mail and some social network media and in the comfort of their homes or offices. Apart from that, the acquisitions librarian can also make this information available by displaying it on the library blog(Pace, 2009:646).
Automated statistics 'on tap 'always available	Automated statistics on tap or auto stats tap in short is a feature that helps automate statistics collection and provides intelligence surrounding statistics management(Pace, 2009:645).
Client oriented services	The most important characteristic of the 21st century library is that it is client-focussed instead oflibrary or library collection focussed. Effective librarians of the 21st century, therefore, need to have extensive computer expertise to enable them to deliver client oriented services. If they do not become experts in the new technologies, the library becomes dependent on what it feels is right for the users and not on what it knows the users need(Pietersen, 2015:3).

Characteristic	Description / definition / explanation
Cloud-based storage	Cloud computing provides an alternative for institutions to manage their databases or software without providing their own information technology infrastructure for storage. There is no need for local servers or local backups and local upgrades as information is storedon the cloud where one service provider can host the hardware and perform the necessary services for several libraries. A cloud platform is intended for elastic scalability and reduces costs by providing guaranteed data storage resources to complete jobs in real time (Breeding, 2012a).
Cloud computing	Just as is the case for other professions, cloud computing is said to help libraries shift from owning and operating local servers to web-based services (Webber& Peters, 2010:4). It provides technical infrastructure and services to those who do not have their own infrastructure or do not have the relevant IT skills.
Data and workflows into cloud infrastructure	Workflow into cloud infrastructure is said to be the most important function that has been incorporated into library systems to date. Workflow is considered an essential technique in the implementation of automation, and dynamic decision-making processes through contextualisation and analysis of real-time data. Due to the capability to build flexible and complicated applications, each user application service is expressedinto a central, shared repository (Breeding, 2012a).

Characteristic	Description / definition / explanation
Digital and virtual library services	Libraries are not necessarily physical spaces any more. That is, they are not confined to a particular location. This is because they allow users to access information at a time and place convenient to the user. The idea of adopting library automation is essential to take advantage of the technologies and make the libraries visible worldwide. Such libraries provide patrons with digital and virtual library services. A virtual library that is also called a library without walls can be defined as a system pertaining to the organised collection of multimedia data globally available through networked computers. It is important to note that only library resources that are available in electronic format, such as online databases, e-Journals, and e-Books, can be accessed through a digital or virtual library. These services give library users access to material without being restricted by space and time (Breeding, 2012a).
Direct access to research data	Direct access to research data means the ability to obtain data by going directly to where it is located physically (from the research participants) rather than by having to look for the data sequentially at one physical location after another. The participants' access to raw data can be a helpful mechanism to increase transparency in any study (National Research Council, 2005).
Embedded multi-media in documents	When designing a web page, an embedded file refers to any type of multimedia file that you might insert, or embed into the webpage. This includes files like graphics and sound files (Jang et al, 2018)

Characteristic	Description / definition / explanation
Federated Identity Management	"Federated Identity Management (FIM) is an arrangement that can be made among multiple enterprises thatallow subscribers to use the same identification data to obtain access to the networks of all enterprises in the group. The use of such a system is sometimes called identity federation" (FIM, 2018).
Fully integrated library back-office functions	Because of the repetitive nature of many of their tasks (back office functions), librariesmay benefit from the collaborative effort of all those responsible for the same tasks. Integration refers to the coordination between the library system and back-office functions. Back office functions include processes used by employees that help keep the library operating. Cataloguing and acquisitions are examples of back office systems. An example of integration is the fully integrated online systems that have become available (Webber &Peters, 2010).
Harvesting of content	The process by means ofwhich the internet data (public access content) are monitored, collected, organised and delivered (Cerami, 2017).

Characteristic	Description / definition / explanation
Integrated/single search across several/all platforms	This is a platform that has an open API set, which allows for integration with various platforms. Thisgives the end user the ability to search across multiple platforms through one intelligent interface (Online Computer Library Centre (OCLC), 2018).
Integration with mobile technologies	Mobile technologies offer libraries a new world of opportunities to engage patrons. Mobile integration involves the integration into an enterprise infrastructure of mobile devices such as cell phones, “crack” berries, pagers and other mobile devices. (Jang et al,2018).
Online public access catalogue (OPAC)	The Online Public Access Catalogue (OPAC) is a service that characterises the modern library system. The OPAC serves as an index to the collection available in the library. It is characterised by easy access for clients, not only to the host library’s holdings, but also to the holdings of several other libraries and not only to traditional documents but also to multi-media embedded in very smart documents. Users can access the information available in the catalogue anywhere, as long as there is internet availability. They can also use a variety of devices (computers, tablets as well as other mobile devices) to access the collection and they are able to embed an access point to the catalogue in their own work environments – such as virtual research environments(Webber & Peters 2010: 9-12).

Characteristic	Description / definition / explanation
Personalisation	A number of emerging technologies, including mobile phones and services, online shopping and portals, and games "are designed to provide users with control overthe interface and functionality. Understanding why users make use of personalisation can "help design personalisation features so that they promote the acceptance and adoption of information and communication technology". Personalisation, therefore, is "a pervasive phenomenon in all human activities, encompassing the decoration, re-configuration, modification, customisation and tailoring of human-made objects such as cars, jewellery, clothes, houses, workplaces, tools and software. People have created whole cultures of personalisation such as wine tasting and fashion where choices express the individual tastes and personalities of its members" (Chun-Cheng & Ming-Chuen, 2014).There is no reason to believe that the use of library interfaces should not also experience the same requirement for personalisation.
Personalised alerting services	See automated current awareness services.
Personalised products	"Products can be personalised in a variety of ways and using a number of different techniques depending on the complexity of the design" (Plastico, 2018).

Characteristic	Description / definition / explanation
Real-time online communication	Real-time online communication is virtually any online communication that provides a real-time or livetransmission of text messages from sender to receiver". A variety of software programs are available to enable real-time chats between individuals using internet services. (Breeding, 2017).
Reference services are always accessible	Reference services involve the activity of a reference librarian who can give individualised or personalised assistance to library users in order to satisfy their information needs. The 21st century library offers this service in electronic format, 24/7 - in which case, the library users do not have to be in the library physically to interact with the reference librarian. The librarian and the library user can communicate virtually or electronically through emails, social network sites, text messages, instant messages and chats. In addition, the library provides access to a network of librarians, located in different time zones, so that there is always someone who can assist with queries (Farkas, 2018).
Resource sharing	In the library world, resource sharing means that you are collaborating with one or more libraries to maximise access to a larger array of resources by sharing the collections of the cooperating libraries or pooling funding to purchase shared digital resources, for example, interlibrary loans. (OCLC , 2018)

Characteristic	Description / definition / explanation
Rich, full text online	The rich, full text online function allows users to use a variety of options to format the text that they enter online. For example, one can apply a different font or character style to the text online or even insert a table (Breeding, 2018).
Seamless integration into virtual work environments	"Gone are the days when the workplace was merely a physical space employees occupied during regular office hours. Today's always connected instant access environment has blurred the lines between the physical office and the place where work actually happens" (Dorman, 2004). This functionality again points to library services being available at all times and being accessible from any location.
Self-service	A self-service library entails a service where patrons are able to carry out library services without the help of library staff. Libraries are encouraged to use software and devices that grant customers self-service use of the library outside normal working hours (Kulbyte, 2018).
Shared infrastructure	Libraries share the infrastructure (and services) necessary to provide their patrons with products and services. In this way, they save money, staff time and are able tooffer new functionalities. This,in turn, provides them with opportunities to take on new projects. (OCLC, 2018).

Characteristic	Description / definition / explanation
Shared OPAC	"With the arrival of the internet, most libraries made their OPAC accessible directly from a server to users all over the world. It is now also possible for libraries to share the same OPAC" (Farkas 2014).
Software-as-a-service (SaaS) models	An arrangement made with integrated library system "vendors where the vendor hosts the library's data on their equipment to save the library hardware costs. The library uses their database through the internet" and is no longer responsible for software updates or maintenance themselves. The vendor provides the technical services, and the library can concentrate on the content that is created or managed by the library (Webber& Peters, 2010:6).
Universal Catalogue	A universal or union catalogue is a list of the holdings of all the libraries in a particular library system. In addition, a listing of all or a portion of the collections of a group of independent libraries, indicating by name and location symbol, which libraries own at least one copy of each item. When the main purpose of a union catalogue is to indicate location, the bibliographic description provided in each entry may be reduced to a minimum, but when it also serves other purposes, the descriptions are more complete. The arrangement of a union catalogueis normally alphabetical by author or title. An example of a union catalogue is available at OCLC (2018).

Characteristic	Description / definition / explanation
Web services such as a recommender service	Web services are loosely coupled software systems designed to support interoperable machine to machine interaction over a network. For example, the web service uses various characteristics of a sample work, such as classification numbers, subject headings and genre terms to provide a list of related works found in Worldcat. The list recommendations may include books, e-Books, audio books, music and video (OCLC 2018).
Web-based interfaces for staff as well as clients	In computing, an interface is a shared boundary across which two or more separate components of computer system exchange information. The exchange can be between software, computer hardware, peripheral devices, humans and combinations of these (Breeding, 2018).
Workflow automation	"Workflow is the definition, execution and automation of business processes where tasks, information or documents are passed from one participant to another for action according to a set of procedural rules." (OCLC, 2018).

In conclusion, it should be noted that modern libraries derive certain benefits as a result of ICT usage. Idiegbeyan-use, Ilo & Isiakpona (2015:26) maintain that these libraries use computers in the acquisition, cataloguing, circulation, serials control and the provision of access to the online catalogue. Idiegbeyan-use, Ilo & Isiakpona (2015:26) further stress that ICT improves the efficiency of internal operations and access to resources in that particular library. It also provides access to resources outside the particular library. The 21st century client requires services that are provided to users around the clock (24 hours per day/7 days per week/365 daysthroughout the year). With the above as the context for modern services, it is necessary to investigate the challenges experienced by libraries wishing to provide relevant services. Most of these challenges relate to ICTs and are discussed in the next section.

2.5 Challenges experienced in libraries based in developing countries

With regard to striving to provide relevant services to the users, libraries in developing countries continue to experience challenges. Some of these challenges are caused by ICT. Due to these challenges, it is essential to note that to this era, the world of ICT-based libraries is still in its infancy in developing countries (Pace, 2009:641). There are a number of challenges associated with this situation. These are discussed below.

2.5.1 Lack of financial support

Idiegbeyan-use, Ilo and Isiakpona (2015:27) explain that the acquisition and implementation of a library system are capital intensive. Already in 2007, Islam (2007:8) identified an acute problem with the funding of public university libraries – more so than what is the case for private university libraries and special libraries. Nkiko, Ilo & Osayande (2008:25) also observe that most government institutions are underfunded, resulting in an inability to exploit ICT fully. It appears that administrators, policymakers and government executives are not fully aware of the importance of ICT. It also appears that library administrators too, have failed to make it clear that libraries without appropriate technologies are irrelevant. Once this is understood, parent institutions are requested to ensure that sufficient funds are made available for the implementation of systems and the development of the associated skills that will ensure the implementation of a successful ICT strategy which will eventually make 21st century library services a reality.

2.5.2 Lack of skilled human resources

In order to make effective use of all ICT-related library functions, there are some basic skills that must be acquired. Nok (2006:5) affirms that, at that time most librarians were trained in the delivery of traditional library functions and services and that they need to be retrained when these functions and services are enhanced by ICTs. In return, librarians should conduct regular training and orientation programmes. This will not only provide them with the platforms to stay familiarwithnew trends and tools themselves but also help library users to acquire the skills to perform their activities better.

2.5.3 ICT-phobia

It appears that a perceived lack of skills can result in ICT phobia in individuals. This is most probably because a number of library professionals, as reported by Idiegbeyan-use, Ilo &Isiakpona (2015:27) are conversant with manual libraries and find it difficult to adapt to new technologies. This situation leads to ICT-phobia because the library does not offer ICT based training to support the required services as reported by Idiegbeyan-ose, Ilo&Isiakpona, (2015:28). Because library users do not benefit from ICT-based services, both librarians and users will continue to display a conservative attitude toward the use of ICT, Isiakpona & Adebayo (2011:56). In a study of emerging challenges to effective library automation and an e-library, Gbadamosi (2012:3) established that some library staff, working at the colleges of education that he investigated, have the same phobia. As a result, Gbadamosi (2012:3) notes that they also lack the necessary skills to provide effective services.

2.5.4 Techno-stress

Techno-stress is defined by Idiegbeyan-ose, Ilo & Isiakpona (2015:28) as technology-related stress such as headaches “as a result of spending long hours in front” of the computer monitor, backache due to poor workstation furniture, and watery eyes as a result of the continuous focus on the computer monitor. Weil and Rosen (1997), as quoted in Idiegbeyan-ose, Ilo & Isiakpona (2015:28) assert that techno-stress involves any negative impact on attitudes, thoughts, behaviours, or body physiology which is caused directly or indirectly by technology.

Isiakpona (2011:57) became aware that stress resulting from interaction with technologies is mainly caused by inadequate training. It is, therefore, important that both library professionals

and library users become flexible and have open minds regarding the use of new and emerging technologies. That, together with appropriate training, will help to avoid techno-stress.

2.5.5 Incessant power outage

It has been emphasisedin this study that the 21st century library is characterisedby the use of computer and information and communication technologies – all requiring reliable electrical power. Nok (2006:6) and Idiegbeyan-ose., Ilo&Isiakpona, (2015:27) and othersaver that one of the major challenges in African countries remains power outages. Accordingly, the failure to maintain a regular power supply has serious implications for the 21st century libraries. This is due to the fact thatemerging technologies used in modern librariescannot function without access to electricity. Nok (2006:21) professes that an irregular power supply also constitutes a serious bottleneck forlibraryautomation.

When it is possible to address the challenges listed above, the library can consider automation, and a first step is to identify a suitable system to implement. Many options are available to the library. Some of the possible library systems are discussed in the next section.

2.6 The latest wave of automation systems for libraries

In an automated environment, one of the latest developments is a library system called library resource management system that is defined by Breeding (2015a: 7) as any major product that a library uses to administer some of its collection. It currently includes library service platforms, integrated library systems, electronic resource management systems and digital collections management systems. The ideal is, however, to integrate the variety of systems into a single system that can be managed easily by the library. As libraries continue to grow to meet the demands of the new millennium, library systems are also maturing. Breeding (2015b:64) confirms that libraries need to make rapid advances in library automation urgently. In the past, when a library started automating, only a few of the functions were automated. Over time, more and more functions of the libraries were automated,and more and more library applications were made available, and libraries now have a large variety of automation systems from which to choose.

2.6.1 Integrated Library System (ILS)

An ILS is also known as a library management system (LMS).The ILS is defined by Adamson, et al (2008:2) as "an enterprise resource planning system for a library. It is used to track items owned, orders made, bills paid" and stock that has been borrowed. Breeding (2015a:5) defines the ILS as a type of library resource management system with a set of characteristics that differ substantially from the long-standing genre of the integrated library system. Breeding's (2015b:60) study on library services platforms, reports that Library Services Platforms (LSPs) see next section 2.6.2 have not yet replaced ILS. ILSs continue to flourish as can be seen by the ongoing use of existing installations and in new sales (Breeding, 2015a:5).

The ILS, like any other library system, provides computer automation for all functions of the library operations. These products are organised into modules that address specific functions of the library. These modules include acquisition, cataloguing, circulation, serials control and an OPAC. Breeding (2008:2) notes that "each of these modules offersa very detailed suite of features to accommodate the complex and nuanced routines involved in the library work."

The selection, procurement and implementation of library automation software have always been a challenging process for libraries. It is, therefore, important that libraries follow certain procurement rules, as well as the processes required by each library when procuring a library system. There are many ILS on the market. Each is designed for a specific type of library. Table 2.2 discusses the top five 2017ILS relevant to libraries in Lesotho.

Table 2B: Examples of integrated library systems

Vendor	System	Brief description
Library World Solutions	Library world	"Library World is an online, cloud based library automation service suitable for any library of books, movies, games and songs" (Adamson, 2008:8; Best library software, 2017).

Vendor	System	Brief description
Open source	Koha library software	"Koha is a free, open source, fully featured and scalable library management application designed and developed by libraries, volunteers and experts to provide a complete library automation solution. According to KohaCon7 (2017), Koha is the world's first free and open source ILS.
Open source	Evergreen	Evergreen, like Koha, is also an open source enterprise class library automation system that helps libraries to manage, catalogue and circulate materials (Open source ILS, 2017: KohaCon17, 2017). It is noted, in KohaCon17 (2017), that Evergreen was initially developed by the Georgia Public Library Service for the Public Information Network for Electronic Services (PINES). PINES is a state-wide resource-sharing consortium with over 270 member libraries in the United States of America(USA).
Libwin Library Systems	Libwin	Libwin is a fully-featured, Microsoft Windows-based, library automation and management software system used in over 1400 schools, colleges, corporate and specialised libraries world-wide (Libwin Library Systems, 2013).
Mindex Systems	InmagicLibray Management	The Inmagic Genie ILS website states that it provides all the features to the underlying DB/Textworks and WebPublisher software to allow information centres to create features which include: cataloguing, circulation, management, acquisition, web OPAC and interlibrary loans (Mindex Systems, 2016).

A newer development is the availability of LSPs. The next section discusses them in more detail.

2.6.2 Library Services Platforms (LSPs)

The field of library automation is changing rapidly because of new technological innovations, as are the systems used in libraries for automation. The historical perspective of library automation indicates that for the last thirty years or more, libraries relied on ILS (Breeding, 2013:13). These systems, as stated by Iglesias (2010:13) in Breeding (2013:13), were designed when the libraries' collections were primarily in print or were physical items. The libraries of the new millennium hold collections that comprise of electronic or digital items. In these electronic- resource dominated times, it is possible to see that ILS are being replaced by LSPs

An LSP is a type of library resource management system with a set of characteristics that differ quite substantially from those of the ILS. It is observed by Breeding (2015a:6) that the LSP was introducedas a result of the considerable concern that the ILS could no longer satisfy the expectations of both librarians and library users. It should be notedthat there appears, on the surface, to be a thin line between LSP and ILS. However, as Breeding (2015a:6) explains, LSP were introduced to address the fundamental changes that libraries have experienced over the course of the last decade." LSP are specifically designed to engage more with electronic and digital content. They are also designed to replace the technical skills that were previously required for tasks that could now also be automated or managed from a remote location. It is possible for these systems to break free from the models of automation that are focussed on print material. They also break free from a model of ownership and allow the library to concentrate on access to information. Table 2C provides information regarding the top five LSP identified by Breeding (2015a).

Table 2C: Examples of library service platforms

Vendor	System	Brief description
OCLC	Worldshare Management Services (WMS)	"WMS is described as a fresh, totally new product that rethinks and recreates management software for libraries and offers a true cloud computing solution" (Breeding, 2015b:23, 2012:11; Lee, 2012: 11). It is stated in the future of library systems (2012:11) that all types and sizes of libraries from those with millions of titles, large circulations and users to those with fewer than 100 users could make use of WMS. "The product uses all the data available in WorldCat, the WorldCat knowledge base," theWorldshare vendor information centre, the WorldcatRegistry and other centralised data repositories. This is said to be a major advantage of libraries (Pace, 2009:645).
Ex Libris	Alma Management	Alma is also an entirely new, true cloud computing product. In a study in The future of library systems (2012:11), it is saidthat …the overall approach of ExLibris is to provide libraries with comprehensive, unified resource management. In doing this, their intent is to avoid the duplication of effort and data required in maintaining separate ILS, ERM, IR, discovery and link resolution products.
Kuali	Open Library Environment (OLE)	Lee (2012:9) and The future of library systems (2012:9) agree that OLE "is the only open source software solution being offered among the new LSP." Lee (2012:9) adds that OLE is the first system designed by

Vendor	System	Brief description
		and for academic and research libraries for managing and delivering all intellectual information.
Serials solutions	Intota	In the technical report of the Westchester Academic Library Directors Organisations (WALDO) ILS, working group Lee (2012:6), explain that Intota is a brand-new library service that is being built by serials solutions from the ground up. The technical report states that it is a single, centrally provisioned Library Management Service (LMS) that supports the entire lifecycle of the library's collection including selection, acquisition, resource management, cataloguing, discovery and fulfilment regardless of resource type.
Innovative interfaces	Sierra	Innovative Interface's next-generation library management system called Sierrais built as a state-of-the-art library computer platform that can be modularised to suit the customer's needs (Lee, 2012:7;Yang, 2013). Sierra's biggest strength, as explained by Lee (2012:7), is that it excels with its Electronic Resource Management module, which works in conjunction with the Encore discovery tool to provide cost-per-view analysis of electronic resources.

LSP, as stated by Yang (2013:8), are not meant to replace ILSs. Each has its own place in the library world. Instead, one can say that anLSPcanprovide additional services that an ILS cannot perform because of the nature of the software.

In addition, although an ILS can provide some of the services, it is not as versatile and efficient as an LSP when the library wishes to provide services that require cloud storage or collaboration across several institutions. Breeding (2015a:i) concurs with this statement by mentioning that the genre of LSP help "libraries manage their architectures collection materials and automate many aspects of their operations by addressing a wider range of resources and taking advantage of current technology"when compared to the ILS that have previously dominated the library playing field.

2.7 Assisting libraries to provide 21st centuryservices successfully

The importance of achieving full automation before modern services can be considered, has been discussed. The importance of sufficient financial resources, as well as the availability of electricity, has also been mentioned in that regard. Authors such as Mutula (2012) have also done research that sought to assist other libraries with planning automation projects. Agyemang (2014:6) is also of the opinion that the Sub-Saharan African universities laggard status in library automation is attributed to factors such as adverse economic conditions, budgetary constraints, inefficient electricity infrastructure and the lack of ICT strategies/policies. The researcher also intends to provide information that will help libraries, especially in Lesotho, (in other words, in a developing country context) to leapfrog to the modern world.

The study has so far brought to light, with regard tothe libraries, which maybe new to automation, various issues related to what the library automation project plan should look like. It has also highlighted the library system options to consider when planning an automation project and the characteristics of the library services associated with the modern services. However, before a decision can be made regarding the sophistication of a system, it will be advisable to consider the following contributing factors: government financial support, technical support, project management skills, and strategic alignment with the business priorities and a number of other issues. Each of these is discussed below.

2.7.1 Government financial support

A survey conducted by Swee& Abdullah (2005:35) on the status of school library automation in Malaysian / Chinese secondary schools, indicates that one of the aspects known to contribute to the successful implementation of library automation is government support. Obaseki (2011:66) also notes that although librarians may recognise the importance of automation,

because of the lack of a sufficient budget, the project, may not be successful. As a result, governments can support institutions of higher learning by providing them with sufficient funding to allow for the automation of the institution's library. An alternative is for governments to source grant funding from developed countries and other funders, on behalf of the tertiary institutions. In that way, the money can be used to buy library software, train library staff and users as well as increase the internet bandwidth so that access to the internet can be reliable and fast.

This study has so far indicated that an automation project is not cheap **(**see section 2.5.1) and it is anticipated that any financial help from the government will be of great importance to the Lesotho libraries. This is perhaps where LELICO will be able to negotiate with the government on behalf of all the member libraries. In an interview, Blackson (2014) asserts that library automation has to be well fundedin order to meet the research and educational needs of any library.

2.7.2 Technical support

Another factor that contributes to the successful implementation of library automation, according to Swee& Abdullah (2005:39), is good technical support. In the same study on the status of school library automation in Malaysian /Chinese secondary schools Swee& Abdullah (2005:39) report that if a particular library decides to use a library system bought from a vendor, good technical support by the vendor plays a crucial role. Libraries that have received good technical support from their vendors gave "good technical support" as the main reason for choosing the system because they know that they always get an immediate response and feedback when problems arise. This means that the library seldom faces problems with the system and that is a good contributing factor to the successful implementation of automation projects. Good technical support also means the company alerts its clients to any new developments on the market. The big advantage that the LSPs have over the LMSs is that it requires considerably less technical support to manage an LSP.

2.7.3 Project management skills

Nok (in Jan & Sheikh 2011:3) observes that the success of automation in the university library depends largely on the ability of staff to facilitate and implement the process.Before any project is undertaken, the staff needs to have project management skills, if not, that particular project

will not see the light of the day. One important aspect that Lecomber (2017) notes with regard to project planning, is that there should be no cutting of corners, no matter what the reason. According to Lecomber (2017), cutting corners in project planning is a recipe for disaster. Besides cutting corners, Nok (in Jan & Sheikh, 2011:3) adds that the three most cited factors in project failure are:

a) Lack of stakeholder engagement.
b) Lack of communication.
c) Lack of clear roles, and responsibilities.

These factors, therefore, need to be considered carefullyin the planning and creation of any project.

2.7.4 Strategic alignment

The process of aligning the actions of an organisation's business divisions and staff members with the organisation's planned objectives is defined, in the Business dictionary (2017) as strategic alignment. The Business dictionary (2017) further states that for most businesses to achieve their strategic goals, they "will benefit from performing a comprehensive strategic alignment" benchmark to help ensure that its divisions and employees are working toward the company's stated goals jointly. This is confirmed by Mutula (2012: 263), who mentions that the successful implementation of the library automation project of the University of Botswana was attributed to a number of factors such as ensuring strategic management support andalignment of the library automation objectives with the goals of the university. Strategic alignment will enable library managers to collaborate because proper plans with realistic goals and objectives will be developed and followed. Good planning will require:

a) Extensive consultation with key stakeholders.
b) The alignment of library automation with the goal of the libraries to meet the vision and mission of the various institutions as well.

It may be concluded that from the above explanation it is learned that there are various factors that lead to the successful implementation of an automation project. From the discussions on which aspects are conducive to success in library automation, many authors such as Swee&

Abdullah (2005:39), Jan & Sheikh (2011:4), and Obaseki (2011:62) seem to agree on a number of these factors.

2.7.5 Other factors to consider

Besides the factors that have already been discussed, the following factors can also be instrumental in the successful implementation of the automation project. These are the technology industry, capacity building of the librarians and an uninterrupted power supply (Ashikuzzaman, 2016). The technology industry in Lesotho continues to see uneven growth. According to Breeding (2014:2), this means countries that lie within a separate geographic region have more limited opportunities in contrast with those with international reach and diverse offerings. Lesotho libraries fall within a region of countries that are in disadvantaged geographical areas. For example, in the mountain kingdom, bandwidth is still a challenge, bringing with it the concomitant problem with regard to gaining access to the Internet.

For an automated library to function properly there must be an uninterrupted power supply. Regular power generation remains a problem in Lesotho. Nok (2006) explains that frequent power outrages constitute a serious bottleneck with regard to automation. In addition, the need for staff training and education cannot be left ignored. The success of library automation depends largely on the capacity of librarians to facilitate and implement the process. As a result, proper and frequent in-training is highly recommended.

2.8 LELICO as the primary vehicle to drive library automation

Taole (2008:15) indicates that one definition of a library consortium is that it consists of a group of libraries that have come together to achieve the goal of automating their services. These services include system support, consultation and administrative support for cataloguing, interlibrary lending, retrospective conversion and co-operative purchasing (Taole, 2008:15). According to this definition, it is clear that, in order for the consortium to achieve its mandate, certain success factors have to be considered or met. LELICO has automation as a goal, but as was seen in Table 2A in section 1.2.1, the status of automation in 2008 showed that extremely few libraries had been automated at that time. It is of interest to this study to establish whether this is still the case. However, before dwelling on this point, it is also important to determine how LELICO operates or how it is expected to function. Given the situation, LELICO, like any

other consortium, was influenced by certain factors that determine its success. These factors include the following:

2.8.1 Communication

Good communication is needed for managing the activities of the consortium properly. Good communication, according to Obinyan (2013:7), is an essential tool in achieving productivity in organisations or cooperatives. Again, poor communication in cooperative endeavours may lead to members losing confidence and doubting the capabilities of their cooperative endeavour. As a result, LELICO too acknowledges that to achieve its mandate; there should be good communication at all levels with its members LELICO (2001) and the researcher wanted to establish whether LELICO libraries perceived the communication from the consortium management to be effective.

2.8.2 Technological infrastructure

Technology is not only necessary in organisations but also across consortia – if libraries are to collaborate. LELICO members need a good technological infrastructure such as reliable internet access, increased bandwidth, as well as staff conversant with these technologies. Regarding the issue of the technological infrastructure, Obinyan (2013:8) points out that a good technological infrastructure ensures fast and reliable communication within and between member organisations regardless of their location. In turn, this will help the members to provide the best possible services at their respective libraries. Taole, (2008:43) suggests that, for the sustainability of the consortium, the consortium management structure would need to adopt the emerging technologies in order to guide member library services. The researcher intended to establish whether the technological infrastructure was such that new services could be introduced and advanced technologies could be maintained.

2.8.3 Institutional support

LELICO member libraries are libraries linked to a variety of parent institutions (see Table 2A). In order for the members to achieve common goals set by the consortia, strong support is needed from the respective parent institutions. These parent institutions need to be constantly made aware that the more they support the consortium, the more the libraries benefit and the

more the institutions benefit. The researcher intended to establish whether there was adequate support from the parent body that would allow for the development of the library services.

2.8.4 Funding

Funding is again an important aspect needed to ensure successful library cooperation. Taole (2008:44) recommends that members of the consortium should not only rely on donations for funding. She suggests that members should raise their own money through or by undertaking fundraising activities themselves. The researcher has not been able to find evidence of any institution that has ever implemented this recommendation. However, there is hope of such information being obtained through benchmarking with South African academic libraries. The researcher intends to establish what is the source of their income, if that income enables them to provide services required by modern users. If not, the researcher further intends to find out how the generate money to help them relevant to the user's needs.

If the success factors mentioned above are lacking, there is a clear indication that LELICO faces serious problems and will perhaps not be able to serve as a vehicle to achieve the automation of all libraries. For example, if LELICO depends solely on government funding for its existence, it is not a healthy situation because when the government faces a political crisis, it becomes difficult to be assured of continued government financial support.

2.9 The current state of library automation in Lesotho

In the previous sections of this chapter, the researcher discussed thechoices that Lesotho libraries might have. There appears to be an opportunity either to learn from the more developed countries, or to remain in a state of backwardness with some of the other libraries in Africa. Mutula (2012:292) established that, at the time of his study, African countries lagged behind as far as automation was concerned. This, he thought, was due to factors such as a lack of resources and failed automation projects. No evidence could be found in the literature of any research regarding library automation in Lesotho after that conducted by Taole (2008). She established that out of the 12 LELICO member libraries, only four were computerised in 2008 (Taole, 2008:123).As Taole (2008:95) points out, some LELICO libraries encountered problems in their efforts to automate. It is now almost ten years after Taole's research, and through personal observations and information sharing with colleagues, it appears to this

researcher that many libraries in Lesotho have still not yet automated their services. This study intends to establish which challenges are still applicable in the Lesotho context.

The rapid rate at which development, in terms ofautomation, is taking place, might motivate those libraries that have not yet considered automation to start considering it. The current state at such libraries will result in the clients, of such libraries, being denied the services relevant to modern users. Importantly, Obaseki (2011: 65) notes that the librarians of such libraries are not exposed to training in ICT. They are, therefore, unable to provide ITC-based services because they lack knowledge of how libraries can use ICTs to improve their services. This may also be true in Lesotho and needs to be confirmed.

An important development that has taken place since Taole's study is the advent of cloud computing for use with library systems. Many libraries no longer physically store their information in the libraries or even on institutionally-owned and maintained servers. Instead, the records are stored in the cloud.

Based on the information provided above, as well as on personal experience, the Kingdom of Lesotho is indeed a latecomer in the development of automatedlibraries. As a result, our clients do not receive the services provided as standard functions in other libraries.

2.10 Conclusion

This literature review revealed that automation couldbe defined as a process or a state where libraries use ICTs to execute their tasks. The literature also revealed that the automation of library services is an extensive project that requires proper planning and active implementation. Studies further revealed that in order to make automation projects a success, there are a number of definite steps that need to be followed.The importance of sufficient financial resources as well as the lack of both electricity and ICT strategies /policieshavebeen named as factors that have attributed to the laggard status in library automation by Sub-Saharan African libraries.

It appears that the Lesotho libraries are still lagging behindin terms of automation and, as a result, there is an opportunity to make use of new generation library systems to leapfrog developments and provide Lesotho library patrons with the services expected in our modern society. The characteristics of 21st century library services were also discussed in order to set the context and to serve as a guideline for the direction in which Lesotho libraries can move.

In the last instance, this chapter also considered the role LELICO can play in supporting member libraries in their endeavours to automate as a prerequisite for delivering the services required of the 21st century libraries.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

The chapter gives an account of the methodology as well as the tools and methods which were employed to answer both the objectives and research questions. The chapter further discusses the sampling method used for the study in detail, that is, the sample population that was interviewed as well as the technique used to select the sample. It also discusses the overall data collection and recording tools and procedures that are all linked to the research methodology. In closing, the chapter also provides details regarding the data analysis steps as well as the ethical issues to consider.

3.2 Definition of research methodology

Research is defined by Bordens & Abbott (2011:3) as the principal method for acquiring knowledge and uncovering causes of behaviour. Another definition of research, as stated by Saline (2009:2), is that it is a process through which new knowledge is discovered. Moreover, Creswell (2013:8) defines research as a cyclical process of steps that typically begins with identifying a research problem or issue of the study. In Creswell (2013:8) view, it involves reviewing the literature and specifying a purpose for the study. It also means collecting and analysing data, and formulating an interpretation of the information. This process as further elaborated upon by Creswell (2013:8), culminates in a report that is evaluated and disseminated to audiences and used in the educational community.

Different scholars tend to define and explain certain concepts differently. In the case of research, Bordens& Abbott's (2011:3) and Saline's (2009) definitions of research focus on the acquisition of knowledge as a benefit of research, although it is part of the definition. This definition encapsulates the purpose of doing research. On the other hand, Creswell (2013:8) sees research as a process that is in line with the second part of Borden & Abbott (2011:3) definition. In turn, Creswell (2013:8) definition of research as a process is similar to that of Williams (2007:65). According to Williams (2007:65), research is the process of collecting, analysing and interpreting data in order to understand a phenomenon. Williams (2007:65), like Creswell (2013:8), also maintains that research is a process. This research will, to a largeextent, aligns itself with Borden & Abbot's (2011:3) definition. The reason is that the purpose of this research is to design a strategy that will help LELICO member libraries to achieve effective

automation. The effective automation will in return be used to deliver modern services. This is an attempt to acquire knowledge and uncover how much work will need to be done before the libraries can engage in an automation project, which will hopefully serve as a prerequisite in provisition of modern services. Because this section is on the research methodology, it is important to unpack the meaning of research methodology as a concept.

Mukherji & Albon (2015:7) define research methodology as the process that guides what to investigate, how to investigate it, what to measure or assess and how to do so. This definition outlines the many aspects of methodology including what it entails. Another definition comes from Leedy & Ormrod (2015:2) who define research methodology as the systematic process of working with or using data. According to this definition, methodology entails collecting, analysing and interpreting information in order to increase our understanding of the phenomenon in which we are interestedor are investigating. Nolan, Macfarlane & Cartmel, (2013:20) define methodology as the structured process of conducting research. This definition justifies and rationalises how the study should be conducted.

Creswell (2014:5), Dawson (2007:15) and Ngulube (2015b:127), on the other hand, see methodology as central to the research process, because it is the lens through which a researcher looks when making decisions on acquiring knowledge about social phenomena and getting answers to the research questions. In other words, it states the type of research design and research method that may be used to obtain knowledge about a phenomenon. All these authors have the same point of view with regard to methodology; they state how research should be conductedas well as how data should be managed. Each of the definitions has an aspect of what methodology entails, which makes all the definitions provided relevant to the study. Nonetheless, Creswell (2014:5) and Williams (2007:66) definitions concentrate on what should be done in order to get answers to the research questions.

3.3 Research approach

There are three approaches to research, namely: qualitative, quantitative and mixed methods. Mixed methods are, briefly, a combination of both the quantitative and qualitative approach. This methodology is discussed in more detail in section 3.4.3 below. Table 3A provides a brief summary of the key points to remember about each of the two dominant methodologies.

Table 3.A: Comparison of quantitative and qualitative research

Characteristics	Quantitative research	Qualitative research
Focus	Concise, objective, reductionist	Broad, subjective, holistic
Theoretical focus	Tests theory, seeks to control phenomena	Develops theory, seeks to understand phenomena.
Researcher participation	"Does not participate in events under investigation, most likely to collect data from a real distance."	Involves sustained interaction with the participant in their own language and in their natural setting.
Research design	Standardised and replicable	Flexible and unique
Methods of analysis	Statistical analysis, focus on numbers	Individual interpretation, focus on words
Findings	Generalisation, accept or reject theoretical propositions	Uniqueness, dynamic understanding of phenomena, and new theory.

Source: Rensburg (2010:88)

Table 3A above demonstrates that quantitative and qualitative research differs. Kumar (2011:12) records that each approach has "advantages and disadvantages, and neither is superior to the other" in all respects. It is for this very reason that some researchers choose to combine the two so that they complement each other. However, Nolan, Macfarlane & Cartmel, (2013:22) is of the opinion that although the two approaches differ, it is important not to demonise either approach as both can contribute to research in the field. Each of the three researchmethodsis discussed in more detail.

3.3.1 Quantitative research

According to Neuman (2012:92), in the natural sciences as well as in the social sciences, quantitative research is the systematic empirical investigation of observable phenomena via statistical, mathematical or computational techniques. Leedy & Ormrod (2015:95) add to the definition of quantitative research that is used to answer questions about relationships among measured variables with the purpose of explaining, predicting and controlling phenomena. Creswell (2014:4) is of the same opinion as Leedy & Ormrod (2015:95) and Neuman (2012:92) that quantitative research is an approach for testing objective theories. Furthermore, Creswell (2014:4) explains that these variables, in turn, can be measured, typically on instruments, so that numbered data can be analysed using statistical procedures. Quantitative research poses questions regarding who, what, when, where, how much, how many and how (DME for Peace, 2017).

3.3.1.1 Characteristics of quantitative research

Various authors define research in their own respective ways. Nonetheless, there seems to be harmony in the way Creswell (2014:18), Mukherji & Albon (2015:14-15), and Rahman (2016:106) define the characteristics of quantitative research. Their outline is as follows:

a) A quantitative approach employs surveys and experiments as strategies of inquiry.
b) When using a quantitative approach, the common aims of the researchare to explain and predict.
c) “The researcher is interested in understanding general laws that apply” (Creswell, 2014:18) to the whole population rather than particular groups.
d) There is also an attempt to study behaviour under controlled conditions with an attempt to isolate the effect of single variables.
e) Data are basedon precise measurements using structured and validated data collection instruments.
f) Data analysis employs statistical procedures (Creswell, 2014:18;Mukherji&Albon, 2015:14-15;Rahman, 2016:106).

3.3.1.2 Advantages of quantitative research

The summarised strengths of quantitative research, as identified by Rahman (2016:106) and the University of London and SOAS University of London (2016:2) are as follows:

a) Quantitative research allows the researcher to measureand analyse data.
b) Large sample sizes often make the conclusions from quantitative research generalisable.
c) The relationship between independent and dependent variableisstudiedin detail, which is advantageous because the researcher is more objective about the findings of the research.
d) Statistical methods mean that the analysis is often considered reliable.
e) It can be used to test hypotheses in experiments because of the ability to measure data using statistics.
f) It can provide a clear, quantitative measure to be used for grants and proposals.

3.3.1.3 Disadvantages of quantitative research

The DME for Peace (2017) identifies the following disadvantages of quantitative research:

a) The context of the study does not always shed light on the full complexity of human experience or perceptions.
b) It does not study things in a natural setting or discuss the meaning things have for different people as qualitative research does.
c) In some cases, a large sample of the population must be studied: the larger the sample of people researched, the more statistically accurate the results will be.The DME for Peace (2017) as such, the timeline, complexity, and cost of the research will be increased.
d) Results need to be calculated using Excel, Access or data analysis software (such as SPSS), which may not always be accessible to a country.

Nolan (2013:22) states that both qualitative and quantitative approaches have value and are said to have truth in them, a quantitative approach is seen by the same author, as grounded in statistical probability, which lends validity and persuasiveness to the findings. As a result, there

are many other truths for which quantitative methods cannot account. Therefore, it is important to remember that according to Nolan (2013:22), a quantitative approach is just one (and not the only) tool in the research toolbox. Accordingly, this research will also use a qualitative research approach.

3.3.2 Qualitative research

This section introduces qualitative research and what this type of research entails. William (2007:67) explains that qualitative research occurs in a natural setting and enables the researcher to develop a level of detail because of his/her involvement in the actual experiences. Williams (2007:67) also defines qualitative research as an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. This opinion is echoedby Creswell (2014:4).Van Rensburg (2010:84), on the other hand, states that a qualitative approach is an approach in which the uniqueness and the meaningfulness of the human situation and behaviour are acknowledged. Another scholar who has done some work on qualitative research is Neuman (2012:92) who defines qualitative research as the approach used to uncover trends in thoughts and opinions and is used to dive deeper into the problem.

Moreover, Nolan (2013:89) propounds the benefits of the qualitative study. He expresses the strength of qualitative research as its ability to focus on the critical and determining factors of the human element in the definition of truth and knowledge. Corbin (2015) is yet another scholar whose view cannot be disregarded. He defines qualitative research as a form of research in which the researcher collects and interprets data, making the researcher as much a part of the research process as the participant and the data they provide (Corbin, 2015:4).

3.3.2.1 Characteristics of qualitative research

The characteristics of qualitative research, as stated by Mukherji & Albon (2015:30-31), Creswell (2014:18), Leedy &d Ormrod (2015:95-97) and Rahman (2016:103-104) are:

a) Qualitative research focuses on the quality of things, that is:
    - What is their nature?
    - What are they like?
    - How can they be described?

b) The focus on a qualitative approach is on gaining detailed information, often about a small population as opposed to being able to make generalisations about large numbers of people or phenomena (The torchlight metaphor).
c) There is usually a focus on words as opposed to numbers.
d) Arguably, there is more concern for the people whose experiences the researcher is attempting to represent than is present in a quantitative research design.
e) "Qualitative researchers seek a better understanding of complex situations (Creswell, 2014:18).
f) Qualitative researchers typically gather multiple forms of data such as interviews, observations, documents, and audio-visual information rather than rely on a single data source.

Finally, and importantly, the research process is sometimes seen to be as important as its outcomes.

3.3.2.2 Advantages of qualitative research

De Vos (2015:275) and Rahman (2016:104) note that there are some benefits of using qualitative research:

a) It produces a detailed description of participants' feelings, opinions and experiences and allows for the interpretation of the meaning of their actions.
b) Has the ability to study different people's voices, meanings and events as it is regarded as a study of individual cases or events.
c) Is appropriate for situations in which a detailed understanding is required.
d) Allows for data collection that is subjective and detailed.

3.3.2.3 Disadvantages of a qualitative research

Given the above advantages, De Vos (2015:275) and Rahman (2016:105) also expound the disadvantages of qualitative research, as it,

a) Sometimes leaves out contextual sensitivities and focuses more on meanings and experiences.
b) Is frequently used by stakeholders and may therefore not have as much credibility with policymakers.

c) Is not always generalisable due to small sample sizes.

3.3.3 Mixed methods research

Mixed method research incorporates elements of both qualitative and quantitative approaches, (Creswell, 2014:3). It enables the researcher to get the best of both approaches as both numerical and text-based data are collected and analysed.

According to Creswell (20014:3), De Vos (2015:360); Nkuebe (2016:30), and Punch (2005:240), the incorporation of both quantitative and qualitative research methods capitalises on the strengths of both methods. The combination of the strengths of both methods provides a better understanding of a phenomenon than when using one method alone. In other words, the strengths of one approach make up for the weaknesses of the other (Ngulube, 2015:127; Babbie, 2016:121).

3.3.4 Research approach selected

After careful consideration of the possible research approaches, it was decided that the most appropriate research method for this research was qualitative research. The reasons why this is the most appropriate method are the following:

a) "From the definitions and characteristics provided above it is clear that in qualitative research there is an emphasis on the research being undertaken in a natural setting(De Vos, 2015:360). This characteristic is relevant to this study as the researcher planned to conduct interviews at the participants' respective workplaces.
b) This situation will be conducive to the interviewees so that they can easily provide in-depth information - which is another characteristic of a qualitative study.
c) Lastly, a qualitative approach was chosen for the study because it is an approach which acknowledges the stories of individuals. This characteristic (stories from individuals) allows the respondents (in this case, the LELICO members) to express their challenges. As a result,this made it easier for the researcher to design a strategy that showed how full and effective automation can be achieved by all Lesotho library consortium members. It is anticipated that automation will enable them to use the library systems to deliver 21st century library services.

So far, this chapter has defined the term "research" and has elucidated the various research approaches that can be used. It also discussed the approach adopted by this study and why that particular approach was chosen. The next section looks at the research method or design the researcher used to collect, analyse and interpret the relevant data. As Mukherji & Albon (2010:88) suggest, it is critical for a researcher to know what methodologies and methods are available to them so that they can design their project to answer their research questions.

3.4 Research design

A research design is described by Maree (2007:70) as a plan or strategy which "moves from the underlying philosophical assumptions to specifying the selection of respondents, the data gathering techniques to be used and the data analysis to be done."Leedy & Ormrod (2015:70) point out that the choice of a research design is based on the researcher's assumptions.The choice of a research design also pertains to research skills and research practices, and it influences the way in which the researcher collects data. Furthermore, Tayie (2005:50) points out that there is currently a wide range of designs from which a researcher may select. The researcher may select a design that complements his philosophical assumptions, or that is the most appropriate for collecting information to answer the kind of questions identified. The qualitative research approach is linked to the following research designs: Case studies, ethnography, phenomenological studies, grounded theory studies, and content analysis (Wolcot, 2009; Neuman, 2012; Creswell, 2013:11-12;Leedy&Ormrod, 2015; Mukherji &Albon,2015).Each of these is discussed briefly next.

3.4.1 Ethnography

Ethnography, also called field research or participant-observation research, is defined by Creswell (2013:90) and Neuman (2012:364) as a qualitative style in which a researcher directly observes and participates in small-scale social settings in the present time and in the researcher's home culture. The purpose is to better understand the culture of the participants."

Denzin & Lincoln (2013:211), when explaining how ethnography is conducted, mention that the individual researcher talks directly with and observes the people being studied. They further note that through interaction with these people over months or years, the researcher learns about them.

Because of the nature of ethnography and its benefits to research, the researcher took advantage of her presence at the LCE library and her almost daily interaction with the LCE library staff and used ethnography in the case of the LCE. This approach enhanced the results of the findings in that the daily interaction aided in obtaining data that would otherwise be missed.

3.4.2 Phenomenological studies

Leedy & Ormrod (2015:139) indicate that "A phenomenological study is a study that attempts to understand people's perceptions, perspectives, and understandings of a particular situation". Creswell (2013:76) cautions that although phenomenologist's focus on describing what all participants have in common as they experience a phenomenon, the basic purpose of phenomenology is to reduce individual experiences with a phenomenon to a description of the universal essence.

This researcher tapped into this approach for some of the questions. This enabled an understanding of certainrespondents' perceptions and understanding of automation as a process and prerequisite for improved service delivery. The respondents relevant for this study were LELICO managers and systems administrators.

3.4.3 Grounded theory studies

Grounded theory as compared to other research designs is said to be the one least likely to begin from a particular framework (Leedy & Ormrod, 2015:140). Leedy & Ormrod (2015:140) are supported by Neuman (2012:146) with regard to grounded theory design. They emphasise that "the major purpose of a grounded theory approach is,to begin with the data and use them to develop a theory". It was not this researcher's intention to develop a new theory and, therefore, this design was not seen as relevant.

3.4.4 Content analysis

This research design is described by Wagner, Kawulich & Garner (2012:127-132) and Leedy & Ormrod (2015:142-143) as a detailed and systematic examination of the contents of a particular body of material for the purpose of identifying patterns, themes or biases. Out of these five designs described by this study, content design involves the greatest amount of planning at the start of the project. It was not the researcher's intention to analyse a large body of printed material and, therefore, this design was not seen as relevant.

3.4.5 Case study research design

As explained by Maree (2007:75), case study research is a systematic inquiry into an event or a set of related events which aims to describe and explain the phenomenon of interest. Maree (2007:75) further explains that researchers used the case study research method for many years across a variety of disciplines to answer "how" and "why" questions. Case studies offer a multi-perspective "analysis in which the researcher considers not just the voice and perspective of one or two participants in a situation, but also the views of other relevant groups" of actors and the interaction between them. Maree (2007:76) cautions that case studies have been criticised for depending on a single case and being incapable of providing general conclusions (generalisations). However, Maree (2007:76) emphasises that the purpose of a case study is to gain insight and understand the dynamics of specific situations. The researcher did the same with the case of LELICO. South African libraries were used as a benchmark and cannot really be used as a case study here.

In the same way that the researcher selects the type of research design, Mukherji& Albon (2015:107) echo that it is also left to the researcher to choose whatever methods are thought to be appropriate to collect the data that are required. According to Creswell (2014:187), Corbin & Strauss (2015:216), and Mukherji& Albon (2015:107), case studies will often make use of qualitative methods such as face-to-face semi-structured interviews. In conclusion, the data collection for a case study is extensive and draws from multiple sources, such as interviews, archival records or documents, participant observations and audio-visual materials (Willams, 2007:68).

3.4.6 Research design selected

After careful consideration of the possible research designs, it was decided that the most appropriate research design for this research is the case study research design. The reasons why a case study is considered the most appropriate design are the following:

Firstly, as explained by Maree (2007:75), a case study research design matches the intent of the research - to what extent are LELICO member libraries able to provide 21st century services. This situation is of concern for the researcher because of the fact thatautomation serves, as stated by the title of the study, as a prerequisite for the provision of the 21st century library services. Secondly, Maree (2007:76) emphasises that the purpose of a case study is to gain

insight and to understand the dynamics of specific situations. The researcher did exactly that by interviewing managers or the systems administrator of all LELICO libraries, to get the dynamics of automation at their respective work environment.

3.5 Data collection tools

According to Brinkmann and Kvale (2015:212), "Accurate data collection is essential to maintain the integrity of the research." The data collection instruments associated with case studies are the following: observations, interviews, and reviewing documents (Creswell,2014:190,Brinkmann&Kvale,2015:213;De Vos,2015: 120; Leedy & Ormond, 2015:271). Each of these is discussed in more detail below.

3.5.1. Observations

Observations have been characterised by Denzin & Lincoln (2013:151) as the fundamental base of all research methods in the social and behavioural science. A qualitative observation is used in the social sciences as a method for collecting data about people, situations and cultures (Aina, 2014:350;Wagner 2012:150; Creswell, 2014:25). Wagner (2012:150) adds that qualitative observations do not only involve simply going out into the field and observing a group, culture or a situation. Instead,there are certain aspects that need to be considered:

a) The observer's role: is regarded as important in all instances to formulate a thoughtful and well-understood relationship between the researcher and the research participant.
b) Defining the research question: in qualitative observations, the researcher is not required to define a precise set of issues in the beginning. These issues, according to Wagner (2012:15), often emerge from the study over time.
c) Selecting qualitative research tools: on this issue, Wagner, Kawulich & Garner (2012:16) notes that selecting how and when data will be collected is an essential part when conducting observations. He advises that observers may simply begin with a blank notebook and write down everything that happens, while others may use audio or video tapes.

Leedy & Ormrod (2015:145) conclude that observations in a qualitative study are intentionally unstructured and freely flowing. This means the researcher can shift his/her focus from one thing to another as new and potentially significant objects and events present themselves.

3.5.1.1 Advantages of observations

Leedy & Ormrod (2015:145) and Aina (2014:350) share the same opinion that the primary advantage of conducting observations is its flexibility. This means the researcher can take advantage of unforeseen data sources as they surface. Other authors such as Rahman (2016:106), Creswell (2014:191) and Wagner, Kawulich & Garner (2012:150) considers the advantages of observations being useful in exploring topics that may be uncomfortable for participants to discuss. "Direct observation is the best way to collect data" because it enables the researcher access to those aspects of a social setting that may not be visible to the general public (Rahman, 2016:107). Last, but not least, with observations, the researcher can record information as it occurs and notices unusual aspects as soon as they surface.

3.5.1.2 Disadvantages of observations

There are a number of reasons why observations are not regardednas the best method for collecting data. For example, the researcher may not have good observing skills. A second disadvantage is that the researcher may be seen as intrusive. Thirdly, the researcher may not be interested in what happens behind the scenes. Finally, the researcher may find an interpretation of what he/she observed hindered by factors such aswhen the key participants only admit the researcher into situations to observe that are already familiar to him/her (Wagner,Kawulich, & Garner2012:151,Creswell,2014:191; Rahman,2016:107).

3.5.2 Document analysis

A document review or document analysis is another qualitative data collection method that helps increase the trustworthiness and credibility of the data collected (De Vos, 2015:127). A document review is defined by Corbin & Strauss (2015:214) as a way of collecting data by systematically reviewing existing documents. Bowen (2009:2) adds to this definition, by indicating that a document review or document analysis involves a systematic procedure for reviewing or evaluating both print and electronic materials. (Bowen 2009:2 and Corbin

&Strauss, 2015:214) concur that documents that may be used for systematic evaluation as part of the study can take a variety of forms. They include advertisements, agendas, attendance registers, minutes of meetings, manuals, background papers, books and brochures, diaries and journals as well as event programmes. Bowen (2009:2) further mentions that these types of documents are found in libraries, historical society offices and organisational files. Researchers typically review prior literature as part of their studies and incorporate that information in their reports.

3.5.2.1 Advantages of document analysis

The advantages of this data collection method are numerous. Firstly, documents contain data that can no longer be observed, provide details that participants have forgotten and can track change and development. Secondly, documents are stable, non-reactive data sources. This means that they can be read and reviewed multiple times and remain unchanged by the researcher's influence. Thirdly documents are commonplace and come in a variety of forms, making them an extremely accessible and reliable source of data (Bowen, 2009:4). Lastly, sincedocuments provide written evidence, it saves the researcher the time and expense of transcribing evidence gathered through, for example, interviews. Furthermore, documents often represent data which research participants have already documented (Corbin &Strauss, 2015:215;DeVos, 2015:123; Creswell, 2014:191).

3.5.2.2 Disadvantages of document analysis

Besides the advantages of reviewing documents, there are also limitations associated with this data collection method. Firstly, the researcher needs to have information seeking skills in order to obtain relevant and up-to-date information. The available information often first needs to be digitised. Some of the materials may not only be incomplete but may also not be authentic or accurate (Creswell, 2014:192, Corbin &Strauss, 2015:216; DeVos 2015:124). Another concern to keep in mind, as noted by Bowen (2009:3) when using document analysis, is that a document will not provide all of the necessary information required to answer research questionsperfectly. Bowen (2009:4)adds that some documents may only provide a small amount of useful data or sometimes none at all.

3.5.3 Interviews

Interviews are regarded as one of the most commonly used and valuable data collection techniques/methods in social science research (Ngulube 2009:82). It is a primary qualitative data collecting method using personal contact and interaction between the interviewer and interviewee as a source of research data.

It is the interviewer's responsibility to ensure that participants are comfortable with the interview as a communicative event. Interviews sometimes referred to as oral questionnaires, are considered to be the best data collection tool as it involves finding information from respondents through verbal interaction between the researcher and the respondents(Valenzuela 2013:2). As stated by Matthews (2010:179), an interview, as a data collection method, uses personal contact and interaction between an interviewer and an interviewee.Similarly, an interview is described by Mukherji and Albon (2015:149) as a method where one person poses questions to an individual or group of people with the aim of getting answers to either address a particular issue or to elaborate on their views of a particular topic.In addition, the aim of a qualitative interview, as explained by Maree (2013:87), is to "see the world" through the eyes of the participant. The interview transcripts area valuable source of information provided they are used correctly.

3.5.3.1 Types of interviews

There are three types of interviews, each of which elicits data in different ways. Fielding and Thomas (2008:65),Maree (2013:87), and Mukherji& Albon (2015:152-154) differentiate between structured, semi-structured and unstructured interviews. Fielding and Thomas (2008:65) explain that the main difference between structured and unstructured interviews is the aim of the interview. The structured interview aims to explain behaviour within categories that have been decided beforehand (deductive). The unstructured interview aims to understand complex behaviour, without deciding beforehand, which categories of responses may emerge (inductive). The semi-structured interview aims to provide a clear set of instructions for interviewers but allows freedom to probe freely for additional information when necessary and can, therefore, provide reliable, comparable but also rich qualitative data. Each of these types of interviews is described in more detail below.

(a) Structured interviews

Creswell (2014:172-173) and Mukherji & Albon (2015:152) define structured interviews (also known as a standardised interview or a researcher-administered survey) “as a quantitative research method commonly employed in survey research. The aim of this approach is to ensure that each interviewee” is presented with exactly the same questions in the same order–the interviewer follows a fixed and standardised pattern. The interview schedule consists of a set of questions read out to a participant, and the answers are usually slotted into predetermined categories. The structured interview questions are detailed and developed in advance (De Vos 2005:292). Similarly, Mukherji & Albon (2015:152) note that structured interviews consist of mostly closed-ended questions. In these interviews, only a limited number of responses can usually be given. As was mentioned above-structured interviews are regarded as an appropriatequantitative data collection technique (Feilding &Thomas,2008:64).

(b) Unstructured interviews

Unstructured interviews are qualitative in nature as they are designed to provide in-depth information about the participant’s beliefs, thoughts and feelings(Fielding& Thomas,2008:65).The unstructured interview mainly comprises open-ended questions that allow the interviewees to tell their own stories in their own words. However, according to Henning (2004:66) unstructured as well as semi-structured interviews, allow an interviewee to discuss aspects of the topic that is relevant to the interviewer. This is due to the open-endednature of the interviews, which have no predetermined answers. Lastly, it is obvious that the purpose of structured interviews differs from that of unstructured interviews.

The difference between these two sets of interviews as outlined by Edwards & Holland (3013:17) is that structured interviews refers to interviews in which questions to be asked to the candidates are prepared in advance. An interview in which the questions to be askedof the candidates is rare and are not prepared beforehand is called an unstructured interview. Another difference indicated by the same author is that as the structured interview is pre-planned and the same set of questions is put to all the candidates, so the data collected are quantitative in nature. In contrast, in an unstructured interview, different questions are put to different candidates to collect qualitative data.

(c) Semi-structured interviews

When the interviewer uses a mixture of both open and closed-ended questions, the technique is known as conducting semi-structured interviews. Semi-structured interviews are used extensively in qualitative research (Creswell, 2015:38). Pickard (2013:199) analysis of semi-structured interviews is that they also use an interview guide with some questions developed in advanced. However, they do allow the interviewer to stray from the interview guide by asking follow-up questions that the interviewer feels are appropriate. Fielding and Thomas (2008:65) also differentiate between semi-structured and structured interviews. They state that unlike as is the case when conducting structured interviews, there is greater flexibility to probe for detail in relation to a particular response when the interview is semi-structured. Again, the interviewer can adapt the questioning to suit the needs and level of understanding of the interviewee.

3.5.3.2 Advantages of interviews

There are many advantages to interviewing. Burns and Grove (2003:285), DeVos (2015:302) and McQuerry (2017) mention several advantages. These have been combined in the following list:

a) It is a flexible technique that allows the researcher to explore the meaning of information in greater depth than can be obtained with other techniques.Accordingly, the interviewer is able to gather complex, in-depth data that, for example, are not as easily collected when using questionnaires or document analysis.
b) Interpersonal skills can be used to facilitate co-operation and elicit more information. Interviewing allows an interviewer to gather not only hard, factual data, but also to collect emotional data as well. For example, a participant can be asked to describe how he/she felt in a particular situation. This provides more complete feedback than asking a subject to explain a process.
c) A higher response rate can be expected – more so than with questionnaires. This allows for better extrapolation to the target population.
d) In-depth probing is possible and leads to a more complete description of the phenomenon under study by the participants.
e) "Interviews allow collection of data from participants unable or unlikely to complete questionnaires,"Burns & Grove (2003:285), such as thosewho cannot read or write – where the ability to express themselves is marginal.

f) During interviews, personal contact is made,and this enables the researcher to explore confusing or ambiguous questions in detail – where necessary.

3.5.3.3 Disadvantages of interviews

There are certain disadvantages associated with this data collection technique. It is, for example, expensive and time-consuming to conduct interviews (Valenzuela, 2013:3). In turn, Creswell (2014:191) adds that the researcher's presence may bias the responses. Thisis an extremely important aspect to note for this study because the librarian community in Lesotho is small and the librarians know each other well. Thomas (2003:64) also criticises interviews for bias due to potential problems such as poorly articulated questions and reflexivity usually caused by the interviewee who gives interviewers what they want to hear rather than what they need to hear.

In order to overcome these challenges, the researcher has to assure respondents that an honest response is preferred and that the responses will remain confidential (Valenzuela, 2013:3).

3.5.3.4 Interviewing technique

Maree (2013:88), De Vos (2015:288) and McQuerry (2017) provide the following as advice to the researcher who would like to make use of interviews when conducting research:

a) The participant must do 90% of the talking.
b) Ask clear and brief questions.
c) Start with questions that are not controversial.
d) Ask questions when you do not understand the response.
e) Avoid asking leading questions.
f) Repeat key questions (phrased differently) throughout the interview.

3.5.4 Data collection methods selected

Face-to-face, semi-structured interview schedules were used to conduct the interviews for this study. The library heads or systems librarians of the LELICO libraries were interviewed. The same types of interviews were also used to benchmark with the heads or systems librarians of the academic libraries in South Africa. The last set of respondents (library system vendors) was interviewed using a semi-structured schedule but the interviews were conductedby means

ofSkype. The researcher used written notes and a digital recorder to capture the data. The interview schedules are attached as appendices C, D, and E.

The reasons for selecting this data collection method are the following: Semi-structured interviews permit the researcher to get in-depthinformation, and, hence, result in a rich data set. This, in turn, provides the best understanding of the research problem.

3.6 Target population and sampling

A target population is the entire set of objects or people that are the focus of the research project and about which the researcher wants to determine some characteristics (Bless, Higson-Smith & Sithole, and 2013:162). Regarding the context of this study, the target population would be the head librarians or the system librarians of (a) all libraries in Lesotho, (b) all academic libraries in South Africa and then also (c) all library system vendors.

In order to obtain accurate information about a group of people, it is best to examine everyone in the group. As indicated above, the target population for this study would have been extremely large. As a result, the researcher might have taken forever to collect qualitative data. Furthermore, the data analysis of such a large population would also have posed a challenge automatically.

However, as stated by Bless, Higson-Smith & Sithole (2013:162) it is also possible to get an accurate conclusion by studying only a portion (a sample) of the target group. This is why the researcher decided to use sampling. According to Pickard (2013:59), sampling is employed when the population of the study is too large to include all members in the research. Mukherji & Albon (2015:237) concur with this statement and add that the process of choosing who will be your participants is called sampling.

Two main techniques are used when sampling the target population. These are:

(1) **Probability sampling** (that includes simple random sampling, stratified random sampling, proportional random sampling, cluster sampling, and systematic sampling), and

(2) **Non-probability sampling** (which includes: convenience sampling, quota sampling, and purposive sampling (Leedy& Ormrod, 2015: 176-190).These are all described in more detail

below.A further non[probability sampling technique, snowball sampling, is often overlooked but may be appropriate for this study and is therefore also described.

In a qualitative study, the population is usually relatively small because the findings of the study are often designed to apply to a restricted group. When it does become necessary to select a sample from the target population, the following techniques can be applied:

3.6.1 Probability sampling

Sampling is defined by Mukherji & Albon (2015:237) as the process of choosing who will be the participants of the study. Probability sampling includes simple random sampling, stratified sampling, proportional random sampling, cluster sampling and systematic sampling.

3.6.1.1 Simple random sampling

This is a basic technique that is used if the population is relatively small, and each member within the population should have an equal chance of being selected (Wagner, Kawulich& Garner, 2012:90). For example, using a class list, where all the students are listed alphabetically by surname, is used and every second person on the list is chosen for the sample.

3.6.1.2 Stratified sampling

In this method of sampling, according to Mukherji & Albon (2015:239), the researcher decides beforehand what variables are likely to affect the study, finds out the proportions of these variables within the population and then chooses a sample that reflects these proportions. For example, the same class list mentioned above is used but the candidates are first sub-divided into males and females and then every second male and every second female is chosen so that the sample is a correct representation of the gender distribution of the class.

3.6.1.3 Proportional random sampling

Proportional random sampling is defined by Corbin and Strauss (2015:216) as a sampling strategy that is used when the population of the study is composed of several subgroups that are different in number. Corbin and Strauss (2015: 216) go on to say that “the number of participants from each subgroup is determined by their number relative to the entire

population.” For exampleone might divide a sample of adults into subgroups in terms of their ages, like 18-29, 30-39, 40-49, 50-59 and 60 and above.

3.6.1.4 Cluster sampling

With regard tocluster sampling, Corbin & Strauss (2015:217) explain that the researcher divides the population into separate groups called clusters. Corbin & Strauss (2015:217) further note that a simple random sample of clustersis selected from the population. The researcher conducts his analysis on data from the sampled clusters.A good example of cluster sampling is area sampling or geographical cluster sampling. Each cluster constitutes a geographical area.

3.6.1.5 Systematic sampling

Systematic samplingis a type of probability sampling method in which sample members from a larger population are selected according to a random starting point at a fixed periodic interval, (Corbin &Strauss, 2015:216; Mukherji & Albon, 2015:239).For example, if a researcher wants to create a systematic sample of 1 000 students at a university with an enrolled population of 10 000, he or she would choose every tenth person from a list of all students.

3.6.2 Non-probability sampling

Non-probability sampling is another type of sampling, which differs from probability sampling in that it does not require random selection, (probability sampling does require random selection). Non-probability sampling is defined as a sampling technique where the sampleis “gathered in a process that does not give all the individuals in the population equal chances of being selected” (Wagner, Kawulich & Garner, 2012:92; Pickard, 2013:49). As mentioned by Pickard (2013:49), thisstill requires that no probabilistic samples are representative of the population. It also does not mean that non-probability sampling cannot depend upon the rationale of probability theory. Non-probability sampling includes convenience sampling, quota sampling, purposive sampling and snowball sampling.

3.6.2.1 Convenience sampling

Convenience sampling, which is sometimes referred to as accidental or haphazard sampling is a type of sampling method in which the researcher simply uses whoever is readily available (Wagner, Kawulich & Garner, 2012:92).For example, Pickard (2013:50) explains that

interviews conducted frequently by television news programmes to get a quick (although non-representative) reading of public opinion, is a good example of convenience sampling.

3.6.2.2 Quota sampling

In quota sampling, you select people non-randomly according to a fixed quota. Quota sampling comprises two types, namely, **proportional**and**non-proportional**.

With **proportional quota sampling,** you want to represent the major characteristics of the population by sampling a proportional amount of each, whereas, with non-proportional sampling, you specify the minimum number of sampled units you want in each category. Pickard (2013:51). For example, in a study where the researcher likes to compare the academic performance of the different high school class levels, its relationship with gender and socioeconomic status, the researcher first identifies the subgroups. Usually, the subgroups are the characteristics or variables of the study.

3.6.2.3 Purposive sampling

Purposive sampling is done with the sample in mind. This is why Wagner, Kawulich &Garner (2012:93) points out it is sometimes referred to as judgement sampling. With purposive sampling, the researcher relies on his or her own experience or previous research to identify the participants in such a manner that they can be considered to be representative of the population (Bordens, 2011:31; Bless,2013:65; Wagner, Kawulich & Garner 2012:93).For example, the researcher is investigating library automation processes and purposively selects only those libraries that have already gone through an automation process, and includes them in the sample population.

3.6.2.4 Snowball sampling

Another type of non-probability sampling is snowball sampling. Regarding snowball sampling, Pickard (2013:51) and Mukherji & Albon (2015:240) detail that every participant recruited for a study is asked to identify others who may be appropriate or willing to be a participant. Mukherji & Albon (2015:240) add that this method can be useful for gaining access to “groups

that might be considered difficult to reach."This includes cases such as drug users or sex workers.

3.6.3 Sample population for the study

Purposive sampling along with convenience sampling were used to select the following sample groups.

3.6.3.1 LELICO Libraries

LELICO is the only consortium in Lesotho which specifically deals with the use of ICT in libraries. By virtue of this mandate, it was easy to identify an appropriate sample for the study. From the LELICO member libraries, two groups of people were chosen purposively again for two reasons. Firstly, the head librarians, as decision-makers, to provide information with regard to managerial issues. Secondly, systems administrators as they are the managers of library systems. As a result, they were able to provide in-depth information on the challenges and successes they experienced at their respective workplaces. It was important for the study to establish which library systems were already being used by the LELICO libraries and which services were basedon these systems.

3.6.3.2 Academic libraries in South Africa

It was stated earlier that this study bench marked with South African academic libraries. Purposive sampling was also used to select the libraries of the University of South Africa (UNISA); the University of Kwa-Zulu Natal (UKZN) and the University of the Free State (UOFS).

The University of the Free State, being in South Africa, is near Lesotho. As a result, it was easier to collect data from its institutions. On the other hand, UNISA, was selected because the researcher was a UNISA student**,** and it became easier for her to collect data from the library staff. Their extensive experience of automation also contributed significantly inthe data collection process. In addition, the UNISA library is the largest university library in South Africa with a large budget at its disposal. (UNISA Library, 2018). Accordingly, the directors of the UNISA and the Free State libraries were selectedconvenientlyfor this study. Both UNISA and the University of the Free State automated their library functions several years ago. It is, therefore, anticipated that these libraries would already be providing 21st century

services to their clients. UKZN was selected after it became known that they were the first library in South Africa to move to the Worldshare Platform. The Worldshare Platform as shown in page 39, table 2B is regarded as an example of library service platforms, which is the new generation software.

3.6.3.3 Library system vendors

Inmagic, Alma and Worldshare Management Services (WMS) were selected out of seven vendors, (refer to chapter 2, table 2B & 2C). Inmagic was chosen because, from the researcher's observations, some LELICO members that had started automation used it, while Alma and the WMS (Worldshare management system) were chosenbecause although they are seen or regarded as new generation systems, no library in Lesotho makes use of either of them. As a result, they were able to provide information pertaining to the following categories

a) Financial - the costs compared to the ownership model / decentralised systems.
b) Infrastructure: The kind of infrastructure needed, if any.
c) Human resources: The kind of training needed for librarians to be conversant with the system.
d) Comparative information: Their efficiency as compared to traditional systems
e) Services: The new and additional services that are made possible when a library introduces a new generation system.
f) Prerequisites: Which requirements need to be met before it is possible to migrate to a new generation system.

3.6.4 Bias in sampling

It is important when conducting research to collect data about a phenomenon that will help the researcher to reach appropriate conclusions. For this to happen, Dawson (2007:47) is of the opinion that the researcher's methods must be reliable, valid and not biased. Wright (2014:238) notes that a common cause of sampling bias lies in the data collection procedure.

Although bias can be intentional, that is often not the case. A sampling method is called biased if it favours some outcomes systematic ally over others. For example, a sample is considered biased by Suter (2012:240) when the sample is not a representation of the population. A sample is also biased if certain members are underrepresented or overrepresented relative to others in

the population. It is important, therefore, for the study not to be biased in anyway, as biasness reduces the reliability of the research and, therefore, also the usability of the outcome / results.

3.7 Data analysis and presentation

Data analysis aims to make sense of the respondents 'recorded experiences (Bless, Higson-Smith & Sithole,2013:339).When analysing qualitative data, the researcher has to decide which data to include and which techniques to use to aid the analysis process. Mukherji & Albon (2015:278) recommend that data analysis is begun as soon as it has been collected. They also go on to suggest that writing up should not be left too late.

Bless, Higson-Smith & Sithole (2013:342), Creswell (2014:197) and Mukherji & Albon (2015:278-279) share the same sentiments with regard to the fact that there are certain steps that needto be followed in data analysis. They recommend that the first steps for the researcher areto immerse him/her in the data by reading and re-reading the collected material. Pieterson (2015:40) notes that by doing this, the researcher gains a broad sense of which information has been collected.

The second step is to start preliminary coding of the data according to predetermined themes. The literature review of this study discussed some of the themes trending in libraries of the 21st century. The interview questions were guided by the objectives of the study.These pre-set themes then provided a simple mechanism for coding the data collected.

The third step is coding definitions. This step is said to require the researcher to provide a scope for each code (theme) so that data can be identifiedeasily for coding. Pieterson (2015:41) adds that hierarchies at this stage can be incorporated into the coding process. It should be noted that this study did not make use of any software package aids (such as Atlas TI) for data analysis because the study did not collect large amounts of data, the costs could not be justified.

As a result, the qualitative responses from the interviews were analysed by means of thematic analysis. This implies the study identified common themes or codes manually to establish patterns in the findings.

3.8 Ethical considerations

Chapter one highlighted the ethical considerations important for this study. In this chapter, this issue is addressed in a more detailed manner.

Ethical behaviour is accepted as an integral part of the research. It is, therefore, important that researchers protect their research participants and develop a trusting relationship with them. They also need to promote the integrity of research, guard against misconduct and cope with new challenging problems (Creswell, 2013:132). These issues are important and apply to qualitative, quantitative and mixed-methods research as well as to all the stages of research (Creswell, 2013:132;Leedy&Ormrod, 2016:101). Following the above introduction, Dawson (2007:150) explains that research ethics entail making sure that both the participants and the information are treated with honesty and respect. Table 3B demonstrates how ethical issues relate to different stages of research and how this study addressed them.

Table 3B: Ethical issues in qualitative research

Research stage	**Type of ethical issue**	**How to address the issue**
Beginning the study	"it is important to identify a problem that will benefit both individuals being studied and one that will be meaningful for others besides the researcher."(Creswell, 2013:132).	The study will provide information which can help LELICO libraries in their automation efforts. Library system providers can use this information to determine whether their services are relevant to their users and to improve services where applicable.

Research stage	Type of ethical issue	How to address the issue
	Do not pressure participants into signing consent forms	The participants were giventhe assurance that they did not have to be interviewed if they were not comfortable. The recording devices were only used with the permission of the respondents.
	Avoid plagiarism	The researcher acknowledged and cited other people's work during the preparation of the research report.
Collecting data	Avoid deceiving participants	Before each interview, the purpose of the study and how the data would be used were communicated fully to the respondents. All concerns were addressed before the interviews were conducted.
Analysing data	Respect the privacy and anonymity of participants	The anonymity of the results for this study was assured, and confidentiality of the respondents' contributions was adheredto.

Research stage	Type of ethical issue	How to address the issue
Reporting, sharing and storing data	Make sure that the participants know where and for how long their data would be stored and under what circumstances the data would be used.	Respondents were made aware of the purpose of the collected data. They were informed how the data would be used,and they were assured that the data would be destroyed after years.

Source: Adapted from (Dawson, 2007:150; Creswell, 2013:132; and Leedy & Ormrod 2016:101)

The ethical clearance which was used for this study was obtained from the College of Human Sciences research ethics review committee Information Science, UNISA. The certificate is attached as appendix A.

3.9 Conclusion

The chapter discussed the methodology employed in the study to answer the stated research questions. In addition, it outlined the target population and explained how the sample population to be interviewed, was identified. The reasons for the sample choices made were also provided. Furthermore, this chapter discussed the data collection methods that were adopted for this study. The data analysis steps, as well as the ethical considerations, were presentedat the later part of this chapter. The research findings are discussed in Chapter 4.

CHAPTER 4: PRESENTATION AND INTERPRETATION OF FINDINGS

4.1 Introduction

The objective of this chapter is to present,analyse and interpret the data collected from various respondents chosen for this study. Data were collectedfrom the respondents using semi-structured face-to-face interviews (refer to Appendix C). Interviews wereconducted with LELICO member libraries, and benchmarking with three academic libraries purposively selected in South Africa (refer to Appendix D). In addition, a WhatsApp call was madeas well, and Skype interviews were conductedwith library system vendors (refer to Appendix E).

As was stated in Chapter 1, the reason for this study (refer to section 1.4) was to establish the service delivery *status quo* in LELICO member libraries especially so where service delivery could be linked to the level of automation achieved. Once the *status quo* was known, the intention was to establish whether it was possible to provide guidance to the Lesotho libraries regarding a strategy to move from where they were to relevant and modern library services.

The findings showed that where new systems were put in place after 2008,LELICO member libraries seem to be able to demonstrate some of the characteristics regarded as modern library services(although minimally) (refer to Table 2.A). Thisdoes not imply that these libraries could be regarded as modern libraries. It was evident that where libraries had not automated, none of the advanced services were available. Therefore, this means that LELICO is faced with the challenge of helping its member libraries utilise ICT in all areas of their work.

The findings revealed that one LELICO library seemed to be extremely proactive/progressive in terms of service delivery. This library could serve as an extremely good benchmark for consortia members.

Section 4.2 of this chapter reports on the response rates of the interviews. The tables were also used to help present the findings from the respondents. In turn, section 4.3 presents the findings based on the interviews with the respondents from the libraries, while Section 4.4 reports on the interviews with the three relevant vendors. The chapter ends by presenting conclusions in summary in section 4.5.

The research was qualitative, but where possible, the findings are presented using tables and graphs. The findings are presented in the same order as they were asked during the interview sessions.

4.2 Response rates

Face-to-face and semi-structured interviews were conducted (refer to section 3.7.3) for more details). Sixteen (16) LELICO member libraries were targeted for the interviews, while twelve (12) interviews were conducted. Four (4) of the sixteen (16) targeted member libraries were unfortunately not able to participate in the research, the reasons for not participating varied from just having been appointed in the position, to a fear of sharing confidential information, to other libraries having one librarian, which made it difficult to allocate time for the interview. Only three (3) out of thirty-seven (37) academic libraries in South Africa were targetedforbenchmarking. Two of the interviews were conducted successfully. With the third academic library, there were many challenges including network challenges at the time the interviews were scheduled. The researcher ended up only issuing the questions in the form of a questionnaire instead of an interview. Furthermore, the questionnaire was not filled in by the librarian or systems librarian. Instead, it was referred to a specialist in data standards and quality reporting. As a result, she struggled to fill in the questionnaire because some of the questions were not within her area of speciality. Last, but not least, four (4) library systems vendors were also targeted for the interviews, but only three (3) of the vendors were interviewed eventually. One (1) vendor did not respond to efforts made to include him in the study.

Table 4A: Response rate

Categories of respondents	Target populations	Sample population	Number of respondents not interviewed	Number of respondents interviewed	Percentage participation
LELICO member libraries	16	16	4	11	69
Academic libraries in South Africa	37	3	0	3	100
Library systems vendors active in the LELICO community as well as new generation system suppliers.	7	4	1	3	75

Table 4A depicts the sample population for the study and the number of respondents who completed the interviews. A satisfactory response rate was achieved. The findings based on the interactions with the various participants have been recorded and are represented in the three sections that follow.

4.3 Presentation of findings obtained from the respondents

This section presents the findings collected by means ofsemi-structuredface-to-face interviews. The findings are reported using the same sequence and structure that was used for the interview schedule (see Appendix C).Same interviewswere also conducted with three academic libraries in South Africa (see Appendix D) and lastly, WhatsApp and Skype interviews with library system vendorsThe responses are reported together, using the same sequence and structure that was used for the interview schedule.

It should be noted that due to theunreliable internet in Lesotho, the researcher's efforts to communicate via WhatsApp or Skype calls with one of the participants (from academic library), was not successful. Instead, the researcher had to send interview schedule questions to the respondent. The questions were then answered as a text.

As background information: In order to get a clear picture of the conditions at the LELICO member libraries, interviews were conducted with either the head or the systems librarians of these member libraries.

4.3.1 Detailed information (LELICO members)

Questions that relate to demographic information were combined to create Table 4B, below. The respondents were asked to provide the number ofstaff members, both qualified, not qualified and if there were any temporary staff members.

Table 4B: Detail pertaining to LELICO members interviewed

Respondent	Permanent staff	Temporary staff	Qualified	Not qualified
L1	9	0	5	4
L2	11	0	10	1
L3	33	0	13	20
L4	2	1	2	0
L5	3	1	2	1
L6	3	0	3	0
L7	34	0	28	6

Respondent	Permanent staff	Temporary staff	Qualified	Not qualified
L8	1	0	1	0
L9	3	0	2	1
L10	3	0	3	0
L11	2	0	2	0
L12	2	0	2	0

The majority of the LELICO member libraries seemed to be small libraries. Only two (2) libraries could be regarded as fairlylarge with more than 30 staff members (L3 and L7). Two (2) were medium in size with approximately ten staff members (L1 and L2), while the rest were all extremely small with fewer than four staff members each.

Out of the total number of respondents, all the staff members were qualified in five (5) libraries. The rest of the libraries were staffed by a good mixture of both qualified and lay-staff members. An exception was participant L3, one of the few big libraries, which had a small number of qualified staff.

Demographic information, collected from the South African libraries, was combined to create Table 4C, below. As was done for the LELICO member libraries, the respondents were asked toprovidethe number ofstaff, qualified, not qualified and if there were any temporary staff members. Unfortunately, one participant was not able/willing to disclose the breakdown.

Table 4C: Detail regarding academic libraries in South Africa

Respondent	Permanent staff	Temporary staff	Qualified	Not qualified
AL1	97	7	70	20
AL2	50	0	38	12
AL3	+270			

Table 4C demonstrates that all three libraries could be classified as large libraries with many qualified staff. Respondent AL1 reported that temporary staff members were appointed to help at the circulation desk and when the library was closed. Participant AL2 indicated that his/her library did not employ temporary staff.

When looking at the standard of South African libraries, they are all large (employing many more staff members) than the libraries in Lesotho. Just as was the case in Lesotho, there were temporary staff members but not to the extent that it was cause for concern. Their qualified / not qualified staff mix did appear to be different. However, the South African libraries appeared to employ more qualified staff proportionally. It is, therefore, feasible to expect that their service mix would also vary.

4.3.2 Adequate staff to execute the library mandate

The respondents were also asked if their libraries had enough staff to execute the library mandate (refer to question three).Only two respondents felt that they had sufficient staff. All the other respondents indicated that they had too few staff members. Two of the respondents (L1 and L2) mentioned that senior staff members had to do low-level tasks such as working at the issue desk. Two respondents (L1and L3) asserted that the skills level of the staffwas not suitable for a modern library. One respondent (L7) mentioned that due to the vacant positions, the staff were not sufficient in number.

Skills shortages proved to be a serious challenge facing LELICO member libraries as was stated in section 2.3.6, Ahenkorah-Marfo & Borteye (2010:8) report that the library staff needs to be skilled to cope with the changes that accompany new developments that come about because of ICT development. Library automation is an example of these developments. It is also ideal in this situation because, in an automated library environment, the use of computers to execute library functions enhances the traditional functions of these services.

Two of the South African respondents AL1 and AL2 felt that they had sufficient staff. However, they felt that although some sections were short-staffed, they could carry an extra load and execute the mandate. The third respondent AL3 was not able to provide the information.

Unlike the LELICO member libraries, the selected academic libraries in South Africa seemed to have enough qualified staff to perform library activities. This is in line with what Ahenkorah-Marfo and Borteye (2010:8) and Mamvoto (2008:9) have reported as noted in section 2.3.6. They are of the opinion that the training of the staff of the library is an essential component for achieving any successful project by the library.

4.3.3 Members of the Lesotho Library consortium (LELICO)

Another question aimed to establish if all the respondents were indeed members of the LELICO. Their responses are captured in Table 4D

Table 4D: LELICO membership

LELICO membership	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12
Members	√	√	√	√	√	√	√	√		√	√	√
Non-members									√			

As can be seen from Table 4D above, all except one of the respondents, namely, L9, were members of LELICO. However, this contradicts Taole's (2008:123) study. According to this present study, LELICO has sixteen (16) see section 4.2) members. Since 2008,theLELICO membership has grown from twelve (12) to sixteen (16) members, (EIFL, 2013).However, at that time, the Palace of Justice (PJ) Library that is now called the High Court Library, was a member of LELICO, and now they mentioned that they were no longer members.

A question aimed at establishing to which consortia the South African libraries belonged, resulted in the responses that werecaptured in Table 4E below.

Table 4E: Consortia membership

South African consortia	AL1	AL2	AL3
SANLIC	√	√	√
CHELSA	√	√	√

Note: Respondent AL3 was not able to provide the information, but after checking the relevant websites, it was established that all the participants belonged to both consortia. Neither AL2 nor AL3 was able to indicate whether their library belonged to SANLIC. Again, it was establishedon their websitethat all South African academic libraries belonged to the consortium.

Unlike in Lesotho, South Africa has many consortia, and academic libraries are free to join those they feel will benefit their libraries. In Lesotho, on the other hand, there is only one consortium which also accommodates different types of libraries.

4.3.4 The value of being a member of LELICO

The respondents were asked if they had derived value from being members of LELICO. In response, most of the respondents (eight out of twelve) indicated that they did indeed benefit from being members of LELICO. They referred to the fact that LELICO organised training workshops and the members were readily available to provide help and advice. This is in line with what Kopp (1987:1),Taole (2008:408) and Ngozi (2010:75) have observed. They mention that libraries form partnerships to overcome the high cost of electronic resources. As cited by one of the respondents (see section 4.3.8), libraries are not money-generating, andit is extremely difficult to have sufficientfunds for their survival. Therefore, being a member of a consortium plays an extremelysignificant role because they help with cutting costs or soliciting funds for their members. Three (3) of the respondents received no support from LELICO, while one of the respondents did not answer this question because his/her library was not a member of LELICO. It is evident that LELICO does not meet all its members' expectations. One

respondent (L4) mentioned that LELICO did not have the financial muscle to help its member libraries.

When the South African respondents were asked if they had, indeed, benefit from being associated with one or more consortia, the response was as follows: AL 1 elaborated that they derived different benefits from the different consortia, for example, she explained that the CHELSA consortium was beneficial for their postgraduate students (Master's and PhD students) by allowing them direct access to resources at other South African academic institutions. The SANLIC negotiates discounted deals with database vendors for all South African institutions.

This is in line with the fact (see section 2.8.4) that it is importantfor libraries to form a partnershipto overcome the prohibitive costs associated with new generation libraries. It appears to be better for libraries to be affiliatedwith professional collaborative initiatives. LELICO member libraries and the selected South African academic libraries have proven to be examples of such collaborations.

4.3.5 A comparison between active and non- active members

Only one respondent (L9) was no longer an active member of LELICO. The respondentobserved that during her tenure, the library had not been a member of LELICO at all, but she added that she was aware that that library had once been a member of LELICO and that during that time, the library had been planning to introduce automation. Now there were no longer efforts in this regard anymore.

The respondent who mentioned that the library was no longer a member of LELICO was asked why they were not a member. The respondent indicated that this is because the library is not linked to an academic institution. This shows that LELICO is not marketing its membership to all the libraries, but it also indicates that the library has not made an effort to contact LELICO regarding the matter .A follow-up question was,"ifyou are not a member, are you aware of the benefits of being a LELICO member?" The respondent was aware that LELICO advocated ICT use in libraries. It was encouraging to find that the librarian was aware of the LELICO mandate.

4.3.6 Support gained from LELICO

Another question that was addressed to member libraries was how the support or information they received from LELICO, enhanced their automation status. Significantly, four respondents (L4, L5, L8 and L6) could not mention any LELICO activities that had boosted their automation status. The remaining members identified the following three support activities:

a) LELICO provides access to qualified and experienced librarians who areable to provide advice to others.
b) LELICO continues to educate members regarding automation.
c) LELICO advocates the use of ICT in libraries.

Generally, the members were able to see that their automation activities were boosted by their membership to the consortium.

4.3.7 The most important challenges with regard to serving clients

In addition, the researcher wanted to find out what the most important challenges were that the respondents and their professional staff had experienced when serving their clients. All the respondents experienced challenges in this regard. The challenges common to these libraries were

a) Financial constraints.
b) The lack of expertise.
c) The shortage of staff.
d) The availability of outdated materials,
e) The low internet bandwidth
f) The slow library systems.

One library reported that:

g) The staff members did not have an acceptable attitude towards work.

For the LELICO libraries to meet the needs of its users, the above services should be addressed. Money issues seemed to affect almost all these libraries, and if that is the case, how the libraries

will meet the service needs of the new era, remains a challenge. As stated in section 2.5.1, Nkiko, ILO & Osayande (2008:25) observe that most government institutions are underfunded, resulting in an inability to exploit ICT fully. This was also the case with LELICO member libraries as they received an insufficientsubvention from the government.

Furthermore, the researcher wanted to find out from the South African respondents what the most important challenges were that they experienced when serving their clients. Unfortunately, the information collected had little value because, inresponse, AL 1 acceded that technological advancementsposed a majorchallenge for library users with varying levels of computer and literacy skills, staff not adapting to change and not incorporating technology into their processes. She also added that, in some instances, funding and staff shortages were also challenges they had experienced. AL2 concurred with AL by noting "I suppose funding is an important challenge because we are unable to get the latest infrastructure because of a tight budget."

Financial constraints seem to be a challenge which cuts across all the libraries in their pursuit of providing relevant services to the clients. Accordingly, LELICO members are no exception.

4.3.8 Additional comments – background information

In the last question, which summarised the above questions, the respondents were asked if there was anything else that they would like to be recorded. One of the respondents further mentioned the mismanagement of funds. Other respondents mentioned the lack of support from management and the slow pace of going digital, as challenges experienced by LELICO member libraries.

Additionally, one respondent from L6 added that, for LELICO to function properly, it should give room for young vibrant professionals to be in the committee. Members of the committee should, for example, take only one or two terms of tenure. Furthermore, it was suggested that LELICO should find ways to allow active members to attend international conferences so that they would be able to share their experiences with other members. Money issues seemed to be the biggest problem facing LELICO. Money enables member libraries to purchase and sustain software, train staff on the developments in libraries related to ICT and can also be used to buy equipment. Accordingly, limited financial resources mean that there is a slim chance that member libraries will be able to provide the services needed by modern clients.

Regarding the above question, the South African libraries responded as follows: AL1 added that academic institutions in South Africa had an agreement not to charge each other for borrowing or lending materials through interlibrary loans. AL2 and AL3 did not have any additional information.

SECTION B: LIBRARY AUTOMATION STATUS AND SERVICE DELIVERY

This section aimed to establish what the level of automation-linked service delivery is at libraries affiliated with LELICO. Accordingly, this section focuses on questions linked specifically to library automation.

4.3.9 The current state of automation at your library.

The next set of questions (12 and 13), elicited information regarding the automation status of the member libraries. The respondents were asked about the current state of automation of their libraries.

Table 4F: Automation status of LELICO member libraries

Respondent	Automation status	Library system currently in place	Previous system
L1	Partially automated	InmagicGenie	Bookworm
L2	Partially automated	LibwinLibrary Management System	Q and A
L3	Partially automated	InmagicGenie	Browne System
L4	Fully automated	Inmagic DB/Textworks	Browne System
L5	Fully automated	Libwin Library Management System	Browne System
L6	Fully automated	L U 4Elite	Browne System
L7	Fully automated	Millennium INNOPAC	L.T.S
L8	Partially automated	Adlib-Maxiel	Browne System

Respondent	Automation status	Library system currently in place	Previous system
L9	Not automated	None	Browne System
L10	Not automated	None	Browne System
L11	Partially automated	Home Grown	Browne System
L12	Not automated	None	Browne System

Table 4F shows that two (2) libraries L10 & L12 were not using any automation software, while a third (L11) made use of a homegrown system. For the remaining nine (9) libraries, the systems in use were not standardised, and none of these systems could be regarded as new generation library systems. Innovative Millennium Innopac is a large integrated system, but the rest were what could be regarded as small to medium systems used in special libraries. The systems mentioned were as follows:

a) Lucidia's InmagicGenie (2)
b) Lucidia's Inmagic DB/Textworks (1).
c) Libwin Library Management Software (2).
d) MillenniumINNOPAC (1).
e) Home Grown (1).
f) L4U Elite (1)
g) Adlib-Maxiel (1).

In contrast, Taole (2008:123) indicates that the following systemswere used by LELICO members in 2008, namely, Bookworm (1), Q & A (1), CDS/ISIS (1) and Integrated Tertiary Software (1). In addition, the researcher wanted to establish the automation *status quo* of the participant South African libraries, and wanted to know what measures they had put in place to achieve and sustain that status.

Table 4G: Automation status of South African academic libraries

Respondent	Automation status	Library system currently in place	Previous system
AL1	An automated cloud bases library system. All library services and functions are fully automated ranging from the circulation of library material to acquisition of material.	OCLC Worldshare Management Services	URICA followed by SirsiDynix Symphony
AL2	Fully automated	Sierra, a product of III Innovation	It has always been Sierra.
AL3	Fully automated	SIERRA library system	Millennium library system

Table 4G reveals that these libraries, unlike the LELICO member libraries, had advanced automation systems and even used cloud-based library systems. Additionally, the systems they had in place could be regarded as a new generation system.

4.3.10 The relationship between the system vendor and the library

The respondents were asked what relationship there was between the system vendor and their libraries. Three respondents declined to answer this question. Out of the nine (9) libraries that had automated, five (5) respondents indicated there was an excellent and supportive relationship with the suppliers. Two (2) of the respondents responded there was no interaction with the suppliers. They further mentioned that there was an intermediary who addressed any issues, which might arise. Unfortunately, one of these two (2) libraries had aborted their attempts to automate. One (1) respondent also indicated that the system was a donation. As a result, there was neither communication nor support from the supplier. Their system was also now dysfunctional, because there was no relationship between them and the supplier.

The South African respondents were asked what kind of relationship existed between them and their vendors. AL 3 was not able to answer that question as it did not fall within her scope of work. AL 2 responded that there was a good relationship, but sometimes their responses were slow as the vendor was based in Ireland. AL1 made it clear that a close relationship existed between the library and the system vendor. In addition, the vendor offered support when issues were experienced with the system. For example, she explained that the vendor did the initial set up and configured the system according to their library processes and procedures and continued to make configuration adjustments as needed. Logs/faults were reported via email or telephone. The vendor also made site visits to conduct training sessions and provide updates on new enhancements.

It is stated in section 2.7.2, that good technical support is needed for libraries to implement an automation project successfully. The academic libraries, which the researcher used for benchmarking, clearly felt that they received good technical support from their vendors. Swee & Abdullah (2005:39) (see section 2.7.2) maintain that good technical support plays an extremelycritical role in theautomation of library projects. They further mentioned that libraries that receive good technical support from their vendors seldom face problems because their vendors are quick to react to their requests for assistance.

SECTION C: LIBRARY SYSTEM

The previous section (section B) dealt with the *status quo* of libraries belonging to LELICO. This section (section C) now determines the systems used by these libraries regarding whether they could be regarded as new generation systems or not. The systems previously used by these libraries were also determined.

4.3.11 Which system(s) was/were in operation before the current system(s)?

Table 4G revealed that five (5) respondents indicated that they had used more than one library system. Systems that were previously usedwere the following:

a) Bookworm.
b) Q&A.
c) Infotree.
d) Brown.

e) LTS.

These systems no longer existed. Taole (2008:125-125) reports that they encountered the following problems:

a) **Bookworm** –it could not be upgraded, the vendor was not traceable, there was no system support, and no other users were known.
b) **Integrated tertiary software (ITS)** – it was not web-based and catered for small user groups.
c) **Q & A** – it was not possible to access loans module.
d) **CDS/ISIS** – it did not accommodate other modules.

The rest of the respondents, , pronounced that before their current systems, they had always used a manual system. Infotree had not yet been replaced by the library, which had been using the same library system since its establishment. Three of the respondents whose libraries were not automated, indicated that their services hadnotchanged (see the last column of Table 4D).

The South African libraries also signified that only two (2) respondents confirmed that they had used more than one library system (see Table 4G). In turn, one respondent (AL1) indicated that his/her library had always used Sierra. Systems that were previously usedwere the following:

a) URICA
b) SirsiDynix Symphony
c) Millennium library system

These systems are considerably more powerful, cost more, and the skills required to use these systems are also more advanced than those required for the systems typically used in Lesotho. One could, therefore, expect big differences in the service offering.

4.3.12 New services introduced after the change in the system

Out of the five (5) libraries, which were partially automated, only two (2) of these libraries revealed that there were no additional new services yet, whereas, three (3) were already experiencing new services such as online cataloguing. The new services, however, were at a

commencement stage. The rest of the four (4) libraries, which were fully automated, reported enhanced traditional services such as the fact that their users could access information remotely. Additionally, two (2) of the libraries which indicated that they had changed to the new system also mentioned that they experienced efficient and effective traditional library services. Two (2) indicated that they could provide statistics and one (1) reported that the library could provide electronic information.

The findings demonstrate that the new systems seemed to reveal some of the characteristics regarded as modern library services (although at a minimal phase) (refer to Table 2A). This indicates that libraries cannot be regarded as 21stcentury libraries if they are not fully automated. The more the LELICO members can automate their services, the more they will be able to provide modern services. To conclude, in Table 4D, the respondents revealed that, based on their personal experiences, library automation made their work enjoyable and efficient. It is important that LELICO should make its impact felt amongst its member librariesso that they can fullyenjoy the benefits it is supposed to offer. This will enable members to remember that LELICO is the first port of call whenever there is a problem or when advice is needed.

Of the three (3) South African libraries, one respondent (AL2) indicated that his/her library had always been using the same system and, therefore, nothing much had changed in terms oftheir service delivery. However, what had changed was the enhanced graphical user interface as the new graphical interface had more functionality in terms of more products such as product data exchanges. The other respondent (AL1) listed some of the new developments that had taken place since the introduction of the new system. These developments included:

a) The system was cloud-based and eliminates concerns regarding servers, backups and updates.
b) The system offered a module named licence manager to manage their database licence agreementseasily.
c) Library users were able to access their library accounts to renew items on loan and place holds for items they need as well as submit interlibrary loans requests.
d) For circulation, they had all the circulation functions and information on one screen, again saving time going into different modules.
e) With the use of lists, librarians were able to use records from the WorldCat local to place orders for newbooks.

f) The library catalogue gave their users access to both their print and electronic resources all at the same place. Access to our resources could be both off and on campus

The third respondent explained that the system was an upgraded version of the previous system, but she did not have sufficient information regarding, which activities had been upgraded as she did not work with the technical aspects of the system.

4.3.13 Additional comments – library system

Regarding additional comments, the respondents were asked if there was something they would like to add. One (1) respondent added that library automation made work enjoyable and efficient. Another (1) respondent stressed the significance of support from the management and another one (1) indicated that LELICO had notbeen consulted for help regarding the challenges experienced with the system.

The South African respondents were also asked if there were something they would like to be recorded. Two respondents (AL 2 & 3) did not have anything to add. The other respondent (AL1) stressed that all their library activities were performed using WMS. The system was easy to use, saved time, offered considerable cost savings and streamlined the workflow. The system offered staff functions such as ordering, cataloguing and circulating their material and a public interface that was their library catalogue to access their print and electronic material at one point. There was also limited downtime and continual access to updates and enhancements at no extra cost.

SECTION D: SERVICES REGARDED AS 21ST CENTURY LIBRARY SERVICES

It was anticipatedthat in order to provide relevant services, LELICO member libraries would have to fast-track their automation status. With that in mind, in this last section, the researcher wanted to find out which important issues LELICO member libraries needed to address to leapfrog their automation status. Library systems are acquired with the aim of automating library functions with the hope of providing services that are needed by users.

4.3.14 Satisfaction with the services currently provided by the library

In this last set of questions addressed to LELICO member libraries, the researcher wanted to establish which services, provided by these libraries, were regarded as satisfactory and how LELICO members can improve the provision of such services. The librarians were, therefore, asked, if, from their managerial perspective, they were happy with the services their librarieswerecurrently providing. More than half of the respondents (eight out of twelve) were not happy with the services their libraries were currently providing. Some of the common reasons included:

a) A lack of money.
b) A shortage of qualified staff.
c) Stale services.
d) Lack of technology.

Three (3) of the respondents were happy and confident with their library services, while one (1) rated their happiness at 60%. Thisconfirms what Islam & Islam (2007:8) claim, as referred to in section 2.5, namely, that the world of ICT –based libraries is still in its infancy in developing countries. The laggard status is caused by the above-mentioned factors. Other authors cited in section 2.5.1 to 2.5.5 who concur with the above are, Ilo & Osayande (2008:25), Gbadamosi, (2012:3) and Isiakpona(2015:28).

4.3.15 Opportunities to enhance the current services

A follow-up question was that if they were not happy, how could the services they were currently providing, be enhanced? Although in the responses to the previous question, four (4) respondents emphasised that they were happy with the services their libraries were offering, in

terms of this question, only two (2) respondents indicated that there was no need for their libraries to be improved. The rest of the respondents, namely nine (9), shared the same opinion, namely, that their libraries indeed needed to be improved. The ideas suggested by these respondents included the engagement of professional staff, especially system librarians, a highly qualified IT section within libraries, support from the management and the availability of funds, which would help libraries to execute the desired services and library systems, which met the demands of modern users. It is confirmed in section 2.3.3, where Obaseki (2011:63) is cited, who avers that a reliable vendor who offers affordable prices can make it easier to achieve one's service targets. Two (2) respondents indicated that they would like to see digital or e-libraries and one (1) was concerned about the security of collections.

4.3.16 Institutional support to provide 21st-centuryservices successfully

Another question focused on the managerial point of view, namely, how the institution could help the library (and other consortium members) to provide servicessuccessfully? Only two (2) libraries had the support of their management, and as a result, they were performing extremely well. Ten (10) concurred that the institutions should support the efforts of librarians, which included the provision of the necessary budget for the library. They also mentioned that the management should try and understand the objectives of LELICO. In this way, they would be able to support libraries in their efforts to collect and subscribe to e-resources and similar library systemsjointly.Some of the respondents felt that their libraries were sidelined by their management, especially, because they did not generate an income for their institutions. It is observed by Swee & Abdullah (2005:29), as mentioned in section 2.3.2, that support from the management is the most important factor in deciding whether the library should engage in an automation project or not. Libraries that lack the support of management, consequently, have a challenge with regard totheir automation projects.

4.3.17 Vendor support to introduce solutions to challenges

The respondents were also asked how their system vendors were planning to provide solutions to their challenges. Besides support from the management, the system vendors also played a significant role in the success of library automation. Three (3) libraries, which were not automated, had no system vendor and, therefore, found this question inapplicable. Four (4) other libraries had a good relationship with their system vendors, and, in order to introduce the

challenges encountered, these vendors provided technical support, updated the software on a yearly basis, communicated frequently, held user support workshops, and some of the problems were solved as they arose. Other respondents indicated that they had the assurance of a vendor that they would be able to migrate to other systems should there be a need. Again, with minor problems, the vendors could communicate with their clients through a team viewer. Some of the libraries indicated that they did not deal directly with the system vendors; they consulted intermediaries when problems arose, so this question was not applicable, and they decided to leave it unanswered. This is in line with what Obaseki (2011:63) signifies as cited in section 2.3.3. He is of the opinion that since the lack of resources (money) is one of the major hindrances in library automation, a reputable vendor, whose software is maintained regularly at an affordable price, is highly recommended. In support of Obaseki's (2011:63) statement,one system vendor (V2) suggested that efficiencies introduced by the system would help users to create the capacity to do different things such as time-saving in processing materials and budget-saving (see section 4.5.8). In section 4.5.9, Taole (2008) adds that to avoid obstacles to automation caused by insufficient funds, especially, libraries across the globe have formed consortia. This study also indicates that libraries that have a good relationship with their vendors manage to fully automated and in this case, slowly, but surely, are moving towards providing modern library services.

4.3.18 LELICO support to assist members in preparing for modern services

The respondents were further asked what LELICO did to assist members to get ready for the provision of services associated with modern users needs. Regarding this question, the LELICO members seemed to have two different opinions. Some members believed LELICO provided training for member libraries in relation tothe latest developments in libraries and the use of ICT for improved services and also visited those libraries that were using electronic databases for the first time. On the other hand, other members stated that LELICO did not have the financial muscle unfortunately, to help libraries accelerate modern service delivery. Instead, they suggested that the only thing they could do was to provide an advisory role to member libraries. In turn, other members also suggested that members had to be committed and pay the membership fees so that they could enjoy the benefits offered by LELICO. The participants also suggested opening a LELICO office with full-time staff and that LELICO should update its website.

The South African respondents were asked what their consortia did to assist members to get ready for 21st-centuryservices. Regarding this question, the respondents suggested that SANLIC should negotiate deals continually that were affordable for institutions to enable them to provide resources to users at their point of need as well as by trying to negotiate lower rates for the library system. That will help to stabilise the rates that will help small libraries especially. Furthermore, it was suggestedthat consortiums should continue fostering strong relations in collaboration and by sharing resources. On another point, it was apparent that the staff interviewed did not have access to corporate memory regarding the assistance provided by consortia that no longer existed, and the matter was, therefore, not pursued further.

4.3.19 Migration from a card catalogue to 21stcentury service delivery

The interviewed librarians were also asked what advice they had for those libraries that have to migrate from a card catalogue to modern service delivery. All the respondents advised that one should learn from those that had implemented migration before to avoid making the same mistakes, thorough planning should be done, and money should be available to both start and to sustain the project. One respondent also added that the project should be carried out gradually to avoid mistakes. All the respondents agreed that it was indeed essential for libraries that had not automated their services to migrate to the automatedservices. At the same time, the automated libraries should improve their automation status so that they could rise to the next level and be regarded as relevant libraries.

The South African librarians were also asked what advice they had for someone who had to migrate from a card catalogue to 21stcentury service delivery. All the respondents concurred that they would encourage someone to migrate from the card catalogue to modern library services, as the card catalogue was outdated and one could do much more with the current systems. The following advice was given in response:

a) Clean-up of your records before migrating to an electronic system.
b) Make an inventory/do stocktaking to make sure that records that are loaded, are present physically.
c) Standardise or clean up records by assigning correct subject/ Dewey numbers to items, so that related items are groupedtogether.

d) Create or correct subject headings used to align with current standards and practices for example RDA.

4.3.20 Additional comments – new services

In turn, the interviewed participants were askedif there was anything else that they would like to be recordedwith regard to the previous questions. The member libraries of LELICO felt that it needed to improve. Among the concerns raised was that LELICO should not concentrate on academic libraries only, but should help all the other member libraries equally. In this regard, new blood is perhaps necessary. Enthusiastic librarians with the necessary expertise should be given a platform to take charge of LELICO activities. In that way, perhaps LELICO would become active again and organise workshops, meetings and conferences as it used to do in the past. The wish was expressed that Lesotho libraries would grow and turn into virtual libraries with information stored in the cloud, and LELICO was their hope to help them achieve that.

Given the situation with regard to the services that were already being offered, the South African respondents were asked how the institutions were expected to support the library to improve in the provision of those services. AL1 responded that staff training and development were crucial for providing a 21st century library service. She added that change management as well as marketing the adoption of new technological services was important. Lastly, access to relevant and new technology systems wereimportant,and funding was crucial to acquiring these. AL2 answered by agreeing with AL1by saying that the institution should provide more funding which would enable them to provide the best services. AL3was of the opinion that libraries needed to work with clients when designing programmes as clients always knew what they needed. The programme should not be designed in isolation without the input of clients.

4.3.21 Modern services already delivered using the current library system

It is difficult to think of all possibilities and options when asked what modern services were already available and, therefore, a handout (see Appendix F) was prepared prior to the interviews to be used for prompting. The respondents were asked to indicate which of those services had already been incorporated into their current library system (were already impacting on their service delivery). The responses are displayed in Table 4F.

Table 4F: Services currently provided by LELICO libraries

Characteristic	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12
Access to information captured in multi-media											X	
Accessibility from any convenient location						X						
Application programme interface (API's)												
Automated statistics on tap				X	X		X					
Cloud based storage					X							
Data and workflows into cloud infrastructure		X										
Direct access to research data		X					X					
Embedded multi-media in documents												
Fully integrated library back-office functions		X		X	X		X					
Harvesting of content												
Harvesting of identities												
Integrated/single search across several/all platforms				X								
Integration with mobile technologies												
Personalisation		X										
Personalised alerting services		X					X					
Personalised products												
Real-time online communication		X										
Resource sharing	X	X										
Rich full text online							X					
Seamless integration into virtual work environments												
Self-service												
Shared infrastructure												

Characteristic	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12
Shared OPACs												
Software-as-a-service (Saas) models												
Web services such as a recommender service		X					X					
Web-based interfaces for staff as well as clients		X										
Workflow automation		X										
Automated current awareness services (CAS)	X			X								
Online public access catalogue (OPAC)	X	X		X	X		X					
Reference services		X		X		X						
Digital and virtual library service							X					
Cloud computing					X	X						
Universal catalogue												
Client oriented services	X						X					

Legend	
	Fully automated
	Partially automated
	Not automated
	Service already
	Service not provided by

Where libraries had not automated (L9, 10 and L12), none of the more advanced services were available. One could say that this Table (4E) confirms the researcher's problem statement, namely, that for LELICO libraries to be regarded as 21st century libraries, they first have to start with the automation of their library services.

L2 (using LibWin) appears to be extremely proactive/progressivein terms of service delivery. The responses are capturedin Table 4H.The table also indicates that libraries, which are partially automated (L1, L2. L3, L8 & L11), do offer services for the new millennium but at an

extremely minimal phase. These libraries are yet to grow in terms of service delivery. However, LELICO is faced with the challenge of helping its member libraries to utilise ICT in all areas of their work. Ilo & Isiakpona (2015:26) maintain that 21st-century libraries derive certain benefits as a result of the ICT usage. The fewer members of LELICO utilise ICT, the fewer services regarded as services of the 21st century will be provided.It was anticipated that the South African service profile would differ somewhat from that of the libraries belonging to LELICO. The responses are displayed in Table 4I below.

Table 4I: Services currently provided by South African academic libraries

Characteristic	**AL1**	**AL2**	**AL3**
Access to information captured in multi-media	X		
Accessibility from any convenient location	X		
Application programme interface (API's)			
Automated statistics on tap	X		
Cloud-based storage	X		
Data and workflows into cloud infrastructure	X	X	
Direct access to research data		X	
Embedded multi-media in documents			
Fully integrated library back-office functions	X	X	
Harvesting of content			
Harvesting of identities			
Integrated/Single search across several/all platforms	X		
Integration with mobile technologies			
Personalisation	X	X	
Personalised alerting services	X	X	
Personalised products			
Real-time online communication		X	
Resource sharing	X	X	
Rich full text online			
Seamless integration into virtual work environments			
Self-service			
Shared infrastructure	X		

Characteristic	AL1	AL2	AL3
Shared OPACs	X		
Software-as-a-service (Saas) models	X		
Web services such as a recommender service		X	
Web-based interfaces for staff as well as clients	X	X	
Workflow automation	X	X	
Automated current awareness services (CAS)	X		
Online public access catalogue (OPAC)	X	X	
Reference services		X	
Digital and virtual library service	X		
Cloud computing	X		
Universal catalogue			
Client-oriented services	X		

Legend	
	Fully automated
	Partially automated
	Not automated
	Service already provided
	Service not provided by anyone

As indicated in Table 4I above, the respondent AL1 was making use of a more advanced system in terms of providing services regarded as modern services. The library software her library was using allowed the library to meet the needs of the users. Respondent AL2's library could also be regarded to have advanced services. The librarian from AL3 was not able to respond to the question. She clarified that it was not applicable to her line of work. However, she felt that her library needed to improve on some of its services.

4.3.22 Additional comments –service delivery

The last question was for the respondents to list any other aspects of service delivery that the researcher forgot to mention – if any. Only one respondent mentioned that Office 365 should have been discussedand that lecturers using that should share articles and class notes. Office 365 is a cloud-based subscription service that has integrated tools to support modern work. It combines applications such as Excel and Outlook with cloud services such as OneDrive and Microsoft Teams, accordingly, Office 365 allows anyone to create documents and datasets and to share these anywhere and on any device (Microsoft, 2018).

This means that lecturers and students at this specific institution were already familiar with technologies that allowed for advanced services. The library was currently using LibWin, which was fully integrated with Microsoft. It appeared to support some of the modern services.

The South African participants were also askedif there was anything else that they would like to have recordedwith regard to the previous questions. AL1 concluded by stating that adopting an electronic system not only streamlines services but also moves with the trends and takes library services to your library users in the format to which they are used. Again, the adoption of technology is growing, and this would make it possible for users to access the library from anywhere and at anytime at the point of need keeping the library relevant. In turn, AL2 closed by remarking that the future of libraries was bright. Computer skills are needed because everything in the new libraries revolves around computers. Even library schools are more focused on the use of computers in libraries, such as, effective electronic information retrieval, (Boolean logic).

Having gathered information from the libraries, it was seen as essential to speak to a selection of system vendors.

4. 4 Presentation of findings from the library system vendors

This section presents findings derived from the responses of the library system vendors. The researcher felt it necessary to include this population in the study because they play and will continue to play a significant role in the automation of Lesotho libraries. The interviews wereconducted via Skype.Again, the findings are presented in the sequence followed in the interview schedule (see Appendix E).

4.4.1 The strengths of the library system

The three system vendors were asked about the salient points of the library systems they were selling and they responded as follows: the first vendor (V1) indicated that their system was flexible and the users could customise it to suit their library needs. The other vendor (V2) indicated that theirs was cloud-based, multi-tenanted, scaled for the use ofWorldCat and, therefore, had alarge network for users. The third vendor (V3) mentioned that their system could integrate with a student management system as well as with a human resources management system used at universities.

The comment from V2 was of interest because, as was reported in section 2.3.3,"cloud-based technology has created an opportunity to work in a distributed network environment where repetitious workflows for data sharing can be removed" (Pace, 2018). This strength enables vendors to offer better services to their clientele at a reducedcost.

4.4.2 Primary competitors

The first vendor (V1) only mentioned two system vendors as their primary competitors, namely Universal Knowledge Software and Sabinet. They were both based in South Africa. The other vendor (V2) mentioned five competitors who were Ex Libris, III Sierra, Ebsco/Folio, Sirsi-DynixBlueCloud, and Wise's TLC III/Polaris. The third vendor (V3) listed Alma and Alpha, which are big competitors from America. She also added OCLC and Sirsi-Dynix.

It can be said that V1 had competitors who were only based in South Africa, while V2 had at least five competitors. These competitors are international companies and make use of cloud-based library systems (see Table 2C).

As was discussed in section 2.6.2, and is reflected in Table 4E vendor two V2 and vendor three V3 are large international companies, which, according to Breeding (2015b:23, 2012:11) and Lee (2012: 11) have developed fresh and completelynew products that offer true cloud computing solutions. They can also be modularised to suit the customer's needs.

4.4.3 Current users of the systems

Only two Lesotho libraries made use of the system belonging to V1. The vendor indicated that several libraries in South Africa are making use of their system. The examples provided were

research companies such as the CSIR, various universities (to manage their special collections), archives, religious institutions, schools, museums and various engineering firms such as Aurecon. The second vendor V2 did not support any Lesotho libraries, but did support one of the South African participants. The Medicine Hat College in Canada and the Liverpool School of Tropical medicine were also listed as customers. In Lesotho, the third vendor (V3) also supported one of the participants. Other libraries making use of this vendor outside Lesotho were the Universities of South Africa, Johannesburg, and the Witwatersrand, respectively. In fact,most of the universities in the South African provinces of Gauteng, the Free State and the Eastern Cape, as well as universities in Botswana and Namibia, are supported by vendor three V3.

One could say that both V2 and V3 supported libraries that had migrated to LSPs. These libraries were said to have been restructured to replace the technical skills that were previously required for laborious tasks that could now also be automated or managed from a remote location (see section 2.6.3 for Breeding's (2015a) opinion).Vendor one V1, as reported in Table 2B, can be regarded, according to Breeding (2009:2), as "an integrated library system organised into modules that address specific functions of the library. These modules include acquisition, cataloguing, circulation, serials control and an OPAC."

4.4.4 Services already incorporated in the current product

The services currently provided are indicated in Table 4J below.

Table 4J: Services currently provided by vendors

Characteristic	V1	V2	V3
Access to information captured in multi-media	X		X
Accessibility from any convenient location	X	X	X
Application programme interface (API's)	X	X	X
Automated statistics on tap	X	X	X
Cloud based storage	X	X	X
Data and workflows into cloud infrastructure		X	X
Direct access to research data	X	X	
Embedded multi-media in documents	X	X	X

Characteristic	**V1**	**V2**	**V3**
Fully integrated library back-office functions		X	X
Harvesting of content	X	X	X
Harvesting of identities	X	X	X
Characteristic	**V1**	**V2**	**V3**
Integrated/single search across several/all platforms		X	X
Integration with mobile technologies	X	X	X
Personalisation	X		X
Personalised alerting services	X		X
Personalised products	X		X
Real-time online communication		X	X
Resource sharing	X	X	X
Richfull text online		X	X
Seamless integration into virtual work environments	X	X	X
Self-service	X	X	X
Shared infrastructure	X	X	X
Shared OPACs	X	X	X
Software-as-a-service (SaaS) models		X	X
Web services such as a recommender service	X	X	X
Web-based interfaces for staff as well as clients	X	X	X
Workflow automation		X	X
Automated current awareness services (CAS)			X
Online public access catalogue (OPAC)	X	X	X
Reference services			X
Digital and virtual library service		X	X
Cloud computing		X	X
Universal catalogue			X
Client-oriented services			X

The responses are captured in Table 4I. V3had already integrated almost all the services regarded as modern services except for all those that had to do with the cloud, whereas,with regard toV2and V3, all the services had already impacted on their service delivery.

4.4.5 Time horizon for introducing new services

The first system vendor V1 would make provision for other elements based on the requests of the users. On the other hand, the second vendor V2 conformed to all the elements included butindicated that research was always conducted to see how they could improve further with regard totoservice delivery. In turn, the third vendor V3 uttered that they were busy working on something which they hoped would be released by the end of October 2018.

It is observed that system vendors, which fall under LSP, are continually conducting research to address the fundamental changes that libraries have experienced over the course of the last decade.

4.4.6 Additional aspects recorded

Blogs and social media, as well as RSS, feeds, research information management and research data management were put forward as other aspects of 21stcentury services that the researcher forgot to mention. The findings indicate that technology is not only extremely broad,but is also versatile. Therefore, vendors should be innovative enough to adapt to the fast-changing world of technology to meet modern users' needs.

4.4.7 Addressing the challenges experienced by libraries

All the vendors were readily available to address any challenges or introduce any new developments available on the market. However, they approached these aspects differently, for example, through user group training events that were free of charge and were presented on robust community platforms on which users connected with peers, collaborated, asked questions and gained insight. They also contributed and shared ideas to improve products and stay abreast of the announcements made.

4.4.8 System-specific support to provide 21stcentury services successfully

The three vendors had different opinions regarding this question. The first vendor V1) believed that users should implement their full system and get training on how to utilise it fully while the second vendor V2 believed that efficiencies introduced by the system would help users to create the capacity to do different things. These included time-saving in processing materials, budget-saving as well as creating new opportunities. Faisal (2008) and Obaseki (2014:63)

indicate, as cited in section 2.3.3, that selecting the right software is extremely important as the strength of the automation is mainly dependent on the quality of the system software. The third vendor V3 also concurred with the second vendor V2 that the efficiencies brought about by the system will surely help the library work towards achieving 21st-centuryservices successfully. Their library application (app) also, for example, allowed students to renew books with their cell phones. In addition, stocktaking can be done with the use of an iPhone.

4.4.9 The consortium's role in assisting vendors with 21st century services

There were three different opinions regarding this question. The first opinion was that the consortium aspect advantaged the client more than the vendor. The second opinion was that themore users of the system collaborated and understood their own needs, the more they could explain these to the vendors so that better services at a lower price could be negotiated. Importantly, Obaseki (2011:63) indicates, as cited in section 2.3.3, that the consortium was formed after it was realised that libraries could no longer be self-sufficient in respect of their own information resources to provide in the growing needs of their users. This is also in line with what Taole (2008) notes, as cited in section 2.8.4. She recommends that members of the consortium should not only rely on donations for funding and suggests that members should raise their own money through or by undertaking fundraising activities. She also stresses that libraries form a partnership to overcome the high costs of the library system and expertise. The third opinion was that libraries should have one point of access and share a catalogue. This statement also supports Obaseki's (2011:63) view regarding why the consortium came into existence.

4.4.10 Migration from a card catalogue to 21st-century service delivery

All the vendors agreed that migration from a card catalogue to new emerging services is beneficial for all. Migration is always an improvementwith regard to the service provision, provided all the necessary steps be adheredto (see section 2.3).

However, the three vendors warned that data integrity should be the most important aspect of moving over to the electronic environment. For example, libraries should start slowly and get used to the unfamiliar environment. According to vendor one V1, incorrect data capturing could mean the end of the library.

It was recorded (see section 2.3.5) that Ahenkorah-Marfo & Borteye (2010:6-7) observe that data entry conducted by the staff of the library is cheap and the number of errors made during the data entry process is low if quality control is maintained. While data entry companies will enter all the data in the databases within a shorter period, the data will require some corrections such as the eliminations of typing errors.

The second vendor V2 also remarked that it was felt that it was timeous to migrate to a new system at that time. She pointed out that the new systems avoided legacy applications that soiled services and data.

4.4.11 Additional information to share

One vendor stressed the importance of data integrity. She advised that things should be done correctly from the start. The other vendors did not have any additional input.

Automation, which eventually leads to libraries providing services that are valued, can take an extremely long time to achieve. As a result, thorough planning is crucial. A well-planned project will again enable an individual library to migrate to a moreadvanced system as time goes by. Therefore, automation can and will never be carried out overnight, (see section 2.3).

4.5 Conclusions reached

From the interviews conducted, it appeared that South African libraries proved to be larger than libraries belonging to LELICO. Based on this fact, it is concluded that it is feasible to expect that their services are also improved as compared toLesotho. South African libraries also seemed to have enough qualified staff to run their libraries. In Lesotho, the majority of libraries, except for one belong to LELICO, while in South Africa, it was established that all libraries belong to the consortium. Additionally, compared to Lesotho, SA has many consortia, and libraries are free to join those they feel will benefit their libraries. In Lesotho, there is only one consortium that accommodates different types of libraries. Examples of the most popular consortia in SA are SANLIC and CHELSA. Both LELICO members and the SA academic libraries have shown without reasonable doubt that it is necessary for libraries to be affiliated to professional collaboration initiatives. Even those libraries that are not affiliated to any consortium acknowledged the importance of being part of such collaboration.

While the members mentioned, among others, that being part of LELICO helped their libraries to improve their automation status, there are challenges facing LELICO, such as tight budgets, unqualified staff, and library systems, which are not effective. Financial constraints seemed to a challenge that affected both countries and impacted negatively on their service delivery. Besides a tight budget, libraries belonging to LELICO also have to face the situation where the modest funds that are available, are mismanaged by those in charge. There is also no support for some libraries from their institutions, and furthermore, the pace at which these libraries are heading towards the provision of 21stcentury services is slow. South African libraries participate in ILLs, and this helps them overcome some of the financial challenges because they are able to share their resources. It was revealed that the systems in use of libraries belonging to LELICO were not standardised and none could be regarded as a new generation library system. Only Innovative-Millennium/Innopac is a large integrated system. Many of these libraries are said to be either fully and/or partially automated. Only three libraries were not automated. The most popular systems in place were Inmagic Genie and the Libwin library management system. In contrast, in South Africa, the libraries have advanced automated systems and even use cloud-based services.

Both Lesotho and South African libraries generally had a good relationship with their vendors. Good relationships ensured that good technical support was received from the vendors. In terms ofthe systems used, all the libraries had had more than one library system. However, there were a few exceptions amongst libraries that were still using the same library system. New systems put in place, were regarded as more advanced than the previous systems. However, LELICO member libraries did not seem not to be satisfied with the services they currently provide. Some of the factors that contributed to that situation were money issues, the shortage of qualified staff, the provision of out-dated services and the lack of technology. They suggested that their libraries should engage more professional staff. There should also be a highly qualified IT section in libraries, Management should also provide support to libraries and make funds available. Vendors' support is also highly important as libraries which have a good support system from their vendors have proved to be fully automated.

LELICO tried its best to support its members to prepare for the 21stcentury services. However, it was hampered in this regard by insufficientfunds. Members even suggested that they could only give advisory support. It should also negotiate lower rates for the library system. Moreover, it should continue fostering relations in collaboration and share resources. The

respondents confirmed that migration from card catalogues to a modern library is long overdue. It was however advised that when the migration takes place, it should not be rushed as much can go wrong. An example that was given was when the vendor mentioned that incorrect data capturing could mean the end of the library. Since LELICO is a multi-type consortium, members were concerned that it should not only focus on academic libraries. Instead, it should cater for all types of libraries. The study further confirmed that libraries, which are not automated, cannot be regarded as 21stcenturylibraries. In order to automate, they first have to start with the automation of their services. If they do that, they will then be able to provide services such as cloud computing, as well as digital and virtual library services. Partially automated libraries have also been found to deliver fewer modern library services.

Systems vendors do provide some of the relevant services, including cloud-based services, the management of embedded multimedia in documents, the harvesting of both contents and identities, integration with mobile technologies and resource-sharing. Regarding the services these vendors have not yet provided to their clientele, it can be reported that they are continually conducting research to address those issues.

4.6 In summary

LELICO libraries, as the researcher established, are indeed lagging in terms of service provision. This fact wasconfirmed by the data collected from the three academic libraries in South Africa.

This study has also revealed that this laggard status is caused by factors such as a lack of money as well as a lack of professional staff to embark on library projects and a lack of support from the management. Lesotho libraries are also disadvantaged in that they belong to a consortium, which is financially challenged and, as such, fails to fulfil its mandate of ensuring that its members are fully conversant with the use of ICT.

Having realised what the *status quo* of LELICO members is and the reasons for their lagging behind in terms of service provision, the next chapter will focus on how to help LELICO member libraries by suggesting ways in which they can work towards implementing ICT in their libraries with the aim of providing relevant services.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The previous chapter presented, analysed and interpreted the data collected during the empirical research process. Interviews were conducted with staff from LELICO member libraries, purposively selected South African academic libraries as well as library system vendors. This chapter summarises the key findings from Chapter 4 (section 5.2). The literature reviewed for this study provides the necessary context. This chapter also makes recommendations to address the findings and to guide further research, (sections 5.3 and 5.4).

As stated in Chapter 1 (refer to section 1.5) the primary intention of this research was to document the gap between the *status quo* and the state of the art in library system-based service delivery at LELICO libraries. While acknowledging the anticipated resource constrained status of the selected libraries a second objective was to also identify the actions that can drive a strategy to help LELICO libraries become more relevant in terms of service delivery. To do so, it was necessary to establish the level of automatio,first, because modern services depend on a high level of automation. Once the *status quo* was established, the researcher formulated recommendations that could be used to devise a strategy for improving the services provided by LELICO libraries. Thiscould enable them to adapt and modernise their services so that they can become relevant in terms of current and future end-user requirements for service provision.

5.2 Research questions and summary of findings

It was assumedthat if Lesotho libraries had improved the *status quo* concerning automation since 2008, these libraries could have improved service delivery to their clients. As was mentioned in Chapter 1 (see section 1.3), this study intended to identify any inappropriate and even poor service delivery caused by a lack of automation in Lesotho libraries.

It was also anticipatedthat libraries in South Africa (see section 1.2) are already delivering on the services required of libraries with regard to serving the educated client. Benchmark interviews were therefore conducted with selected South African library staff (see sections 3.7 and 4.3 for more detail) with the aim or goal (see section 1.4) of identifying actions that could underpin a strategy to help LELICO libraries improve their relevancy to their users.

As was stated in section 1.4, the aim of the research was primarily to establish what the service delivery *status quo* was in LELICO member libraries. Once the *status quo* was known, the researcher formulated recommendations that these could be used by LELICO so that it could devise a strategy to assist member libraries to modernise their services.. To achieve this goal,certain research questions were formulated. The main research question: *What actions are required to ensure that LELICO libraries will remain relevant to the 21st-century library user* is addressed in section 5.4.

Sub-questions were formulated to work towards achieving the research goal. These sub-questions were:

i. Which services do modern patrons expect to receive from modern libraries?
ii. Which of the contemporary services are associated with an automated library system?
iii. What is the automation status of libraries that belong to LELICO?
iv. Are any of the identified "modern services" perhaps already delivered by LELICO libraries?
v. Which service improvements can be recommended for LELICO libraries?

The outcomes of each of these questions are addressed sequentially in the section that follows.

5.2.1 Services expected by modern patrons from modern libraries

This researcher has noted that the electronic age has changed and continues to change the work environment. In the field of librarianship, library users have changed their information seeking behaviour. As was stated in section 2.4, library patrons have more diverse needs and requirements now than what was previously the case. End users play a much more active role in collection building than what they did in the past. Libraries should be client-oriented, not collection focused. As a result, as shown in Chapter 2 (section 2.4), these modern patrons expect the following: client-oriented services, cloud-based storage and computing, digital and virtual library services, integration with mobile technologies, access to the collections in other libraries (universal catalogue), workflow automation, shared infrastructure and direct access to research data.

In section 4.3.7, Chapter 4 has further clarified why it is difficult, for the majority of the members, to provide the expected services. The reasons given included:

a) A lack of financial resources by both LELICO and institutions from which these libraries emanate.
b) A shortage of qualified staff.
c) Slow library systems.
d) Unreliable internet provision.
e) The failure to supply inter-library-loans was also identified as a major obstacle, which hinders LELICO member libraries from providing a relevant service.

5.2.2 Contemporary services associated with automated systems

The researcher has pointed out that the 21st century libraries are associated with the use of automated systems. These automated systems, as seen in Chapter 2 and complemented by the findings in chapter four, require some of the following factors to be fully operational: a reliable internet, library professionals who are conversant with ICT use, reputable system vendors and sufficient funds to start and to sustain the project. It is also clear that there is a need for consortia intervention to assist libraries to achieve successful automation.

The findings also reveal, with one exception, that LELICO member libraries are not yet able to provide emerging library services because of their automation status. They are still lagging behind except for one library, which seems to be extremely proactive in terms of service delivery (refer to section 4.1).

5.2.3 Automation status of libraries that belong to LELICO

There appears to have been an improvemensince 2008, in terms of automation in libraries that belong to LELICO. It was documented in Chapter 4 (see section 4.3.9) that new automation systems were put in place by some of these libraries. Some have introduced an automation system for the first time, while others have migrated to new systems (Table 4G). However, these improvements were insufficient because the study provides evidence that only some of the libraries provided a few of the services expected by users. Obviously, where libraries have not been automated,none of the advanced services areavailable.

When benchmarking with South African libraries,it was even clearer that Lesotho libraries are lagging behind with regard to service delivery because of the slow pace of automation. In contrast, South African libraries appear to be moving to cloud-based services to perform some of their functions. The library systems they use are also new generation systems, which give them the opportunity to provide some advanced services. Beside the automated systems, they are also equipped with large numbers of qualified (skilled) staff that are essential for the execution of advanced services. Furthermore, South African libraries are able to join two or more consortia, which give them access to a variety of services.

Benchmarking with these libraries was valuable because the staff interviewed could assist the researcher to identify the weaknesses of Lesotho libraries, and, at the same time, the researcher was able to suggest areas of improvement for libraries belonging to LELICO based on services that were already being provided to South African library users.

5.2.4 Modern services already delivered by the LELICO libraries

The results documented in Table 4H illustrate that LELICO member libraries, which are partially automated, do offer some modern services but are often only available at the start-up phase. It will require considerable effort to modernise libraries that have not yet automated. Accordingly, LELICO is faced with the challenge of assisting these libraries to improve their level of automation so that the provision of these modern services could be increased and, at the same time, beenhanced. Only one LELICO library is currently proactive in terms of providing the services needed by users. This library is fully automated and makes use of more advanced system functionality in terms of providing its services. This library could, therefore, serve as a benchmark to which other libraries can aspire.

5.2.5 Areas of service improvement for LELICO libraries

After successful benchmarking, the researcher could identify inadequacies in Lesotho's libraries. The most importantproblems that need to be addressed are the following:

a) LELICO libraries do not have the same level of service from its consortium as South African libraries do.
b) Members of LELICO do not yet understand the importance of sharing in libraries. Once they understand that, they will be able to help their consortia to fulfil their mandates.

c) Currently, LELICO services are far from satisfactory.
d) Libraries are not staffed by the same number of skilled librarians as South African libraries are.
e) Libraries in Lesotho are not independent and do not generate their own money. Furthermore, their dependency on government intervention is not working.
f) Libraries do not have strategies and plans that can help boost their level of service provision.

With these gaps in mind, it was, therefore, necessary to formulate recommendations that can be used to devise a strategy for LELICO, so that libraries can adapt and modernise their services so that they can become relevant in terms ofcurrent and future requirements for service provision as well as access to resources. These recommendations are discussed in section 5.5.

5.3 Conclusions reached

Based on the presentation of the main findings; the following conclusionswereformulated:

Libraries globally are no longer collection-oriented but are instead adapting in terms of being client focused. This shift enhanced library services to the extent that they are pressured to offer new services required by the users who demand a different level of service.

Libraries belonging to LELICO are striving to offer modern services. Despite the challenges faced by the libraries, these libraries seem to be adapting and are willing to embrace new technological changes in librarianship,but they often lack the finance and the skills to do so. For example, there is specificallyone LELICO library, which can be regarded as a new generation library. It is anticipated that this library could be used as a benchmark and that it would be able to help other LELICO libraries to improve their service delivery.

LELICO member libraries are not able to offer modern services because of the general lack of full automation. Once thestate of automation is enhanced, thelikelihood that they will be able to enhance service delivery will be improvedconsiderably.

Because libraries are no longer collection-focussed, the need to collaborate is bigger than ever before. LELICO has an extremely important role to play in ensuring that Lesotho libraries collaborate and address the combined needs of the Lesotho community of library

userstogether,Certainly, there is pressure on LELICO to adapt and refocus its services because it appears that the current organisation is not able to meet the needs of its members.

5.4 Recommended actions

Based on the discussions in section 5.2 and considering the conclusions reached in section 5.3, several actions are recommended that would underpin a renewal strategy for LELICO libraries. These are mentioned in the three sections below.

5.4.1 Recommended actions for LELICO

Recommendations for LELICO focus on expanding membership and building the capacity to update the services provided by all the member libraries. For obviousreasons, attention is also given to automation activities.

To appease its membership, LELICO should work toward delivering a more meaningful service to its current members. Once that is achieved, it could focus on expanding its membership

LELICO could consider a staffed or partially staffed office to improve levels of communication with and between members. The funding to do so will, of course, need to be negotiated with current members.

LELICO should remind the Lesotho libraries constantly that, unlike other consortia, it is a multi-library-type consortium and, therefore, all libraries are eligible to apply for membership. Accordingly, it is recommended that LELICO should continue attracting more members, even those outside Maseru. Alternatively, since all members of LELICO are only based in Maseru, Lesotho libraries should consider forming other consortium/consortia which will cater for the needs of libraries outside Maseru.

a) It is recommended that LELICO should review all its services to its members. Although they need to build on the existing strengths, there is a definite need to expand on the advice, workshops and information sharing activities.
b) LELICO should also mandate updates to its web presence so that the organisation will always have an up-to-date website.

c) LELICO should always be aware of the new developments in libraries so that it can encourage members and offer support to implement relevant services. This can be done by benchmarking other consortia globally.
d) LELICO should get involved in the effort to automate Lesotho libraries fully. This involves an investigation into alternative library systems, but it also requires thinking about processes that would fast-track automation.
e) Cloud-based solutions and collaborative automation activities and service provisionneed to be investigated as a priority.
f) LELICO could facilitate the development of an inter-library-loan system for its members, especially those who specialise in the same subjects.

It is, however, not only LELICO's responsibility to update the services offered. Libraries, themselves, also need to act.

5.4.2 Recommended actions for LELICO member libraries

Libraries, in the first instance, are the bodies responsible for providing relevant services. In turn, library managers have to ensure that action is taken.

a) LELICO libraries are far behind in terms of automation. Using technology more effectively should be giventop priority. In fact, based on the literature reviewed, automation has proven to be a prerequisite for offeringmodern services. Member libraries should therefore, find the ways and means to automate rapidly, or they will be closed down.
b) There is not enough money for every individual library to address its problems. Therefore, libraries will have to collaborate to make them all equally successful. Accordingly, library managers should investigate options and find ways of working together as a collective unit.
c) Lesotho libraries should employ librarians who are conversant with the use of emerging technologies and who will be able to interact with peers, library patrons and even system vendors on an equal footing.
d) LELICO libraries should consider having a common library system, facilitated and managed through LELICO, which should be able to cater for its needs, at an affordable price. It is further recommended that LELICO investigate the options linked to cloud-

based solutions. Making use of a cloud-based solution could fast-track library automation considerably. Such a solution may also be considerably cheaper than for each library to manage and maintain its own system.

It is not a vendor's role to make decisions on behalf of the library managers, but there are actions that they could take to ensure that library managers are better informed and better equipped to make the changes required. These are discussed in the section below.

5.4.3 Recommended actions for vendors

a) Good relationships between a vendor and its clients could be seen as an asset and should always be maintained. However, vendors need to look at a longer-term investment than the short-term sale of a small system. Lesotho libraries cannot afford to maintain several small systems not capable of providing additional functionality that allows modern services.
b) Systems vendors should, therefore, also conduct research in Lesotho so that their system offering could be adapted to address the fundamental changes that libraries have to incorporate in their service offering- while also keeping the challenges faced by resource-constrained libraries in mind.
c) Vendors could assist by focussing on consortium-level automation solutions and by providing such information to LELICO management.

Listing activities are only part of a process. The focus should be on placing these activities into a framework or strategy that will ensure progress. It is essential that the responsible stakeholders are required to perform certain actions and that these stakeholders then deliver on the requisite activity within the set timeframe. A first attempt at developing such a strategic framework is provided in the next section.

5.5. Suggested strategic framework

A strategy takes both the current and the desired situation into consideration. It also anticipates the time that it will take to get from the current situation to the desired state. The research conducted, clearly showed that Lesotho libraries are lagging behind in comparison with SA libraries, for example. Two of the most important reasons for the lag in service delivery are (1) the state of automation and (2) the inability to make use of alternative technologies to develop

new services that are linked to the skills levels. These observations have led to the identification of a number of actions that LELICO and the library managers would need to take (see section 5.4 above). It is anticipated that, realistically, a period of three years would be necessary to ensure that Lesotho libraries could address their situation.

The identified actions are tabulated below to provide some guidance with regard to the time frame as well as the responsibilities for each of the actions mentioned. Not all the actions identified in section 5.4 were included as some actions could blur the focus on automation and skills development.

Table 5A: Identified actions

Action to be taken	Who should act?	When should the action be taken?
Review (and expand on) the activities identified in section 5.4 of this document.	LELICO management Library managers	At the start of year 1
Investigate what would entice LELICO members to return.	LELICO management	Early year 1
Raise awareness regarding the LELICO membership model.	LELICO treasurer	Early year 1 (intensively) and then regularly on a continuous basis
Conduct a benchmarking study to see what services other consortia globally are doing for its members.	LELICO management	Early in year 1
Communicate a revised strategy to all member libraries.	LELICO management	Early year 2
Develop a skills development programme of activities and a workshop to raise the skill level of member librarians.	LELICO management in consultation with library managers	The second half of year 1
Implement a programme of activities and workshop to raise the skill level of member librarians.	LELICO management	The second half of year 2
Collaborate with the University of Lesotho to address weaknesses in the training programme for trainee librarians.	LELICO management	Early year 2
Update and maintain the LELICO website – it should be a reliable knowledge store for member libraries	LELICO management	Early year 1 with continuous updates
Investigate the options to improve communication with members. The feasibility of having a staffed LELICO office should also be considered.	LELICO management	Early year 1

Action to be taken	Who should act?	When should the action be taken?
Conduct a skills audit in all LELICO member libraries and share the information with LELICO management.	Library managers	The second half of year 1
Investigate the possibility of having a common library system that already allows for up-to-date functionality.	Library managers	Early year 1
Share updated information regarding available systems and system training with library managers.	LELICO management System vendors	Early year 1
Investigate the feasibility of making use of cloud-based services to fast track automation in the LELICO member libraries.	Library managers System Vendors	Early year 1
Come to a shared decision regarding a modernisation strategy for all LELICO members.	Library managers	Early year 2
Develop a detailed strategy to implement changes at each of the member libraries.	Library managers	Early year 3

5.6 Recommendations for further research

It is possible to identify a range of research projects that would align with the activities mentioned in section 5.4. The most important of these are listed below:

a) South African libraries have a range of consortia to join that have different mandates and libraries perform well after joining these diverse types of consortia. The researcher proposes that Lesotho libraries investigate what other types of consortia could benefit the country. Alternatively, LELICO could consider joining a South African consortium.
b) It is essential to understand what skills the modern library needs. A study that investigates the current level of skills in all the Lesotho libraries would be beneficial for all LELICO libraries as well as for the professional development of the librarians.
c) The Lesotho library users have not yet been asked about their information needs and service expectations. It would also be useful to establish what they see as their current and future needs for library services
d) The cost implications associated with a shared system for all Lesotho libraries could potentially also benefit all members. A cost-benefit analysis would be extremely useful.
e) New formats and planned new services all bring new challenges and new opportunities with them. Each of the formats (for example, e-Books, research data and multi-media

products) and each of the services (for example, self-service, cloud-based collection building and personalised alerting) could be investigated.

f) It appears that libraries that were not affiliated to any consortiumwere affected negatively in terms ofservice provision and the lack of motivation of staff members. This finding needs to be investigatedfurther.

g) It would perhaps be beneficial for the Lesotho library community if the suggested research were used todevelop skills among current employees. The research could also provide the necessary factual evidence to strengthen the proposed strategic actions.

5.7 In summary

LELICO member libraries have the potential to provide the services needed by modern library users. During the research phase, while interviews were being conducted, it became evident that library managers wanted to see change, but that they faced considerable challenges. In addition, a lack of financial resources appears to have caused a great deal of inertia. In this chapter, the most important findings and conclusions reached, provided the context for the actions identified and recommended for LELICO, library managers and system vendors. These actions were placed within a strategic framework to create some prioritisation and focus. Lastly, it was also possible to suggest further research that would support the outcome of this research.

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APPENDICES

APPENDIX A: **Informed consent form**

PARTICIPANT INFORMATION SHEET

Ethics clearance reference number: **2018 – CHS - 0040**

Research permission reference number (if applicable):

Date: 28. 05.2018

Dear Prospective Participant

My name is **Mamoeletsi Cecilia Monyane** and I am doing research with **Dr MJ van Deventer**, and **Prof TB van der Walt**, employed in the Department of Information Science, towards an MA Information Science, at the University of South Africa. We are inviting you to participate in a study entitled **Library automation as a prerequisite for 21st century library service provision for Lesotho Library Consortium member libraries.**

WHAT IS THE PURPOSE OF THE STUDY?

Learning, research and decision-making processes all require reliable, relevant and timeous information and it is not certain that Lesotho libraries are able to deliver on this mandate. I am conducting this research to establish what the level of service delivery is at libraries affiliated with the Lesotho Library Consortium (LELICO). I am specifically interested in those services linked to library automation. The research will also include a benchmarking exercise with two or three leading South African libraries. The objective is to suggest improvements and recommend actions to betaken by Lesotho libraries to ensure that they remain relevant in an environment where library patrons all make use of advanced information and communication technologies.

WHY AM I BEING INVITED TO PARTICIPATE?

Three groups of participants were identified to inform this research. These are:

- LELICO members – because these libraries need to stay relevant
- Library System Vendors – because they supply the systems that underpin relevant services

- South African Academic Libraries – because they have already implemented many of the modern services required by contemporary library patrons.

You were selected because you belong to one of these groups. You were either nominated by your institution or it was recommended that I ask for input from you because of your personal expertise.

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?

The study involves semi-structured interviews. Each interview should last for about 40 minutes.The questions to be asked relate to current and anticipated future library services. I am also interested in hearing your opinions and recommendations regarding the actions Lesotho libraries could take to remain relevant.

CAN I WITHDRAW FROM THIS STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?

Participating in this study is voluntary and you are under no obligation to consent to participate. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a consent form. You are free to withdraw at any time without giving a reason.

WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?

If the recommendations from this research are adopted, you will have made a contribution towards the improvement of library services in Lesotho.I'll be providing you with a list of all the modern library services that could be identified in the literature. I am not aware that such a complete list is freely available. You may keep the list for future reference.

ARE THERE ANY NEGATIVE CONSEQUENCES FOR ME IF I PARTICIPATE IN THE RESEARCH PROJECT?

No, none at all. You will not be identifiable as an individual participant and the data will be anonymised so that your institution could also not be identified.

WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?

Your name will not be recorded anywhere and no one will be able to connect you to the answers you give. Your answers will be given a code number or a pseudonym and you will be referred to in this way in the data, in any publications, or in other research reports such as conference papers. All information gathered will be anonymised. No part of this study will be linked to you personally, either directly or indirectlyand all the opinions expressed in this interview will be treated as confidential.

Your answers may be reviewed by people responsible for making sure that research is done properly, including the transcriber, external coder, and members of the Research Ethics Review Committee. Otherwise, records that identify you will be available only to people working on the study.

Please be aware that the anonymous data may be used for other purposes, such as a research report, journal articles and/or conference proceedings.

HOW WILL THE RESEARCHER(S) PROTECT THE SECURITY OF DATA?

If you give your permission, this interview will be recorded to aid with reliable notes for the record. This record will be shared with you if you wish. The recording will be destroyed after the dissertation has been examined. The research data will be kept in a secure cloud storage facility (Google Drive) for a period of five years and will then be destroyed.

WILL I RECEIVE PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?

There will be no form of incentive, this study is voluntarily.

HAS THE STUDY RECEIVED ETHICAL APPROVAL?

This study has received written approval from the Research Ethics Review Committee of theCollege of Human Sciences, Unisa. A copy of the approval letter can be obtained from the researcher if you so wish.

HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?

If you would like to be informed of the final research findings, please contact Mamoeletsi Monyaneat 00266 62121286 or email m.monyane@lce.ac.ls. The findings will be generally accessible after September 2019.

Should you have concerns about the way in which the research has been conducted, you may contact the supervisor Dr Martie van Deventer @ mvandeve2017@gmail.com**.**

You may also contact the research ethics chairperson of the Ethics Committee of the Department of Information Science, of which Dr Isabel Schellnack-Kelly is the chair. Her contact details are as follows: e-mail:schelis@unisa.ac.za, telephone number 012 429 6936 if you have any ethical concerns.

Thank you for taking time to read this information sheet and for participating in this study

Mamoeletsi Monyane

CONSENT TO PARTICIPATE IN THIS STUDY

I, _____ (your name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understand the study as explained in the information sheet.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty.

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential.

I agree to the recording of the interview.

I have received a signed copy of the informed consent agreement.

Participant Name& Surname…… (please print)

Participant Signature……..Date……

Researcher's Name & Surname…… (please print)

Researcher's signature……..Date……

APPENDIX B: Ethical clearance certificate

UNISA university of south africa

COLLEGE OF HUMAN SCIENCES RESEARCH ETHICS REVIEW COMMITTEE

15 August 2018

NHREC Registration # : Rec-240816-052
CREC Reference # : 2018-CHS-0040
Name : Mamoeletsi Cecilia Monyane
Student #: 45019096

Dear Mamoeletsi Cecilia Monyane

Decision:
Ethics Approval from 15 August 2018 to 14 August 2019

Researcher(s): Mamoeletsi Cecilia Monyane

Supervisor(s): Prof T. B. van der Walt
Department of Information Science
vdwaltb@unisa.ac.za

Dr M. J. van Deventer
vandeventer.martie@gmail.com

Library automation as a prerequisite for 21st century library service provision for Lesotho Library Consortium member libraries

Qualifications: Master of Information Science

Thank you for the application for research ethics clearance by the Unisa College of Human Sciences Research Ethics Committee for the above mentioned research. Ethics approval is granted for one year.

The ***low risk application*** was ***reviewed and*** **expedited** by the Chair of College of Human Sciences Research Ethics Committee on the 24th July 2018 in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.
The proposed research may now commence with the provisions that:

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1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the Department of Psychology Ethics Review Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
7. No field work activities may continue after the expiry date (**14 August 2019**). Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

The reference number **2018-CHS-0040** *should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Yours sincerely,

Signature : S. CASTTI

Prof AH Mavhandu-Mudzusi
Chair : CHS Research Ethics Commitee
E-mail: mmudza@unisa.ac.za
Tel: (012) 429-2055

Signature :

Professor A Phillips
Executive Dean : CHS
E-mail: Phillap@unisa.ac.za
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APPENDIX C: Interview schedule–LELICO libraries

INTERVIEW SCHEDULE FOR LELICO MEMBER LIBRARIES

Section A: BACKGROUND INFORMATION

1. What is the total number of staff in the library?
2. How many hold a formal qualification for the position they hold in the library?
3. Does your library have sufficient staff to execute the library mandate?
4. Are you member of the LELICO consortium?
5. If 'yes,' what value are you gaining from the consortia activities through LELICO?
6. If 'not anymore', then how do you compare your situation as LELICO members and as non-active members?
7. If 'no' why are you not a member?
8. If you replied 'no' to the benefits, of being a LELICO member, are you aware of the benefits of belonging to LELICO?
9. How does the support or information you get from LELICO enhance your automation status?
10. What are the most important challenges that you and your professional staff experience with regard to serving your clients?
11. Is there anything else that I should record?

Section B: LIBRARY AUTOMATION

12. Please tell me about the current state of automation at your library. Are you fully / partially automated or have you aborted attempts to automate?
13. If you have not yet automated, go to section D?

Section C: LIBRARY SYSTEM

14. What library system(s) are you currently using? If not automated, skip to the next section.
15. What relationship is there between the system vendor and your library?
16. Which system(s) was/were in operation before the current system(s)?
17. What services are you able to provide now that you could not do with the previous system?
18. Is there anything else that I should record?

Section D: SERVICES REGARDED AS 21st CENTURY LIBRARY SERVICES

We now need to discuss 21st century services. In the past libraries focused mainly on acquiring information resources (books and journals) and then organised these so that they could be made accessible. That is no longer sufficient. The library system should help both clients and staff to work faster and more effectively. The system should also provide better access to everything the library offers.

Could you now please refer to the handout that I have prepared.

Twenty-first century library services are characterised by aspects such as: software-as-a-service (SaaS) models, data and workflows into cloud infrastructure,cloud-based storage, web-based interfaces for staff as well as clients, personalisation, personalised alerting services, personalised products, embedded multi-media in documents, shared OPACs, full text online, accessibility from any convenient location, access to information captured in multi-media, and integrated/single searches across several/all platforms. Other aspects are direct access to research data,integration with mobile technologies, seamless integration into virtual work environments, APIs, the harvesting of content, the harvesting of identities, real-time online communication, workflow automation, self-service, resource sharing, automated statistics on tap, web services such as a recommender service, shared infrastructure as well as fully integrated library back-office functions.

14. From a managerial perspective, are you happy with the services your library currentlyprovides?

15. If not, how can the services you are currently providing be enhanced?

16. From a managerial point of view, how could your institution help your library to provide21stcentury servicessuccessfully?

17. From a managerial point of view, how could your consortium help your library (and other consortia members) to provide servicessuccessfullyin the future?

18. What does LELICO currently do to assist members get ready for modern services?

19 What advice do you have for someone who has to migrate from a card catalogue to 21st century service delivery?

20. Is there anything else that I should record?

21. Which of theservices on the handout are already incorporated in your current library system (already have an impact on your service delivery)?
22. Which of the services listed should address the current challenges experienced in the future, but are not already possible through your current system?
23. What other aspects of 21st century services did I forget to mention – if any?
24. How is your system vendor planning to address the challenges you are experiencing?

CLOSING

Thank you for your time! Would you mind if I contact you again should I need to do so?

I'll prepare the interview notes for the record and let you have a copy before <add date>. You would be able to make changes or add detail to the notes for the record as long as the changes are back with me before <add date>.

APPENDIX D: Interview schedule– selected libraries in South Africa

INTERVIEW SCHEDULE FOR SELECTEDLIBRARIES IN SOUTH AFRICA

Preamble

The Lesotho Library Consortiumis known as LELICO and it is very similar to what Gaelic or Frelico are in South Africa. All LELICO libraries have not yet been automated. I believe that we would not be able to provide relevant services in future if we, as librarians, do not fasttrack automation with the future in mind. With that in mind, I would like to identify the really important issues that we need to address so that we can leapfrog our automation activities. I need your input to help me develop priorities with regard to developing the required strategies.

Section A: BACKGROUND INFORMATION

1. How many qualified staffare employed by your library?
2. What changes do you envisage in the staff complements over the next five (5) to ten (10) years?
3. In which consortia does your library participate?
4. Are you getting value from the consortia activities?
5. What are the most important challenges that you and your professional staff experience when serving your clients?
6. How do other consortia members address these challenges?
7. Is there anything else that I should record?

Section B: LIBRARY SYSTEM

8. Which library system(s) are you currently using?
9. What relationship is there between the system vendor and your library?
10. Which system(s) was/were in operation before the current system(s)?
11. Which services are you able to provide now that you could not offer with the previous system?
12. Is there anything else that I should record?

Section C: SERVICES REGARDED AS 21st CENTURY LIBRARY SERVICES

We now need to discuss 21st century services. In the past, libraries focused mainly on acquiring information resources (books and journals) and then organising these so that they could be made accessible. That is no longer sufficient. The library system should help both clients and staff to work faster and more effectively. The system should also provide better access to everything the library offers.

Please refer to the hand-out that I have prepared.

Twenty-first century library services are therefore characterised by aspects such as: software-as-a-service (SaaS) models, data and workflows into cloud infrastructure,cloud based storage, web-based interfaces for staff as well as clients, personalisation, personalised alerting services, personalised products, embedded multi-media in documents, shared OPACs, full text online, accessibility from any convenient location, access to information captured in multi-media, and integrated/single searches across several/all platforms.Other aspects are direct access to research data,integration with mobile technologies, seamless integration into virtual work environments, APIs, the harvesting of content, the harvesting of identities, real-time online communication, workflow automation, self-service, resource sharing, automated statistics on tap, web services such as a recommender service, shared infrastructure as well as fully integrated library back-office functions.

13. Which of these are already incorporated in your current library system (already impact on your service delivery)?
14. Which of these should address the current challenges experienced in the future but are not already possible through your current system?
15. What other aspects of21st century services did I forget to mention – if any?
16. How is your system vendor planning to introduce these solutions to your challenges?
17. From a managerial point of view, how could your institution help your library to provide 21stcentury servicessuccessfully?
18. From a managerial point of view, how could your consortium help your library (and other consortia members) to provide 21stcentury servicessuccessfully?

19. What advice do you have for someone who has to migrate from a card catalogue to 21st century service delivery?
20. Is there anything else that I should record?

CLOSING

Thank you for your time! Would you mind if I contact you again should I need to do so?

I'll prepare the interview notes for record and let you have a copy before <add date>. You will be able to make changes or add detail to the notes for the record as long as the changes are back with me before <add date>.

APPENDIX E: Interview schedule - library system vendors

INTERVIEW SCHEDULE FOR LIBRARY SYSTEM VENDORS

Preamble

The Lesotho Library Consortiumis known as LELICO and it is very similar to what Gaelic or Frelico are in South Africa or to other consortia internationally. All LELICO libraries have not yet been automated. I believe that we would not be able to provide relevant services in future if we, as librarians, do not fasttrack automation with the future in mind. Against this background, I would like to identify the important issues that we, as LELICO libraries, need to address so that we can leapfrog our automation activities. I need your input to help me create priorities with regard to developing the strategy.

Section A: BACKGROUND INFORMATION

1. What would you regard as the strengths of the library system you are selling?
2. Which vendors do you see as your primary competitors?
3. Please give me some examples of libraries making use of your system – it would be especially useful if one of the Lesotho libraries could be mentioned.

Section B: SERVICES REGARDED AS 21st CENTURY LIBRARY SERVICES

We now need to discuss 21st century services. In the past, libraries focused mainly on acquiring information resources (books and journals) and then organised these so that they could be made accessible. That is no longer sufficient. The library system should help both clients and staff to work faster and more effectively. The system should also provide better access to everything the library offers.

Please refer to the handout that I have prepared.

Twenty-first century library services are characterised by aspects such as: software-as-a-service (SaaS) models, data and workflows into cloud infrastructure,cloud based storage, web-based interfaces for staff as well as clients, personalisation, personalised alerting services, personalised products, embedded multi-media in documents, shared OPACs, full text online, accessibility from any convenient location, access to information captured in multi-media, and integrated/single searches across several/all platforms. Other aspects are direct access to research data,integration with mobile technologies, seamless integration into virtual work environments, APIs, the harvesting of content, the harvesting of identities, real-time online communication, workflow automation, self-service, resource sharing, automated statistics on tap, web services such as a recommender service, shared infrastructure as well as fully integrated library back-office functions.

4. Which of these are already incorporated in your library system?
5. When are you planning to make provision for the other elements?
6. What other aspects of 21st century services did I forget to mention – if any?
7. How does your company plan to introduce new solutions to the challenges experienced by libraries?
8. From a vendor point of view, how could your system help a library to provide 21stcentury servicessuccessfully?
9. From a vendor point of view, how could our consortium help you, to help us provide 21stcentury servicessuccessfully?
10. What advice do you have for someone who has to migrate from a card catalogue to 21st century service delivery?
11. Is there anything else that I should record?

CLOSING

Thank you for your time! Would you mind if I contact you again should I need to do so?

I'll prepare the interview notes for the record and let you have a copy before <add date>. You will be able to make changes or add details to the notes for the record as long as the changes are back with me before <add date>.

APPENDIX F: Twenty first century library services

SERVICES REGARDED AS 21st CENTURY LIBRARY SERVICES LINKED TO THE LIBRARY SYSTEM

An alphabetical list of 21st century library services with definitions is provided for your convenience. Please refer to these when responding to relevant questions during the interview.

Characteristic	Description / Definition / Explanation
Access To Information Captured In Multi-Media	The library system provides access to information captured in multi-media. The item can be recorded and played, displayed, interacted with or accessed by information content processing devices, such as computerised and electronic devices, but can also be part of a live performance. Source: https://www.webopedia.com/TERM/M/multimedia.htm.
Accessibility From Any Convenient Location	This is the extent to which users can obtain a good service at the time it is needed and at a place of their choice. Source: https://www.businessdirectory.com/definition/accessibility.html.
Application Programme Interface (API's)	A way computer programs 'talk' to one another. It can be understood in terms of how a programmer sends instructions between programs. Source: https://www.opendatahandbook.org/glossary/en/terms/application-programming-interface.
Automated Current Awareness Services (CAS)	A current awareness service is a process whereby the library informs its users of the newly acquired resources. In the past the information was made available to the users through telephone calls, letters, library bulletins and email messages. Today library users can have information

Characteristic	Description / Definition / Explanation
	on their mobile devices, electronic mails and some social network media. Apart from that, the acquisition librarian can also make this information available by displaying them on the library website. Library users are keep up to date with information by providing them with an option of accessibility without the client having to come to the library and without the librarian's intervention. Instead, the library user can access information remotely, that is, electronically and in the comfort of their homes or offices.
Automated Statistics On Tap	Automated statistics on Tap or auto stats tap in short is a feature that helps automate statistics collection and provides intelligence surrounding statistics management. Source: https://downloads.teradata.com/viewpoint/trainning/automated-statisticmanagements.
Client oriented services	The most important characteristic of the 21st century library is that it is client focussed instead of being library or library collection focussed. Effective librarians of the 21st century therefore, need to have extensive computer expertise to enable them to deliver client oriented services. If they do not become experts in the new technologies, the library becomes dependant on what it feels is right for the users and not on what it knows the users need.
Cloud Based Storage	Cloud computing provides an alternative for institutions to manage their databases or software without providing their own information technology infrastructure for storage. There is no need for local servers or local backups and local upgrades as information is stored on the cloud where one service provider could host the hardware and perform the necessary services for several libraries. A cloud platform is intended for

Characteristic	Description / Definition / Explanation
	elastic scalability and reduces cost by providing guaranteed data storage resources to complete jobs in real time
Cloud computing	Just as is the case for other professions, cloud computing is said to help libraries shift from owning and operating local servers to web based services, (Webber,2010:4). It provides technical infrastructure and services to those who do not own their own infrastructure or do not own relevant IT skills.
Data and Workflows Into Cloud Infrastructure	Workflow and cloud computing are said to be two main components developed in the system to date. Workflow again is considered an essential technique in the implementation of automation, and dynamic decision-making process through contextualization and analysis of real time data. Due to the capability to build flexible and complicated application each user application service is expressed in a workflow.
Digital and virtual library services	The library is not necessarily a physical space anymore. That is they are not confined to a particular location. This is because they allow users to access information remotely. The idea of adopting library automation is essentially to take advantage of the technologies and make the libraries visible worldwide. Such libraries provide patrons with digital and virtual library services. A virtual library which is also called library without walls, could be defined as a system of organised collection of multimedia data globally available through networked computers.It is important to note that only library resources that are available in electronic format, such as online databases, electronic journals, and electronic books,can be accessed through a digital or virtual library. This service gives library users access to material without being restricted by space and time.

Characteristic	Description / Definition / Explanation
Direct Access To Research Data	Direct access to research data means the ability to obtain data by going directly where it is physically located (from research participants) than by having to sequentially look for the data at one physical location after another. Participant's access to raw data could be a helpful mechanism to increase transparency in any study. Source: https://www.nap.edu/catalog/11434/expanding-access-to-research-data.
Embedded Multi-Media In Documents	When designing a web page, an embedded file refers to any type of multimedia file that you might insert, or embed into the webpage. This includes files like graphics and sound files. Source: https://developer.mozilla.org/en-US/docs/Learn/HTML/Multimedia-and-embedding.
Federated Identity Management	Federated identity management (FIM) is an arrangement that can be made among multiple enterprises that lets subscribers use the same identification data to obtain access to the networks of all enterprises in the group. The use of such a system is sometimes called identity federation. Source: http://searchsecurity.techtarget.com/definition/federated-identity-management
Fully Integrated Library Back-Office Functions	Libraries, because of the repetitive nature of many of their tasks (back office functions) may benefit from automation. Integration refers to the coordination between library system and back office functions. Back office functions include processes used by employees that help keep the library operating. Cataloguing and acquisition are examples of back office systems. These back office systems can be manual or automated. Example of integration is fully integrated online system.

Characteristic	Description / Definition / Explanation
	Source: https://www.onebusiness.ca/sites/default/files/MEDI-Booklet-Back-Office-Systems.
Harvesting Of Content	The process by which internet data (public access content) is monitored, collected, organised and delivered. Source: http://www.connotate.com/5-ways-web-content-harvesting-can-improve-competitive-intelligence.
Integrated/Single Search Across Several/All Platforms	A platform that has an open API set, which allows for integration with various platforms. This gives the end user the ability to search across multiple platforms through one intelligent interface. Source: http://www.oclc.org/en/worldshare-management-services.html.
Integration With Mobile Technologies	Mobile technologies are offering libraries a new world of opportunities to engage patrons. Mobile integration involve the integration into an enterprise infrastructure of mobile devices such as cell phones, "crack" berries, pagers and other mobile devices. Source: https://www.ebizq.net/topics/mobile-integration.
Online Public Access Catalogue (OPAC)	The Online Public Access Catalogue (OPAC) is a service that characterises the modern library system. These services allows library users to access the library catalogue in offices, classrooms or anyplace provided the computer terminals in the organisation or library are linked together and are connected to the internet. The Online Public Access Catalogue serves as an index to the collection available in the library. For 21st century service the OPAC is characterised by easy access for clients not only to the host library's holdings but also to the holdings of several other libraries. Not only to paper collections but also to full text documents. Not only to traditional documents but also to multi-media

Characteristic	Description / Definition / Explanation
	embedded in very smart documents. They can access the information available in the catalogue anywhere, as long as there is internet availability. They could also use a variety of devices (computers, tablets as well as other mobile devices) to access the collection and they are able to embed an access point to the catalogue in their own work environments – such as virtual research environments.
Personalisation	A number of emerging technologies including mobile phones and services, online shopping and portals, and games are designed to provide users with control over appearance and functions. Understanding why users personalise could help design personalisation features so that they promote the acceptance and adoption of information and communication technology. Personalisation therefore is a pervasive phenomenon in all human activity, encompassing decoration, re-configuration, modification, customisation and tailoring of human-made objects like cars, jewellery, clothes, houses, workplaces, tools and software – also of library interfaces. People have created whole cultures of personalisation like wine tasting, fashion where choices express the individual tastes and personalities of its members. Source: https://academic.oup.com/iwc/article20/1/1/845963.
Personalised Alerting Services	See automated current awareness services.
Real-Time Online Communication	Real time online communication is virtually any online communication that provides a real time or live transmission of text messages from sender to receiver. A variety of software programs are available to enable real time chat between individuals using internet services.

Characteristic	Description / Definition / Explanation
	Source: https://americanlibrariesmagazine.org/?s=Real-Time+Online+Communication+ .
Reference services are always accessible	Reference services involve the activity of a reference librarian who can give individualised or personalised assistance to library users in order to satisfy their information needs. The 21st century library offer this service in electronic format, 24/7 - in which case the library users do not have to physically be in the library to interact with the reference librarian. The librarian and the library user can communicate virtually or electronically through mails, social network sites, text messages, instant messages and chats. In addition the library provides access to a network of librarians, located in different time zones, so that there is always someone who could assist with queries.
Resource Sharing	In the library world, resource sharing means that you are collaborating with one or more libraries to maximise access to a larger array of resources by sharing the collections of the cooperating libraries or pooling funding to purchase shared digital resources e.g interlibrary loan. Source: http://www.oclc.org/en/worldshare-ill-html.
Rich Full Text Online	In rich full text online users can use a variety of options to format the text that they enter online. For example one can apply a different font or character style to the text online or even insert a table. Source: https://support.office.com/en-us/article/Enable-or-disable-full-rich-text-format.
Seamless Integration Into	Gone are the days when workplace was merely a physical space employees occupied during regular office hours. Today's always

Characteristic	Description / Definition / Explanation
Virtual Work Environments	connected instant access environment has blurred the lines between the physical office and the place where work actually happens. Source: http://www2.deloitte.com/content/dam/Deloitte/MX/Documents/human-capital/
Self-Service	Self-service library means where patrons are able to carry out library services without the help of library staff. Libraries are encouraged to use software and devices that grants customers self-service use of the library outside normal working hours. Source: http://americanlibrariesmagazine.org/...bibliothecal-gap-self-service-experiment/
Shared Infrastructure	Libraries share the infrastructure (and services) necessary to provide their patrons with products and services. In doing so they save money, staff time and able to offer new functionality. This in turn, provides them with opportunities to take on new projects. Source: https://oclc.org/en/worldshare-management-services.html.
Shared OPACs	With the arrival of the internet, most libraries have made their OPACs accessible from a server to users all over the world. It is now possible for libraries to share the same OPAC. Source: https://americanlibrariesmagazine.org/the-relevance-of-relevant-relevance/
Software-As-A-Service (Saas) Models	An arrangement made with Integrated Library System vendors where the vendor hosts the library's data on their equipment to save the library hardware costs. The library uses their database through the internet and is no longer responsible for software updates or maintenance

Characteristic	Description / Definition / Explanation
	themselves. The vendor provides the technical services and the library can concentrate on the content that is created or managed by the library.
Universal catalogue	A universal or union catalogue is a list of the holdings of all the libraries in a particular library system. Also, a listing of all or a portion of the collections of a group of independent libraries, indicating by name and/or location symbol which libraries own at least one copy of each item. When the main purpose of a union catalogue is to indicate location, the bibliographic description provided in each entry may be reduced to a minimum, but when it also serves other purposes, description is more complete. The arrangement of a union catalog is normally alphabetical by author or title. An example of a union catalogue is available at: Source: http://www.classify.oclc.org/classify2/classifyDemo?wi=5802111385.
Web Services Such As a Recommender Service	Web services are loosely coupled software systems designed to support interoperable machine to machine interaction over a network. E.g the web service uses various characteristics of a sample work, such as classification numbers, subject headings and genre terms to provide a list of related works found in Worldcat. The list recommendations may include books, e-books, audiobooks, music and video. Source: https://www.oclc.org/developer/develop/web-services/worldcat-recommendations.
Web-Based Interfaces For	In computing, an interface is a shared boundary across which two or more separate components of computer system exchange information. The exchange can be between software, computer hardware, peripheral devices, humans and combinations of these.

Characteristic	Description / Definition / Explanation
Staff As Well As Clients	Source: https://americanlibrariesmagazines.org/.../library-systems-report-2014/
Workflow Automation	Workflow is the definition, execution and automation of business processes where tasks, information or documents are passed from one participant to another for action according to a set of procedural rules. Source: https://www.oclc.org/en/tipasa/resources.html.