EVALUATION OF THE INNOPAC LIBRARY SYSTEM IN SELECTED CONSORTIA AND LIBRARIES IN THE SOUTHERN AFRICAN REGION: IMPLICATIONS FOR THE LESOTHO LIBRARY CONSORTIUM

By

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DECLARATION

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I declare that

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Ms Nthabiseng Taole Date

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ABSTRACT

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Resource sharing is considered to be one of the most important pillars of library service, because no single library can meet all the needs of its users. Libraries have always cooperated to meet the increasing demands of users by sharing their resources. In the past few decades, the need to establish library consortia emerged more strongly as libraries began to take advantage of technology to improve access to information and service delivery.

There has been a notable increase in the formation of library consortia on the African continent. South Africa has taken the lead both in the amount of established consortia and the number of member libraries within them. This development accompanied the implementation of common library systems in consortia, where a single system is adopted by all member libraries. In the Southern African region, the library system called INNOPAC/Millennium Pac has already been adopted by consortia and libraries in Botswana, Mozambique, Namibia, South Africa, and Zimbabwe. The recently-established Lesotho Library Consortium (LELICO) also recognized the need for a comprehensive investigation to identify a common system that will effectively meet the needs of its member libraries.

The purpose of this study was to analyze the successes and limitations of the INNOPAC library system operating in consortia and libraries in the Southern African region, in order to assess its suitability for LELICO. The study focused on two South African consortia (The Gauteng and Environs Library Consortium – GAELIC, and The Free State Library and Information Consortium - FRELICO), two university libraries (Namibia and Zimbabwe) and one agricultural college library (Botswana) in the Southern African region that use the system. A special emphasis was the criteria of assessment that would apply to a small, multi-type

consortium in a developing country like Lesotho. Data was collected through a literature search, questionnaires, interviews, site visits, and analysis of policy and institutional documents. The target groups of the study were the library managers, system managers, and library professionals of selected GAELIC and FRELICO libraries, and the system managers of the three selected libraries in the region.

The study found that the INNOPAC library system is performing satisfactorily in the chosen consortia and libraries, and that it has a positive impact on them. It performed to a high standard in all the key areas, and this may be attributed to keeping abreast of the latest developments in the library world, and offering a range of services that meet the needs of libraries. The study found further that the INNOPAC library system contributed towards increased productivity, improved customer services, and better decision making in the two consortia. However, direct access to members' holdings was restricted by a decentralized server model adopted by these consortia.

This and other lessons shaped a proposal for the implementation and management of the INNOPAC library system in LELICO. A proposed model recommends a central server as a more cost-effective management solution. The model also explains the mode of operation by member libraries and the coordinated structures that would implement and manage the INNOPAC library system, adapted to the specific requirements of a small, multi-type consortium in a developing country like Lesotho. Given its successful performance in consortia and libraries across Southern African countries, the study recommends further research into the advantages and challenges of INNOPAC for wider regional library cooperation.

KEYWORDS:

Information and communication technologies

Information management

Information retrieval systems

Library consortia

Library co-operation

Library systems

Library system evaluation

Resource sharing

INNOPAC

Lesotho Library Consortium

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LIST OF ABBREVIATIONS

AACR2	–	Anglo-American Cataloguing Code, Second Edition
ABINA	–	Asociacion de Estados Iberoamericanos para el Desarrollo de las Bibliotecas Nacionales de Iberoamerica
ACURL	–	Association of Caribbean University Research and Institutional Libraries
ALA	–	American Library Association
AR	–	Agricultural Research
ARL	–	Association of Research Libraries
BCA	–	Botswana College of Agriculture
CALICO	–	Cape Library Consortium
CALIS	–	China Academic Library and Information System
CD-ROM	–	Compact disc read-only memory
CERNET	–	China Education and Research Network
ChinaGBN	–	China Golden Bridge Network
ChinaNet	–	China Network
CLSI	–	CL System Inc.
CSTNet	–	China Science and Technology Network
CUP	–	Committee of University Principals
CURL	–	Consortium of University Research Libraries
CUT	–	Central University of Technology
DANIDA	–	Danish International Development Assistance

DDC	–	Dewey Decimal Classification
DELNET	–	Delhi Library Network
ELP	–	Electronic Library Project
ESAL	–	Eastern Seaboard Association of Libraries
ERM	–	Electronic Resource Management
FOTIM	–	Foundation of Tertiary Education Institutions in the Northern Metropolis
FRELICO	–	Free State Library and Information Consortium
GAELIC	–	Gauteng and Environs Library Consortium
GISW	–	GAELIC INNOPAC System Workgroup
Gcats	–	GAELIC Cataloguing and Technical Services Workgroup
ICOLC	–	International Coalition of Library Consortia
ICTs	–	Information Communication Technologies
IDM	–	Institute of Development Management
I I I	–	Innovative Interfaces Inc.
INDEST	–	Indian National Digital Library in Science and Technology
IT	–	Information Technology
ITS	–	Integrated Tertiary Software
IUG	–	Innovative User Group
IUG: SA	–	Innovative User Group: Southern Africa
IULC	–	Inter-University Library Committee
JANET	–	Joint Academic Network
LAC	–	Lesotho Agricultural College

LAN	–	Local Area Network
LARRP	–	Latin Americanist Research Resources Project
LCE	–	Lesotho College of Education
LELICO	–	Lesotho Library Consortium
LHDA	–	Lesotho Highlands Development Authority
LIPAM	–	Lesotho Institute of Public Administration and Management
LNLS	–	Lesotho National Library Service
LP	–	Lerotholi Polytechnic
LPPA	–	Lesotho Planned Parenthood Association
MARC	–	Machine-readable Cataloguing
MEDUNSA	–	Medical University of Southern Africa
NASTLIC	–	National Scientific and Technology Library and Information Centre
NUL	–	National University of Lesotho
OCLC	–	Online Computer Library Center
OPAC	–	Online Public Access Catalogue
OSISA	–	Open Society for Southern Africa
NUST	–	National University of Science and Technology
PJ	–	Palace of Justice
PL	–	Parliament of Lesotho
PU for CHE	–	Potchefstroom University for Christian Higher Education
RAU	–	Rand Afrikaans University
SABINET	–	South African Bibliographic and Information Network
SADC	–	Southern African Development Community

SAIS	–	Southern African Interlending Scheme
SAMARC	–	South African Machine Readable Catalogue
SCONUL	–	Standing Conference of National and National and University Libraries
SDC	–	System Development Corporation
SEALS	–	South Eastern Academic Libraries System
SMTP	–	Simple Mail Transfer Protocol
SPSS	–	Statistical Package for Social Scientists
TCP/IP	–	Transfer Control Protocol/Internet Protocol
TUT	–	Tshwane University of Technology
UCEW	–	University College of Education at Winneba
UDS	–	University for Development Studies
UFS	–	University of the Free State
UNAM	–	University of Namibia
UNIN	–	University of the North
UNISA	–	University of South Africa
U.K.	–	United Kingdom
UP	–	University of Pretoria
USA	–	United States of America
USMARC	–	United States Machine-readable cataloguing
UST	–	University of Science and Technology
WAM	–	Web Access Management
WAN	–	Wide Area Network

WCLC – Western Cape Library Cooperation

WCTIT – Western Cape Tertiary Institutions Trust

ZULC – Zimbabwe Universities Library Consortium

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

Libraries around the world face many challenges. These include acquisition of an ever-increasing number of resources, inadequate budgets, and changing user needs and expectations. Providing good quality services has always been a special aim of academic and research libraries, and libraries have traditionally responded to these challenges through collaboration. Library co-operation has been in existence for a long time and involves sharing resources through activities such as inter-library lending and document delivery, co-operative cataloguing, and the exchange of staff. For example, Bostick (2001) traces the literature on library co-operation to the 1880s. Interlibrary lending is one of the oldest and most common forms of co-operation, involving sending requests via traditional modes of communication like the postal service. With technological developments and the introduction of library systems, libraries have changed their mode of operation to maximise access to resources. The need for formal modes of partnership, such as library consortia, became more pressing as budgets shrank and the need for access to information grew.

Recently, there has been rapid growth in library networks, with a total of 422 networks or consortia identified in the United States of America (USA) and Canada, as reported by the American Library Network (Woodsworth and Wall, 1991). Albeit at a slower pace, African libraries also established consortia, with the Republic of South Africa ranking high with five library consortia (Jalloh: 1999). The benefits of a consortium include cost-

reduction, enhanced and increased usage of resources, improved inter-library loan services and more effective negotiation with publishers (Kopp, 1998; Allen and Hirshon, 1998; Nfila, 2002; Woodsworth and Wall, 1991).

Academic libraries have been at the forefront of co-operative activities, as noted by Woodsworth and Wall (1991). This is because academic libraries strive to make resources available for teaching, learning, and research purposes. They also continually review their roles in information provision as challenges continue to emerge. Adams (1986) and Jordan (1998), for example, agree that factors such as increased student enrolment, a decline in library expenditure, increased prices of books and journals, and an increase in students studying off-campus have pointed to the need for academic libraries to examine their roles and how they can contribute meaningfully to developments in higher education.

South African academic libraries have also been affected by such changes brought about by technology, reduced funding and current global economic trends. Library consortia have been established in many parts of the country. According to Darch and Underwood (1999), there are five major library consortia in South Africa, namely:

- Cape Library Consortium (CALICO);
- Eastern Seaboard Association of Libraries (eSAL);
- Free State Libraries and Information Consortium (FRELICO);
- Gauteng and Environs Library Consortium (GAELIC); and
- South Eastern Academic Libraries (SEALS)

GAELIC is an academic library consortium, and has grown to become the largest in South Africa, with 16 member institutions. It was founded in 1996 in response to, "changing technological requirements in the higher education sector in South Africa, the call by government for tertiary institutions to co-operate and become more cost-effective, and the severe budgetary constraints being experienced by libraries." (GAELIC, 2003). Its vision is to create a virtual library with local service interfaces, forming part of a global information community for clients in Gauteng and its environs. Through its INNOPAC Systems Workgroup, it has coordinated and implemented the INNOPAC library system in all member libraries.

The INNOPAC library system is based in the United States of America and is used in different parts of the world. It is a product of the Innovative Interfaces Inc (III), a USA company established in 1978. It is being used in more than 40 countries by all types of libraries (III, 2005). This web-based system offers versatile modules that allow the effective storage and retrieval of information.

Before the INNOPAC library system was implemented in GAELIC, member libraries were already using their own systems with their own peculiarities. This gave rise to many problems during the conversion to a common library system, such as the conversion from different machine-readable cataloguing (MARC) formats to USMARC (United States machine-readable cataloguing) and to ensure that records are of good quality, and to facilitate staff training.

FRELICO came into existence officially in 1998 when its eight members signed an agreement of co-operation. The goal of FRELICO is to, "develop a comprehensive plan for using electronic networks to provide mutual and enhanced access to learned information to users of participating institutions of FRELICO" (FRELICO, 2005). Its two largest academic libraries (Central University of Technology Library and the University of Free State Library) have successfully implemented the INNOPAC library system through partnership with GAELIC.

Other South African consortia have been established in different regions of the countries. These are CALICO, which is located in the Western Cape Province; eSAL in the Kwazulu-Natal Province; and SEALS in the Eastern Cape Province (see section 2.4.3.1)

There has been an increase in the adoption of the INNOPAC library system in many libraries/library consortia in the wider Southern African region. Examples include libraries of the Botswana College of Agriculture, the National University of Technology (Zimbabwe), the University of Botswana, the University of Namibia, the Universidad Eduardo Mondlane (Mozambique), and the University of Zimbabwe, whilst the National University of Lesotho is seriously considering its implementation. As the strongest member of the Lesotho Library Consortium, it is likely that its adoption of the INNOPAC library system will influence the choice of a common system for this consortium.

The Lesotho Library Consortium (LELICO) was founded in 2003 and consists of 12 libraries (academic, national, and special). Its purpose is to provide information and

documentation services to members by harnessing and sharing national and international resources through the utilisation of information and communication technologies (ICTs). Only three of its members are fully computerised. It has become both urgent and necessary for this consortium to consider implementing a common library system, so that it can share resources and fully utilise the online resources that it has already acquired. Unlike GAELIC, LELICO is very small, and it is a multi-type library consortium. Implementing the INNOPAC library system in this consortium will present challenges. However, there are many lessons to be learned from GAELIC and FRELICO, which have been using the INNOPAC library system since 1997 and 1999 respectively, and from other consortia and libraries in the Southern African region. There is, therefore, a need to evaluate the introduction and performance of the INNOPAC library system in GAELIC, FRELICO and other libraries in the region to expose the advantages and limitations for LELICO. It is useful to examine the performance of these consortia and libraries as they are neighbours of Lesotho's where LELICO is located. Because of their geographical location, lessons learned from their experiences are likely to benefit LELICO.

Lesotho is a small country with a population of 1.8 million and is situated in the Southern African region where it is completely surrounded by the Republic of South Africa. The size of Lesotho is 30 355 sq km. (Lesotho, 2008). The library sector began with two main libraries: the National University of Lesotho (NUL) and the Lesotho National Library Services (LNLS) and has now grown to about 50 libraries (Makara, 2002). The NUL Library was opened in 1966 (NUL Library, 2005) and the LNLS was established in 1976 (Lesotho Review, 2008).

Although several factors affect the running of a consortium, the role played by information technology should be highlighted. Kopp (1998) indicates that information technology continues to be an instrumental tool in consortium. It is this critical role that makes library systems worth evaluating and to examine their performance in relation to desired goals and objectives. An evaluation of a common library system in a consortium is important since several member libraries are affected. GAELIC consists of 16 libraries, now merged into nine libraries, while the five FRELICO libraries have merged into two. Thus, the INNOPAC library system affects thousands of library users and staff members, and impacts on the management structures of the participating institutions.

Evaluation has generally been accepted as an essential element for measuring and ensuring effectiveness and efficiency in library services. An assessment of different library systems is essential before selecting and implementing an appropriate one; it is also necessary to evaluate a system after it has been implemented and operational for a significant period. This is done to check whether or not the system is performing to expectation, its functionality and the most important problems. Evaluation research not only assesses the merits and worth of a product, but weighs the costs against the benefits derived from it (Joint, 2006; Gray, 2004; Nicholson, 2004; McMillan and Schumacher, 1989).

Rowley (1980; 1988) identifies six stages of evaluation in system analysis and design:

- Definition of objectives;
- Evaluation of options (feasibility study);

- System definition;
- System design;
- Implementation; and
- Evaluation.

The final stage is post-implementation evaluation, which is an important focus of this study and is deemed to be a vital step in system design. Farajpahlou (1999), Matthews (1980), and Underwood (1990) for example, highlight the following benefits of post-implementation evaluation:

- A revised and strengthened (from the library's viewpoint) maintenance contract; and
- The identification of possible modifications that can be discussed with the vendor to improve the system.

Rowley (1988) agrees that recommendations arising from this kind of evaluation can assist in maintaining a sound relationship with the system vendor, as necessary modifications will need to be implemented.

GAELIC was the first consortium in South Africa to implement the INNOPAC library system and it is also the largest in terms of the number and the size of member libraries. Darch, Rapp, and Underwood (1999) indicate that GAELIC is one of the two better developed consortia when compared with other South African consortia. Therefore GAELIC appears to be the most suitable for evaluation, more especially because other consortia in the country and in the Southern African region, such as the Lesotho Library Consortium are considering opting for a common INNOPAC library system. Another

consortium that is worth examining is FRELICO, which is Lesotho's closest South African neighbour, the Free State Province. FRELICO implemented the INNOPAC library system in 1999 and participates in GAELIC's training initiatives (FRELICO, 2006).Three other libraries from the Southern African region that are worth considering are the Botswana College of Agriculture, the National University of Science and Technology (Zimbabwe) and the University of Namibia. They have already implemented the INNOPAC library system and together with the two South African consortia, will provide insight into how best to implement the system in a small, multi-type consortium like LELICO.

1.2 STATEMENT OF THE PROBLEM

Assessing the performance of library systems in consortia in a developing country is a useful exercise as library systems have played an important role in libraries and information centres by managing housekeeping activities more effectively and efficiently and by providing better access to library resources. With the emergence of consortia, it has become necessary to assess the performance of different library systems to improve the exchange of information among libraries.

The INNOPAC library system will be the central focus of this study as it is a valuable instrument for sharing information among GAELIC, FRELICO and other libraries in the Southern African region.

The study poses the following principal research question: **What are the successes and limitations of the INNOPAC library system for selected consortia and libraries in the Southern African region, and how can these guide the implementation and management of this system in the Lesotho Library Consortium?**

To answer this question, the study will seek to find answers to the following sub-questions:

- Which criteria are required for a comprehensive evaluation of the INNOPAC library system in consortia and libraries in the Southern African region?
- What are the successes and limitations of the INNOPAC library system in selected consortia and libraries in the Southern African region?
- What benefits and impact have the INNOPAC library system had on selected consortia and libraries?
- What are the costs versus benefits of the system?
- What are the system requirements of LELICO members and which system management model would work best for it?
- Given its special challenges, what critical lessons can LELICO learn from selected consortia and libraries in the Southern African region in order to guide the implementation and management of the INNOPAC library system?

1.3 METHODOLOGY

Both qualitative and quantitative methods will be used to investigate the research problem, however, the overall approach is a qualitative one. The aim will be to use both

kinds of methods in a complementary manner to gain insight into the problem, and to find out how well users judge the system on the basis of their experience, needs and expectations. A fuller treatment of the methodology is provided in Chapter 3.

The following are the target groups for this study:

- Library staff of five GAELIC libraries and two FRELICO libraries;
- System librarians of five GAELIC libraries, two FRELICO libraries, and three libraries in the Southern African region;
- Library directors of five GAELIC libraries, and two FRELICO libraries;
- The project manager of SEALS; and
- Twelve library heads of LELICO member libraries.

The choices and numbers are fully motivated in Chapter 3.

The system will be assessed using four types of data collection techniques, namely,

- Literature review;
- Questionnaires;
- Interviews and
- Site visits.

1.3.1 Literature search

An exhaustive literature review and analysis of library systems evaluation research is undertaken. The principal sources of information for this study are the extant literature on

the INNOPAC library system and policy documents of GAELIC, FRELICO and other libraries, which includes any documentation dealing with the implementation and use of the system. The literature review produces a framework within which there is a complete evaluation of the INNOPAC library system, and generates guidelines for constructing effective questionnaires. The performance evaluation criteria are adapted from recommendations by Lancaster (1977), Badwen (1990), Besemer (1987), Chisenga (1995), Farajpahlou (1999), Hernon and McClure (1990), Rossi and Freeman (1985), and Van House, Weil and McClure (1990).

1.3.2 Questionnaires

A survey of member libraries uses five sets of questionnaires administered to the management of selected GAELIC and FRELICO libraries, system librarians of selected GAELIC, FRELICO and three libraries in the Southern African region, library professionals and 12 library heads of LELICO member libraries. Although the end user is deemed important in the evaluation of a library system, the study only focuses on library personnel as users of the system.

Questionnaire data covers the following:

- The level of satisfaction of staff about the system and how well the system is performing in GAELIC, FRELICO and other Southern African libraries;
- The benefits and impact the system has had on GAELIC FRELICO and other Southern African libraries;
- Use of support systems for the INNOPAC Library system;
- Automation status of LELICO member libraries;

- Types of library systems and modules used by LELICO members;
- Nature of problems encountered with the system in use;
- System requirements for LELICO common library system; and
- Budgets of LELICO member libraries.

1.3.3 Interviews

Structured interviews provide a clearer picture of issues raised in questionnaires and solicit ideas on the resolution of identified problems. Interviews were undertaken with three GAELIC system librarians, two FRELICO systems librarians and one system librarian each from other Southern African libraries. The SEALS project manager was interviewed to gather information on the advantages and disadvantages of a centralised server management model for a small consortium. All GAELIC and FRELICO libraries use their own servers to store data. SEALS provided useful information for a comparison of centralised and decentralised server models.

1.3.4 Site visits

Site visits were made to a sample of five libraries (three from GAELIC and two from FRELICO) to increase the reliability of the instruments mentioned above. The visits gathered information on:

- the availability of system modules;
- the availability of other electronic services such as the Internet;
- how members access each other consortia's holdings; and
- how library sections responsible for the system are staffed.

1.4 SIGNIFICANCE OF THE STUDY

The study is evaluative in nature; it examines various aspects of the INNOPAC library system to determine its performance in a consortium environment. Specifically, the study:

- looks for effective ways of introducing the INNOPAC library system in the Lesotho Library Consortium as an example of a small, multi-type and newly-established consortium;
- identifies successes and limitations related to the performance of this system;
- benefits many Southern African academic libraries already using, or considering the implementation of the INNOPAC library system;
- proposes a suitable approach to implementing the INNOPAC library system; and
- provides useful information to the INNOPAC library system vendor on future product development plans and the requirements of small consortia and individual libraries in developing countries.

1.5 LIMITATIONS

1) The study focuses only on GAELIC, FRELICO and three selected libraries in the Southern African region. Since these are not the only consortia and libraries using the INNOPAC library system in Southern Africa, the findings will not necessarily reflect the views of all libraries in the region.

2) All GAELIC and FRELICO members are academic libraries. This peculiarity shapes the findings of the study, and makes it difficult to generalise in cases where different types of libraries are represented. For example, Lesotho Library Consortium is a

multi-type library consortium with its own special challenges and needs – the study deals with this matter in Chapter 6; also, according to Darch and Underwood (1999: 27) GAELIC is located in the "smallest but richest and most economically dynamic province" of South Africa and is likely to reflect this privileged character in its library resources and services.

3) The study highlights the management of INNOPAC library system, and is limited to library personnel as users of the system. As Badwen (1990: 6) indicates: "information professionals are the users of the system in the sense of being searchers, intermediaries, operators, providers and maintainers," their participation in the study is therefore deemed relevant. Another limitation of the study is that the end-users will be excluded.

1.6 DEFINITION OF KEY TERMS

Cost-benefit analysis: Refers to a justification for the expense of providing a service in terms of benefits derived from it (Hernon and McClure, 1990: 5). Cost-benefit analysis weighs the benefits against costs incurred to achieve the desired effect.

Effectiveness: The extent to which the needs of the user are satisfied, or the extent to which the overall objectives of the system are met (Hernon and McClure, 1990: 1).

Efficiency: How well the library system addresses the needs of users.

Evaluation: "The process of identifying and collecting data about specific services or activities, establishing criteria by which success can be assessed, and determining both the quality of the service and the degree to which the service accomplishes stated goals and objectives "(Hernon and McClure, 1990: 1).

Information and communication technology: Electronic technologies for collecting, storing, processing and communicating information. They can be separated into two main categories: (1) those that process information such as computer systems, and (2) those that disseminate information such as telecommunication systems (Butcher: 2000).

Information system: A data processing technology used for collecting, processing, storing and retrieving information to satisfy a variety of needs (Harrod, 1995: 322).

Library consortia: "Resource sharing organisations formed by libraries; also referred to as co-operatives, networks, collectives, alliances, or partnerships. These organisations share services such as collection development, education and training, preservation, centralised services, and network alliances featuring library automation services, systems support, consultation, and administrative support for cataloguing, interlibrary lending, union listing, retrospective conversion, and co-operative purchasing." (Harrod, 1995: 161).

Resource sharing: Involves sharing of library functions by a number of libraries, to provide a positive net effect on the library user and on the budget (Kent and Lancour, 1972: 295).

1.7 CHAPTER OUTLINE

Chapter One introduces the study and provides a background to library co-operation and evaluation of library systems. It covers the statement of the problem, methodology, significance of the study, definition of terms and limitations.

Chapter Two is a literature review, which includes literature on library co-operation, consortia, evaluation and library systems. It also covers developments that led to library co-operation and eventually to consortia, and the successes and limitations encountered. The current situation regarding the use of the INNOPAC library system in South Africa and other Southern African region is reviewed. Background information of the Lesotho Library Consortium is provided and some evaluative studies on the INNOPAC library system are reviewed.

Chapter Three describes the design of the study, which includes the participants in the study, sampling techniques, and methods of data collection. Steps taken to ensure data reliability and validity are discussed. The chapter also shows how data is analysed.

Chapter Four presents an analysis of data. Information collected from the literature, questionnaires, and interviews and site-visits are analyzed and presented.

Chapter Five offers an interpretation of the data, and makes informed interpretations of the data presented in the previous chapter. It gives reasons for general patterns observed in the data and offers possible solutions to identified problems.

Chapter Six is a critique, using successes and limitations, with a view to generate guidelines to implement the INNOPAC library system in the Lesotho Library Consortium. It makes recommendations on the method of INNOPAC library system's adoption. In proposing a model for the implementation of the system, the chapter provides a recommendation on the kind of system management to be employed, the functions of the system and the mode of operation by LELICO members.

Chapter Seven discusses the findings of the study in relation to the principal research question and sub-questions. It reaches general conclusions based upon the findings of the study and makes recommendations and identifies areas for future research.

1.8 CONCLUSION

Chapter one introduced the study by providing background and discussing the issues that led to the statement of the problem. The methodology for gathering information to be used was discussed. This identified target groups and data collection methods to be used. The chapter showed the significance of the study its benefits to various stakeholders. It also highlights the limitations of the study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Libraries have a long history of working together. The term 'library co-operation' is defined by Edmonds (in McDougall and Prytherch, 1991: 9) as the, "*reciprocally beneficial sharing of resources, developed or pre-existing, by two or more bodies*". Over the years, library co-operation has evolved into terms such as 'collaboration', 'partnerships', 'networking', 'resource sharing' and more recently, 'consortia'. The need to share resources for the benefit of the user is felt and driven more by academic libraries, which have led to the formation of many academic library consortia world-wide.

This chapter discusses factors that led to the development of library co-operation and consortia. It begins with developed countries, where modern libraries have been in existence for a relatively longer time. The situation in developing countries follows, with a special emphasis on countries in Africa. The main focus is on GAELIC, FRELICO and three libraries in the Southern African region, whose lessons in implementing the INNOPAC library system are used. The chapter also covers the Lesotho Library Consortium (LELICO), which is a small consortium in Southern Africa. Finally, the chapter describes success factors in the management of library consortia, and constraints and challenges in managing library consortia. The outcome of this chapter is the criteria for a comprehensive evaluation of the INNOPAC library system.

2.2 Motivation for library co-operation

Although a range of motivations have led to the formation of partnerships among libraries, the core driver is the realisation that no library can be self-sufficient in fulfilling users' needs. This move from "organisational self-sufficiency to a collaborative survival mode" (Allen and Hirshon, 1998: 1) is an important development, especially for academic libraries. According to the System Development Corporation (SDC) study, which looked at academic library consortia between 1931 and 1972, consortia are seen as the panacea for many of the long-standing problems in libraries. That study (Kopp, 1998: 9) identified the three most commonly cited objectives for forming consortia, namely to:

- share and improve resources;
- achieve some single purpose; and
- reduce costs.

The proliferation of computers in libraries during the 1960s is another factor that led to the development of a number of consortia, as libraries sought expertise on library automation (Jalloh, 2002: 205). According to Allen and Hirshon (1998: 37), from the mid-1980s to 1990, library consortia development was motivated primarily by three reasons, namely to:

- leverage resources by sharing existing collections or resources through virtual union catalogues, or through collective document and material delivery services;
- reduce the cost of member library operations; and
- affect how information is created, marketed, and purchased by libraries.

These motivations reflect the primary need for libraries to make their collections more widely accessible to users, in a cost-effective manner. Other sources (Jalloh: 2000; Nfila and Darko-Ampen: 2002; Woodsworth and Wall: 1991) concur with these observations, pointing to a number of reasons for the establishment of library consortia in both developed and developing world. The most common factors are related to:

- economic factors ;
- advancement of information technology; and
- quality improvement.

The need to ensure quality in consortia cannot be over-emphasised, more so because an exchange of records takes place easily in technological environments within which most consortia operate and it is necessary for members to maintain good quality records that adhere to certain standards.

2.3 Library co-operation in developed countries

Libraries have co-operated for an extensive period via activities such as inter-library lending, the compilation of union lists and staff training. As indicated in the previous section, terms such as 'partnership', 'collaboration', 'association', 'networks' 'resource sharing', 'co-operatives' and 'consortia' have been used to describe many facets of library co-operation. Kopp (1998: 8) traces the historical developments of 'library operation' in the USA to the following documents:

- '*Grouping of places for library purposes*' by G.L. Campbell, in 1879;

- Reports of the Cooperation Committee of the American Library Association (ALA), which appeared in the *ALA Bulletin* in the 1880s; and
- A Library Journal by Melvil Dewey on 'Library Cooperation', in 1886.

He notes that such 'partnerships' or 'association' were not generally in use until the 1820s, although the terms were still used a century later by manufacturing and banking enterprises, and in the 1950s and 1960s by the science and education disciplines. 'Resource sharing' is another relatively new term for library co-operation. However, Odini (1991: 93) differentiates between the two by describing resource sharing as a broader term that "assumes a range of physical, intellectual and conceptual resources on the one hand and a body of people with library and information needs on the other, and covers the activities involved in organizing the one into a set of optimum relationships to meet the needs of the other". He adds that library co-operation takes the existence of libraries for granted and describes how they can be optimally employed through collaboration.

Although the date for the first use of the term 'library consortium' is uncertain, the USA has witnessed a rapid growth in library consortia (Kopp, 1998: 7). One of the earliest consortia was the Triangle Research Libraries Network, which was formed in 1933 (Bostick, 2001: 1). In 1972, a study commissioned by the United States Office of Education identified 125 academic library consortia, ninety per cent of which were formed in the 1960s. Since then, there has been a remarkable growth of library consortia in the USA, which can be attributed to technological developments, which not only

enabled libraries to share information among themselves, but facilitated access to resources beyond geographical barriers.

In the United Kingdom (UK), the term 'co-operatives' is used synonymously with the term 'consortia'. Thirty-one library co-operatives were identified in 2000. According to Moore and Pilling (in Pilling and Kenna, 2002: 15), these cooperatives are operating in the five areas of:

- collection development;
- preservation and retention;
- access;
- bibliographic services; and
- record creation.

Fletcher (in MacDougall and Prytherch, 1991: 159) notes that libraries in the UK formed the Consortium of University Research Libraries (CURL) in 1982. Members include the libraries of the universities of Cambridge, Edinburgh, Glasgow, Leeds, London, Manchester and Oxford. Its major project involved the establishment of the Joint Academic Network (JANET) through which a database of bibliographic information on members was created. Other bodies that have been in the forefront of collaborative ventures in the UK include the Standing Conference of National and University Libraries (SCONUL), the British Library, the Library Association, and the Council of Polytechnic Librarians.

2.4 Library co-operation in developing countries

A developing country is defined as: "*A country in which large segments of the economy are still comparatively underdeveloped and the majority of the population is very poor; sometimes referred to as 'less-developed countries' (LDCs)*" (Welsh and Butorin, 1990: 309). Most of the developing countries are in Africa, Asia and Latin America.

Despite political and financial constraints, libraries in developing countries have recognised the importance of library co-operation. This is indicated by various activities such as the inter-library lending, co-operative storage, and staff training in Latin America, Asia, Africa and the Caribbean (Massis, 2003; Gorman and Cullen, 2000; Lor and Hendrikz, 1993).

2.4.1 Co-operation in Latin America and the Caribbean

A project worth mentioning in Latin America is the Asociacion de Estados Iberoamericanos para el Desarrollo de las Bibliotecas Nacionales de Iberoamerica (ABINA), which comprises 20 Latin American countries, Portugal and Spain. This UNESCO-sponsored project aims to build union catalogues and digital collections (Hiraldo in Massis, 2003: 11). A more recent project is the Latin Americanist Research Resources Project (LARRP), founded in 1995 and sponsored by the Association of Research Libraries (ARL) in the USA. It has created a Table of Contents Journal database of over 400 journals from Argentina, Brazil, and Mexico. It also operates an electronic document delivery service through the Ariel system.

There are also other USA-supported initiatives, one of the earliest began in 1930 with co-operation between Mexico and the USA in the area of library education. This involved training library personnel at USA universities, the provision of scholarships and an exchange of professors between the two countries (Rodriguez in Massis, 2003). Challenges that affect library co-operation in Latin America are discussed in section 2.6, together with other developing countries.

Ferguson (in Massis, 2003: 31) notes that a lot of effort and time has been expended in the Caribbean in support of conferences on library co-operation. He highlights the successful completion of projects such as c-operative indexing, the compilation of acquisitions lists and exchange programmes, which occurred under the umbrella of the Association of Caribbean University Research and Institutional Libraries (ACURL).

Latin America and the Caribbean are extensively engaged in library co-operation as illustrated by various activities in these regions. Foreign aid contributes positively towards the success of these cooperative initiatives.

2.4.2 Co-operation in Asia

Developing countries in Asia are making progress in library resource sharing, however, Asian consortia are in different stages of development, as observed by Gorman and Cullen (2000), which impinges on the advancement of resource sharing among libraries in the region. Nonetheless, a number of networks have been established, and go a long way towards meeting the information needs of users. Many collaborative efforts have

been made in Malaysia, Taiwan, and Thailand, but China and India are used as examples to highlight collaborative initiatives in Asia as these two countries are the largest.

The China Academic Library and Information System (CALIS) is a nation-wide academic library consortium (Yao, Chen and Dai, 2004: 277) founded in 1996 to provide infrastructure to enable smooth collaboration among its members. CALIS (Yao, Chen and Dai, 2004: 281) provides the following services:

- Virtual reference system;
- Chinese and foreign language dissertation and thesis abstracts and full-text database;
- Chinese and foreign periodicals database;
- Electronic reserved book database; and
- Management of imported resources.

Other major networks in China are the China Education and Research Network (CERNET), the China Network (ChinaNet), the China Golden Bridge Network (ChinaGBN) and the China Science and Technology Network (CSTNet) (Tang, 2001: 183).

The first library network in India was the DELNET (Delhi Library Network) which was established in 1980. DELNET has 86 member libraries. According to Kaul (1999: 220), its main objective is to promote resource sharing in Delhi and the neighbouring areas through:

- storing and disseminating information;
- offering computerised information services to users; and
- co-ordinating efforts for suitable collection.

Asia has attained many achievements in library consortia development, as it has been highlighted in this section.

2.4.3 Co-operation in Africa

Literature on co-operation in Africa brings to light the slow progress caused by a number of barriers and challenges generally linked to finance, technology, expertise and infrastructure (Alemna, 1998; Kargbo, 2002; Kisiedu, 1999; Mutula, 2004).

Despite numerous challenges in Africa, great strides have been made, especially in library co-operation and in consortia building. As in other parts of the world, inter-library lending in African countries is both the oldest and the most popular method of co-operation.

The SAIS (Southern African Interlending Scheme) has a membership of 768 libraries from Botswana, Lesotho, Malawi, South Africa, Swaziland and Zimbabwe (Baker, 2003). According to Raubenheimer (1998 (b)), membership is composed of national, research, university and college libraries. Members are able to access data on holdings of other members through the South African Bibliographic Network (SABINET) and can request materials directly from the members.

There has been an increase in the number of established consortia in the region. South Africa, for example, has five academic library consortia:

- Cape Library Consortium (CALICO);
- Eastern Seaboard Association of Libraries (ESAL);
- Free State Libraries and Information Consortium (FRELICO);
- Gauteng and Environs Library Consortium (GAELIC); and
- South Eastern Academic Libraries System (SEALS)

These consortia are discussed in Section 2.4.3.1.

Other countries in the Southern African region (Jalloh, 2000; LELICO, 2004; Molefe, 2003) that have made progress in consortia building are:

- Zimbabwe – the Zimbabwe University Library Consortium;
- Lesotho – the Lesotho Library Consortium;
- Botswana – Special libraries in this country have established a consortium; and
- Swaziland – There are plans to establish a national library consortium.

Ghana hosted a project in 1996 to form an electronic networking system in West Africa. It was sponsored by the IFLA (International Federation of Library Association and Institutions) Section on Document Delivery in partnership with the Danish International Development Assistance (DANIDA). According to Kisiedu (1999: 109), the members of this project are the:

- Balme Library of the University of Ghana;
- Library of the University of Science and Technology (UST);

- Library of the University of Cape Coast;
- Library of the University for Development Studies (UDS);
- Library of the University College of Education at Winneba (UCEW); and
- Ghana National Scientific and Technology Library and Information Centre (NASTLIC).

According to Kisiedu (1999: 110), the objectives of the project are to:

- establish electronic networking links with a regional and global approach;
- improve the competence of personnel in the participating libraries in handling interlibrary lending and document delivery systems in a more systematic way and with a national, regional and global approach;
- support negotiations with some major Western libraries and document supply centres; and
- develop the project as a model for emulation by other African countries which do not have such a system.

Odini (1998) conducted a study that reviewed the trends in information technology application in East Africa. He noted that while many libraries introduced IT, there was little co-operation among them. Mwinyimbewu (in Odini, 1998: 187) laments that this absence of co-operation has had a negative impact on funding bodies. He recommends that joint ventures are required as they enable the optimum use of scarce resources. This situation was noted by Rosenberg in 1992 in a study that examined the progress made by Kenyan libraries on information systems, resource sharing and networking, which found that resource sharing was deteriorating owing to the absence of national bibliographies

and shrinking budgets. Other barriers and challenges affecting East Africa and other developing countries will be discussed in section 2.6.

2.4.3.1 Library consortia in South Africa

According to Gerryts (in Marais, 2003: 21), library co-operation in South Africa was carried out on an *ad hoc* basis prior to 1975. In 1975, the Inter-University Library Committee (IULC) was founded by the Committee of University Principals (CUP). The aim of the committee was to investigate more effective resource sharing among university libraries. Among its recommendations, the committee suggested that a formal agreement on co-operation be made. A set of eight criteria for achieving this agreement among libraries wanting to co-operate was laid out as follows:

- Consensus regarding the process;
- A formal agreement in terms of the process;
- Formulating a policy through attracting and involving a number of institutions on a national level;
- A body of members with a controlling and co-ordinating function to promote and protect their interests;
- Voluntary participation in the co-operative infrastructure;
- Binding contractual obligations in terms of the co-operation agreement;
- Consideration of examples of similar agreements from other countries when drawing up an agreement; and

- An infrastructure within which member libraries are able to participate in collection management on a national level, document delivery, selection, retrieval and resource allocation.

Since the presentation of the framework of co-operation provided by the IULC, five academic library consortia have been established in South Africa, each of which has a regional focus with the common motivation of enabling better sharing of resources. These academic library consortia are discussed below.

2.4.3.1.1 Cape Library Consortium (CALICO)

CALICO was founded at the initiative of the Vice-Rectors' Group of the Western Cape Tertiary Institutions Trust (WCTIT), in 1992. It presented a proposal for funding to the Ford Foundation, following which a Ford Foundation team visited the five Western Cape institutions involved and agreed to the establishment of a library consortium (De Kock, Coetzee and Viljoen in Marais, 2003: 22). After this visit, the Western Cape Library Cooperation (WCLC) Project was established with the involvement of libraries of the following institutions:

- University of Cape Town;
- University of Stellenbosch;
- University of the Western Cape;
- Cape Technikon; and
- Peninsula Technikon.

Cape Technikon and Peninsula Technikon have now merged to become the Cape Peninsula University of Technology, and the University of the Western Cape now includes the University of Stellenbosch Dental School (*Sunday Times Higher Education:* 2005). The WCLC changed its name in 1994 to the Cape Library Consortium (CALICO). The aim of the consortium is to improve access to information at reduced costs (Alemna and Antei, 2002: 236). According to the Western Cape Tertiary Institutions Trust (in Marais, 2003: 23), CALICO's vision is:

> "To promote information literacy and economic development in a form users want, when, and where they need it. Inherent in this vision is the right of all citizens to be able to access, evaluate, and effectively use information that can contribute to improving their quality of life and economic well-being. Accordingly, the vision embraces the concept of a single Western Cape Library collection that is being housed at different locations with all resources accessible to anyone who has need of them."

To realise this vision, De Kock (in Marais, 2003: 23) reports that CALICO established the following working committees constituted by representatives from the five institutions involved:

- Document Delivery Working Group;
- Co-operative Journals Project;
- Van Service Committee;
- Team Building Committee;
- Working Group on a Shared Automated System;
- Committee on a Binding Policy;
- Committee on Consortium Structure; and
- Co-operative Staff Training Sub-committee.

CALICO is still one of the strongest library consortia in South Africa.

2.4.3.1.2 Gauteng and Environs Library Consortium (GAELIC)

GAELIC was founded in 1996. It is a major project of the umbrella consortium FOTIM (Foundation of Tertiary Institutions in the Northern Metropolis). Its beginnings can be traced to a visit by Andrew W. Mellon Foundation representatives in 1995, who met with seven universities and technikons to explore the idea of sponsoring a common library software within a consortium (Alemna and Antwi, 2002: 235; Darch and Underwood, 1999: 2; Edwards, 1999: 123; Marais, 2003: 24).

According to Edwards (1999), GAELIC was originally composed of the following institutions:

- Medical University of Southern Africa (MEDUNSA);
- Potchefstroom University of Christian Higher Education;
- Rand Afrikaans University;
- Technikon North West;
- Technikon Northern Gauteng;
- Technikon Pretoria;
- Technikon Southern Africa;
- Technikon Witwatersrand;
- University of Pretoria;
- University of South Africa (UNISA);
- University of the North;

- University of the North West;
- University of the Witwatersrand;
- Vaal Triangle Technikon;
- Venda University; and
- Vista University.

The table below illustrates ways in which some of these institutions have now merged or are being incorporated (*Sunday Times Higher Education*, 2005):

Table 1 GAELIC institutions after merging

Name	Institutions that formed the merger
University of Pretoria	University of Pretoria Vista University (Mamelodi)
University of Limpopo	University of the North (UNIN) Medical University of South Africa (MEDUNSA)
North-West University	Potchefstroom University of Christian Higher Education (PU for CHE) University of North-West (UNW) Vista University (staff and students of Sebokeng)
Tshwane University of Technology	Technikon Pretoria (TP) Technikon Northern Gauteng (TNG) Technikon North-West
Vaal University of Technology	Vaal Triangle Technikon Vista University (infrastructure and facilities of Sebokeng)
University of Venda for Science and Technology	University of Venda **Not merged** – only name change
University of Johannesburg	Rand Afrikaans University Technikon Witwatersrand Vista University (East Rand and Soweto)
University of South Africa	University of South Africa (UNISA) Technikon South Africa (TSA) Vista University of Distance Education Centre (VUDEC)
University of the Witswatersrand	**Not merged**

The vision of GAELIC is:

> "To create a virtual library with local service interfaces, forming part of a global community for clients in Gauteng and its environs. This will be achieved by a group of autonomous tertiary education information services, using technology and linked networks, which accept the need to explore co-operation and collaboration by consensus as a response to the formal education, training and information needs of the country." (Memorandum of Agreement in Marais, 2003: 25)

The mission of GAELIC is to fully utilise and develop the information resources of the Gauteng Province for the promotion of education, research and lifelong learning. According to Edwards (1999, 124-125), GAELIC agreed on the following objectives:

- To support the information needs of clients through co-operation, resource sharing and enhanced access to information, including electronic information;
- To provide common software to facilitate resource sharing and provide state-of-the-art systems capabilities in member libraries;
- To formulate appropriate collection development and acquisitions policies among members and to explore ways of saving costs;
- To utilise appropriate and up-to-date technology and to keep abreast of new developments;
- To improve information literacy among clients and to share training resources and expertise;
- To involve all interest groups through contact and collaboration; and
- To contribute toward the provision of information for the development of South Africa.

GAELIC set up a number of task groups and sub-groups, which to carry out specific tasks to ensure the fulfillment of its objectives (De Kock, 1997; Edwards, 1999). These were established as follows:

- Systems Task Group – responsible for researching a co-operative library system for GAELIC members, setting up system evaluation workshops, and organising consultancy for advice on the system. The task group was also responsible for final agreements and business strategies between parties;
- Resource Sharing Task Group with sub-task groups for document delivery, joint acquisitions, union list of current serial titles, and human resources;
- Cataloguing and Technical Services Workgroup (Gcats); and
- Networking and Infrastructure Task Group – responsible for the establishment of an information technology infrastructure to enable resource sharing.

Cognisant of the importance of forming strategic partnerships to facilitate its business, GAELIC decided to collaborate with the South African Bibliographic Network (SABINET), which has extensive experience of bibliographic data management. The National Library of South Africa (NLSA) is another strategic partner, and its director has observer status within GAELIC. In addition, the Free State Library and Information Consortium (FRELICO) is represented in steering committee meetings (Edwards, 1999: 125). These partnerships are believed to be essential for the mutual benefit of all the parties involved.

2.4.3.1.3 Free State Library and Information Consortium (FRELICO)

FRELICO was initiated by the University of the Free State, which sent a resource sharing proposal to Mellon Foundation. This resulted in the launch of the planning phase of FRELICO. In 1996, vice rectors or heads of institutions in the Free State Province met to discuss the involvement of their institutions in FRELICO (De Kock: 1997).

The following institutions participated in the planning stage of FRELICO:

- Bloemfontein Public Library;
- Free State Directorate for Information Services and Heritage;
- SASOL Technical Library Services;
- Technikon Free State;
- University of the North, Qwa-Qwa campus;
- University of the Free State;
- Vista University, Bloemfontein campus; and
- Vista University, Welkom campus;

Some of these institutions later merged as follows (*Sunday Times Higher Education*, 2005):

Table 2 FRELICO institutions after merging

Name	Institutions that formed the merger
University of the Free State	University of the Free State Vista University (Bloemfontein) University of the North (Qwa-Qwa)
Central University of Technology	Technikon Free State (TFS) Vista University (Welkom)

According to the Free State Libraries Project (in Marais, 2003: 27) the mission of FRELICO is to expand access to information, research and study materials in the Free State Province through electronic means. The goal is to develop a comprehensive plan for electronic networks to provide mutual and enhanced access to users of participating institutions. The five areas of co-operation were identified as follows:

- Shared computerised regional database/catalogue;
- Document delivery systems;
- Co-operative journals project;
- Information literacy programmes; and
- Training on technological issues related to information sciences.

FRELICO successfully implemented the INNOPAC library system in both the Central University of Technology and the University of the Free State in 1999. The other three libraries are no longer members of FRELICO (Ackerman, 2007).

2.4.3.1.4 Eastern Seaboard Association of Libraries (ESAL)

ESAL was founded in 1994 under the auspices of the Regional Institutions Co-operative Project (RICP) (Merrett, 1998: 27). It is composed of seven libraries from the following institutions:

- Natal Technikon;
- M. L. Sultan Technikon;
- Mangosuthu Technikon;
- University of Zululand;
- University of Natal, Durban;

- University of Natal, Pietermaritzburg; and
- University of Durban, Westville.

The new mergers are shown in the table below (Sunday Times Higher Education, 2005):

Table 3 ESAL institutions after merging

Name	Institutions that formed the merger
Durban University of Technology (DIT)	M.L. Sultan Technikon Natal Technikon
University of KwaZulu-Natal	University of Durban-Westville (UDW) University of Natal
University of Zululand	Not merged

According to Merrett (1998: 27-28), the mission of ESAL is:

> "To coordinate the resources of all the tertiary institution libraries on the eastern seaboard in order to develop a single resource base that will underpin teaching, learning and research in the area and in turn contribute to the national bibliographic network. In short, this means the maximum use of library resources within higher education both regionally and nationally, tighter integration of libraries into the academic process and the enhancement of the quality of research."

2.4.3.1.5 South Eastern Academic Library System (SEALS)

SEALS was based on an informal agreement made in 1989 and later evolved into a more formal structure in 1996. It comprises eight institutions, namely:

- Rhodes University;
- University of Port Elizabeth;
- University of Fort Hare;
- University of Transkei;
- Port Elizabeth Technikon;
- Border Technikon; and

- Eastern Cape Technikon.

These have now merged as follows (*Sunday Times Higher Education*, 2005):

Table 4 SEALS institutions after merging

Name	Institutions that formed the merger
University of Fort Hare	University of Fort Hare Rhodes University, East London Campus
Nelson Mandela Metropolitan University	University of Port Elizabeth (UPE) Port Elizabeth Technikon (PET) Vista University (Port Elizabeth)
Rhodes University	Not merged
Walter Sisulu University for Technology and Science	University of Transkei Border Technikon Eastern Cape Technikon

SEALS is sponsored by the Eastern Cape Higher Education Association (ECHEA), which was founded to "promote co-operative development of technikons and universities in the Eastern Cape" (ECHEA, 2006). SEALS implemented the Millennium Pac in 2001, which is the latest version of the INNOPAC library system. The consortium decided to manages its system centrally and the Rhodes University Information Technology Division (RUITD) hosts a shared server for participating institutions (SEALS, 2005).

Although South African library consortia have had many successes, they operate with some constraints. According to Darch, Rapp and Underwood (1999) the constraints relate to connectivity, low budgets and a decline in the exchange rate of the South African currency.

2.4.3.2 Lesotho Library Consortium

The Lesotho Library Consortium is a collaborative initiative of some Lesotho libraries seeking to enhance resource sharing using ICT. It was founded in March 2003, with the assistance of the Open Society Initiative for Southern Africa (OSISA), which was cognisant of the need to enhance resource sharing among libraries in Lesotho. The purpose of this consortium is to provide information and documentation services among members by harnessing and sharing national and international resources through efficient utilisation of ICTs (Taole, 2004: 19). LELICO (LELICO, 2005) describes its objectives as follows:

- To develop and improve co-operation among member libraries;
- 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;
- To work towards a co-ordinated policy of technical information growth and 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; and
- To co-operate with other libraries, research institutions and organisations within and without the country to further the purpose of the consortium.

Since its establishment, LELICO has negotiated free access to many journals. Members are already assisting their clients to access the most up-to-date information by using databases acquired through the consortium. To build capacity in the use of these modern

technologies, LELICO held a workshop in June 2004 the aim of which was to train members in the use of electronic databases and other digital information (Taole, 2004: 19).

Recognising both the inadequacy and lack of computers in some member libraries, LELICO managed to acquire 10 refurbished computers. This was achieved with the assistance of OSISA. Most of these computers are fully operational and have gone a long way towards assisting users of member libraries to access electronic information.

LELICO currently consists of libraries of the following institutions (LELICO, 2005):

- Agricultural Research;
- Palace of Justice;
- Institute of Development Management;
- Lesotho Agricultural College;
- Lesotho College of Education;
- Lesotho Highlands development Authority;
- Lesotho Institute of Public Administration and Management;
- Lesotho National Library Service;
- Lesotho Planned Parenthood Association;
- Lerotholi Polytechnic;
- National University of Lesotho; and
- Parliament of Lesotho.

LELICO has several types of member libraries; they include special libraries, a national library that also serves as a pubic library, and academic libraries, the majority of which are in the capital city, Maseru. The success of LELICO will depend on how effectively it uses ICTs to achieve its goals given the low levels of connectivity in Lesotho.

2.5 Success factors in the management of a library consortium

A library consortium involves bringing together a number of institutions with their own management styles, policies and priorities. It can therefore be quite challenging to manage a body composed of libraries from different institutions, however, there are factors that contribute towards the successful management of a library consortium. Allen and Hirshon (1998) and Woodsworth (1991) summarise these as follows:

- Governance;
- Technological infrastructure;
- Common purpose; and
- Funding.

2.5.1 Governance

A sound governance structure is essential for managing the short and long term activities of a consortium. Alemna and Antwi (2002:238) suggest that participating libraries should be bound by rules and regulations, and that they should enter into a formal signed agreement prior to joining a consortium. A central point should be identified to run the affairs of the organisation. They further suggest that the governing body be authorised to make and review the policies of a consortium. Towley (in Woodsworth: 52) contends that

the governance of the consortium should be viewed from a "communications" perspective, consisting of interrelated components of communications structure, resource flow and perceptions. The benefit of this perspective is its ability to respond to the communicated needs of members and to mobilize the necessary resources to meet these needs.

2.5.2 Technological infrastructure

Technology is central to the success of most consortia activities. De Gennaro (in Marais, 2003: 49) observes that a "lack of on-line capabilities has rendered previous networks ineffective". Technology in South African consortia receives a high priority, which is reflected in their mission statements. GAELIC and FRELICO have implemented a common library system (INNOPAC) in all member libraries; whilst the installation of Aleph 500 library system was one of CALICO's first projects (Darch, Rapp and Underwood, 1999: 29).

A sound technological infrastructure ensures that members have access to one another's' holdings. Inter-library lending works faster since one can verify the library that has the required material and effect the necessary transaction instantly and collection development can also be more effective (Marais, 2003: 29). Allen and Hirshon (1998, 42) suggest that, for the long-term sustainability of the consortium, management should direct and co-ordinate the adoption of emerging technologies in order to enhance member library services.

2.5.3 Common purpose

Another essential success element in the management of a consortium is a strong, shared recognition of the value of increased collaboration (Allen and Hirshon, 1998: 43). Despite differences in opinion, members should desire to work towards the common good of the consortium. Hewitt (in Marais 2003: 51) notes that collaborative efforts are more easily established when there is some parity and equality among members; varied membership might compromise individual institutions' goals. It is therefore important to have constant support from parent institutions.

2.5.4 Funding

Funding is crucial to the successful establishment and maintenance of a consortium. Woodsworth (1991: 63) observes that without external funding, co-operative efforts seldom flourish, but rely merely on the goodwill of members. Woodsworth strongly discourages the establishment of a consortium without reliable funding. In South Africa, GAELIC, FRELICO and CALICO were funded by the Andrew Mellon Foundation (Darch, Rapp and Underwood, 1999: 29; Edwards, 1999: 25). The Lesotho Library Consortium received seed money for its launch and establishment from the OSISA (Taole: 2004: 19). Woodsworth (1999: 125) suggests the following methods for income-generation among networks:

- Annual or flat fees;
- Transaction fees;
- Varying fees on the type of services used; and
- Permutations of the above.

Continued fundraising efforts by members will enable expansion of services and ensure the long-term sustainability of consortia.

2.6 Limitations and challenges facing library consortia

Despite the many successes achieved in resource sharing and particularly consortia development, there are limitations and challenges. Obstacles are more visible in developing countries. Woodsworth (1991: 131) mentions the following factors that prevent libraries from co-operating:

- High cost for minimal benefits;
- Savings and cost reduction are not affected;
- Co-operation is a marginal activity;
- Benefits are hard to explain;
- Satisfaction with the *status quo*;
- Confidential collections or proprietary information;
- The network, not its members, controls directions;
- Small libraries will be overwhelmed;
- Lack of creative and visionary leadership;
- Loss of autonomy;
- Conflicting policies;
- Lack of external funding;
- Local funds needed for local services; and
- Group fundraising competes with local efforts.

Although these limitations were identified in 1991, they remain valid. While some of the barriers might not be generalised for all regions, Gorman and Cullen (2000: 375) argue that there are four major barriers affecting co-operative efforts, namely:

- Desire for autonomy;
- Competitive environment;
- Changing institutional focus; and
- Financial constraints.

Odini (1991: 94) notes that, in developing countries, a lack of national policies on libraries has hampered resource sharing progress. This contributes to inadequate library budgets, which in turn results in poor library resources. Another factor is a lack of data on important library matters, for instance, it is impossible to exchange resources if there is no information on the holdings of other libraries. The rapid escalation in the price of materials, especially periodicals is another barrier. Given the fact that libraries in developing countries already operate on stringent budgets, the high price of library resources only exacerbates the problem. Another constraint is the lack of facilities for rapid communication among libraries. Resource sharing depends largely on a variety of facilities and equipment such as computers, telephones and facsimiles, which enable better communication. Without these facilities and equipment, the sharing of resources is problematic.

In addition to the above constraints, Mutula (2004: 281) adds that challenges applicable to Africa relate to:

- finances
- technology
- content, and
- information literacy

Notwithstanding these barriers, libraries have worked towards finding a common goal and increasing their effectiveness by sharing resources. The establishment of formal co-operative initiatives such as consortia is indicative of a desire among libraries to add value to and enhance service delivery to their users. The success factors in managing consortia seem to be the main drivers in ensuring their sustainability. It is necessary for library consortia to remain sensitive to the common purpose of all members, to ensure that the technological infrastructure necessary for service delivery is available, and to engage in fundraising.

2.7 Systems in libraries

A system can be defined as "an integral set of related components established to accomplish a certain task." (Capron in Osborne and Nakamura, 2000). In describing a system, Osborne and Nakamura (2000:3) highlight the following important elements:

- Interrelatedness of elements that perform some function;
- Logical boundaries define; and
- The elements involved must combine to meet some purpose.

In the case of library systems, the primary function would be to collect, process, store, and retrieve information to satisfy a variety of needs.

Over the years, libraries have introduced information and communication technologies, such as CD-ROMs (compact disc-read only memory), computer systems, videos, and the Internet in their operations to enable quick and effective ways of accessing data. According to Rowley (1993: 5), the use of information systems in libraries has been necessitated by:

- an increased workload;
- the need to achieve greater efficiency;
- the introduction of new services; and
- co-operation and centralisation.

Adams (1986) and Woodsworth and Wall (1991) note that academic libraries have been in the forefront of information system usage because of the pressure to provide good value for the money invested in them, which resulted in libraries having to address the needs of users faster and more effectively. In addition, increased enrolments in academic institutions increased the need for broader and improved access to information resources. Furthermore, the increased cost of printed journals persuaded librarians to examine alternatives such as electronic formats, which are cheaper when purchased through, for example, library consortia.

2.7.1 Library systems in consortia

Library systems have been a great motivation for establishing consortia around the world (Seal, 1991: 229). For example, DeGennaro (1991) notes that the “golden years of library

co-operation" in the USA were in the 1970s, when computing and telecommunication became strong. It was at this time that the USA experienced unprecedented growth in networks. Kopp (1998: 9) points out that one of the four general types of consortia was the "large consortia concerned with large-scale computerised processing". Similarly, in Britain, Moore and Carpenter (in Pilling and Kenna, 2002: 15) found out that 10 out of 11 consortia established since 1997 were concerned with technological applications and developments.

The implementation of library systems in developing countries was one of the main stimuli for establishing library consortia, and their use continues to provide a variety of opportunities for strengthening library services. The INDEST (Indian National Digital Library in Science and Technology) consortium in India offers "consortia-based subscription" to electronic resources to increase access and to cut the costs of journals (Gulati, 2004: 340).

South African library systems have been a priority in different library consortia. The implementation of Aleph 500 software as a common library system was one of the first projects of CALICO (Darch, Rapp and Underwood, 1999: 29). Similarly, FRELICO and GAELIC implemented the INNOPAC library system soon after their establishment (Edwards, 1999: 17).

The benefits of library systems in consortia are summarised by Frawley (2003: 100) in a discussion of the benefits of the ELP (Electronic Library Project) for Northern Ireland. They are:

- Reduction of costs;
- Improved library service performance;
- Wider public access to information;
- Business transformation;
- Equality of citizens participating in and developing technological skills; and
- Better value.

Library systems play a crucial role in enabling librarians to meet the needs of users. This role is strengthened through library consortia, as the benefits of resource sharing become more visible. The important role of library systems has motivated the implementation of systems such as the INNOPAC library system, which are increasingly being implemented in many parts of the world, through consortia and by individual libraries.

2.7.2 INNOPAC library system

The INNOPAC library system is a product of the Innovative Interfaces Incorporated (III) Company based in the USA, which was founded in 1978 (Ballard, 1995). Its origins are in the creation of the "black box" that was used as an interface between the OCLC (Online Computer Library Centre) and CLSI (CL System Inc.). This interface enabled libraries to download OCLC bibliographic records into the CLSI system. The first installation of the OCLC/CLSI interface occurred at the California State University.

Innovative Interfaces launched INNOVACQ in 1982. It offered advanced acquisitions and serials modules. This was followed by the introduction of the INNOPAC system in 1985, which supported cataloguing, circulations, serials, acquisitions and the online public access catalogue (III, 2005).

The III has introduced several enhancements since its establishment, which have made its products both responsive and relevant to the needs of libraries. The INN-Reach system was implemented in 1995, and supported about nine million records from 84 institutions. The Millennium Access Plus was launched in 2001. This product offered web-based information for different types of library functions (III, 2005).

The INNOPAC library system has continued to expand to many parts of the world. After 16 years of operation, it has been installed in 350 institutions worldwide, at a rate of nine or 10 new installations per month (Berry, 1994: 44). By 2004, around 1 100 systems had been installed serving over 1 400 academic libraries and more than 3 000 public libraries.

Although the majority of users of the system are in the developed world, the number of users in developing countries is increasing. For example, some libraries in the South American countries of Peru and Chile use the INNOPAC library system; Asian countries such China, Malaysia, Taiwan, Thailand, and Turkey have also installed the system in some of their libraries; whilst in Africa, the INNOPAC library system has been implemented in countries such as Egypt, Ghana, and Morocco, as well as some countries in the Southern African region.

2.7.3 INNOPAC library system in GAELIC and FRELICO

One of the main objectives of GAELIC is to utilise appropriate technology and to keep abreast of technological developments to enable more effective resource sharing among members. Therefore the implementation of a common library system became the first area of focus for GAELIC. After its establishment in 1996, GAELIC decided to build on UNISA's library system's specifications that had been drawn up the previous year. This was followed by a Request for Information (RFI) sent to four overseas and two local system vendors (Edwards, 1998: 18; 1999: 125).

After an evaluation and demonstrations of various systems, the INNOPAC library system was chosen as a common library system for GAELIC. A proposal for its implementation was immediately sent to the Andrew Mellon Foundation and a grant of $1.5-million was awarded for the first phase of the project. The System Implementation Management Committee implemented the INNOPAC library System in three phases:

Phase 1

Technikon Northern Gauteng

Technikon Pretoria

Technikon Southern Africa

Technikon Witwatersrand

University of South Africa

University of the Witwatersrand

Phase 2

Medical University of South Africa

Potchefstroom University for Christian Higher Education

Rand Afrikaans University

University of Pretoria

Vaal Triangle Technikon

Vista University

Technikon Free State

University of the Free State

Phase 3

Technikon North West

University of North West

University of Venda

University of the North.

Phases 2 and 3 were carried out with additional funds from the Mellon Foundation. The University of the Free State, and Technikon Free State of FRELICO also participated in Phase 2.

During data conversion, support was received from SABINET. The authority control process was out-sourced to Library Technologies Inc. of the USA Since most of the existing systems had to be converted from the SAMARC (South African Machine

Readable Cataloguing) to the USMARC (United Stated Machine Readable Cataloguing), intensive training was carried out on the USMARC before data conversion (Edwards, 1998 and 1999; Man and Erasmus, 1998).

FRELICO implemented the INNOPAC library system in 1999, in partnership with GAELIC. The funding for this process was provided by the Andrew Mellon Foundation. The Central University of Technology and the University of Free State have both migrated from their old systems to the INNOPAC library system (FRELIO, 2007).

Other South African institutions that were installing the INNOPAC library system in 2004 were the:

- Library of Parliament, Cape Town;
- Mangaung Library Service, Bloemfontein;
- Msunduzi Public Library, Pietermaritzburg; and
- National Film, Video and Sound Archives.

2.7.4 INNOPAC library system in some Southern African countries

In addition to the South African consortia and institutions mentioned in the previous section, the INNOPAC library system has proved to be a popular choice for other libraries in the Southern African region.

The Zimbabwe University Library Consortium has already installed the system in some of its member libraries. The University of Botswana Library changed from the British

system called TinLIB (The Information Navigator for LIBraries) to the INNOPAC library system, and has now installed its many modules. The University of Namibia began the process of implementing the system in its library (Erasmus, 2005).

As mentioned, the Lesotho Library Consortium may opt for the same system. In 2004, the National University of Lesotho, which is the largest member of LELICO, signed a contract with the system vendor, and it is now in the early stages of implementation. This might affect LELICO's choice of its common library system.

Generally, there has been an increase in the adoption of the INNOPAC library system in South Africa, especially by academic libraries, with most of the libraries implementing the system through consortia. Examples of these are GAELIC, FRELICO and SEALS. Similarly, other libraries like BCA, NUST, UB and UNAM in the Southern African region are using the system. The increasing interest in the INNOPAC library system in the Southern African region therefore calls for a thorough evaluation of the performance of the system and whether or not it meets the needs of the libraries. Since other libraries in the region are interested in implementing the system, it is necessary to assess its performance and question its application in environments with more specific requirements.

2.8 Evaluation of library systems

Hernon and McClure (1990: 1) define evaluation as: "the process of identifying and collecting data about specific services or activities, establishing criteria by which success can be assessed, and determining both the quality of the service and the degree to which the service accomplishes stated goals and objectives." The process of evaluation involves a comparison of performance and the stated objectives of the service. This is done to determine (a) if there has been any change in performance for a given period, and (b) if so, if the change has been in the desired direction, and to what extent (Goldhor in Lancaster, 1977: vii). According to Swanson and Meyer (1975: 56) evaluation is seen as a decision-making tool, whose purpose is to:

- assess a programmes' objectives or goals;
- determine if and how well objectives of performance expectations are being met;
- determine reasons for specific successes and failures;
- discover the principles underlying a successful programme;
- examine the alternatives and techniques for increasing programme effectiveness; and
- re-assess programme objectives and programme design implementation.

While there are various factors that have contributed to the success or failure of library systems, Farajpahlou (1999) contends that they can be summarised as two aspects: technical and human. On the technical side, functionality is a vital criterion as it relates to inherent characteristics of the system. Joint (2006) gives two views of functionality, which he describes it as 'objective' and 'subjective'. Objective functionality is defined as "a set of properties residing inherently in the technology under consideration", while

subjective functionality is about what a product can do for the user. Properties that describe objective functionality of a library system include availability, accessibility, reliability, security, ability to integrate, ability to customise and upgradeability.

The human side, which is also referred to as 'subjective functionality' by Joint (2006), refers to aspects of usability of the system, support, training, and relations with the system vendor. This criterion looks at appropriate features that assist a user to navigate the system. It is considered crucial as the success of the system lies in its effective use and how it is perceived by users. It covers aspects such as user-friendliness, error and help messages, support systems, training, and availability and helpfulness of the vendor.

2.8.1 The importance of evaluating library systems

Library systems play an important role in libraries, especially in cases where libraries have come together in establishments such as consortia, and where a number of institutions are affected. The evaluation of library systems as the backbones of libraries and library consortia is necessary. Osborne and Nakamura (2000: 7) list a number of reasons for system evaluation:

- *Implementation of a new technique* – In this case, there would be a need for staff members to keep abreast of new developments, emerging trends and evolving technology;
- *External environmental changes* – New requirements or regulations outside the system may necessitate changes;
- *Interest in improving the current system;* and

- *Problems with a system* – general dissatisfaction among staff and end-users, or a crisis situation creating a demand for evaluation.

Systems play a crucial role by facilitating exchange and sharing information in library consortia. Thus most library consortia give priority to the implementation of a common library system, as this enables them to be more efficient. There is a mutually beneficial relationship between library consortia and systems. While library systems enable the smooth running of a library consortia's business, the emergence of library consortia has had an impact on new developments in library systems. For example, Frasciello and Richardson (1999: 77) point out that, "library consortia became a driving force behind the true client/server- based distributed systems". The client/server systems addressed complex issues related to resource availability and sharing related to library consortia. Consortia require systems that address their specific needs, such as those related to interoperability, manageability, and security (Frasciello and Richardson, 1999: 80).

2.8.2 Evaluative studies of the INNOPAC library system

The following three evaluative studies on the INNOPAC library system show how the system's performance:

2.8.2.1 Functional Performance of Automated Systems: a Comparative Study of HORIZON, INNOPAC, and VTLS (Chaudhry and Ashoor, 1998)

The study aimed to examine the functional performance of three major library systems: HORIZON, INNOPAC and VTLS. This was achieved through input from system

vendors, as well as 152 libraries from 15 countries in different parts of the world. Respondents included academic, national, public and special libraries. The major functional areas assessed were:

- Acquisitions;
- Cataloguing;
- Circulations;
- Public Access Catalogue;
- Reference and Information Services; and
- Serial Control.

The study found that the availability and use of features of the INNOPAC supported 96% of the listed features, HORIZON supported 94% and VTLS supported 87%. Functionality analysis indicated that 23% of INNOPAC library system users were using all the system modules, while none of HORIZON and VTLS users were using all the modules. The performance in operational setting of INNOPAC was reported to have greater potential for automating Circulations, Acquisition, Serial Control, Cataloguing, and, Reference and Information Services. But it scored low on prompts and help messages in the Public Access Catalogue.

The overall assessment revealed that the automated library systems had not been exploited to their full potential, and only limited functions were being fully utilised. It was recommended that further investigation be carried out to determine the reasons for the under-utilisation of the system's capabilities.

2.8.2.2 A Library's Integrated Online Library System: an Assessment and Hardware Implementation (2004)

This study was conducted among members of a consortium of academic libraries in southern Nevada in the USA (Vaughan, 2004). The consortium used INNOPAC as its common library system. The objectives of the study were to:

- Understand the relative place of Innovative Interface Inc. in the library automated-system vendor marketplace in 2001;
- Agree on prioritised and weighted-performance criteria using broad staff input;
- Measure and evaluate the performance of the shared system against the criteria using broad staff input; and
- Recommend one of the following courses of action:
    - Re-affirm the consortium's commitment to Innovative as the vendor of choice with recommendations to upgrade and expand the existing system as appropriate; or
    - Begin a formal review of the vendor market-place to select a new vendor to replace Innovative.

For the purpose of this study, only findings relating to the measurement and evaluation of the performance of the INNOPAC library system will be discussed. These are summarised in the table 5:

Table 5 Findings of the Nevada Study on the INNOPAC library system

Reliability and performance	Outstanding
User interface andand functionality	Comprehensive, but some inflexibility noted in Public Access Catalogue
Staff functionality andand interface	Good
Vendor support	Satisfactory

Because the general good performance of the INNOPAC library system, the consortium decided to re-affirm its commitment to Innovative as the vendor of choice with recommendations to upgrade and expand the existing system.

2.8.2.3 A Survey of GAELIC members on Innovative Interface Inc. as company and INNOPAC as a library system (2004)

This study was carried out in 2003 – five years after the first phase of INNOPAC library system was implemented in GAELIC. All 16 participating institutions were surveyed. The aim of the study was to review the experiences of GAELIC libraries regarding the III (vendor) and its products and services, mainly the INNOPAC library system (GAELIC, 2004).

The focus areas were related to:

- costs;
- customisation;
- developments;
- support services;

- training;
- dcumentation;
- communication;
- user groups and GAELIC INNOPAC System Workgroup;
- libraries' expectations of the library system;
- role of the system in the libraries' service strategies and processes;
- optimal use of the system; and
- other issues to be raised with III and GAELIC.

Findings

Costs

The majority of libraries (64%) believed that the annual maintenance fee was high, especially as the exchange rate disadvantaged South African libraries. When it came to costs relating to staff expertise and time, the majority of libraries (62.5%) needed at least one dedicated staff member to perform regular system administration support tasks. There were also additional products that 56% of the libraries had to purchase to enhance the functionality of the system.

Functionality

Most libraries (81%) rated the functionality of the features of the library system in terms of internal processes and end-users services as high. There were positive comments about the user-friendliness and comprehensiveness of the system. Areas of concern were the Circulation and Acquisitions modules.

Customisation

Half of the libraries rated the ability to customise the system as good, while the other half rated it as average.

Developments

In terms of accommodation of user requirements and new technology, the majority of libraries (77%) were experiencing on-going developments. This was evident enhancements such as Web-based modules, interlinking with commercial information providers and databases, e-commerce, and wireless public access catalogues. The frequency of maintenance up-dates and releases was rated as good.

Support services

Support services were rated as good by the majority (75%) of libraries.

Training

Forty-four per cent rated the training provided by III during implementation of INNOPAC as good and 44% rated it as average.

Documentation

The documentation of the system was favourably rated by 76% of the respondents, who said it was up-to-date, comprehensive and helpful. They indicated that the training documentation could be improved.

Communication

Communication was said to be regular and relevant.

User groups and the GAELIC INNOPAC System Workgroup

The user groups referred to here were the International Innovative User Group and listserv, and the Innovative User group – Southern Africa. These were said to be beneficial and offered good support to members. The GAELIC INNOPAC System Workgroup was seen as a platform where members learned from each other, addressed their training needs and negotiated for discounts on new products and system enhancements.

Libraries' expectations of the library system

The system met most of the libraries' expectations and requirements in terms of functionality. It was described as stable, forward-looking and responsive.

Role of the library system in the libraries' service strategies and processes

A positive role played by the system was noted by most libraries (94%) in the service delivery and enabling libraries to address clients' needs.

Optimal use of the system

Many libraries (63%) do not use the available functionality of the system optimally.

Benefits and value of the library system outweighing its initial and ongoing costs

The majority (63%) of libraries stated that the benefits and the value of the system outweighed its initial and on-going costs.

Issues to be raised with III and GAELIC

Issues of concern that could enable smoother running of the systems were:

- A need for a South African Innovative office;
- Customisation to a South African environment, e.g. less American terminology;
- New system enhancements were considered to be added too quickly for libraries to keep pace; and
- Lack of Web design knowledge among GAELIC libraries, hampering their ability to customise the system Web interface.

Generally, the system was rated positively by GAELIC members with regards to meeting most needs of member libraries. The majority of libraries were satisfied with its performance. A regular assessment would assist in ascertaining whether or not the system still performs as expected, and ensure that it responds to the changing needs of the consortium.

2.8.2.4 GAELIC Institutional Members Survey (2005)

Another relevant study entitled "GAELIC Institutional Members Survey" was carried out in 2005. The study looked at various aspects of GAELIC membership such as library facilities, collections, expenditures and the INNOPAC library system infrastructure.

Among others, it reviewed mission statements of GAELIC member libraries against their parent institutions and GAELIC developments. The study found that most members' mission statements were aligned with their parent bodies. It also examined membership and participation in the consortium, specifically looking at the strengths and weaknesses of GAELIC from the members' viewpoint, resource sharing, common system support and collaboration were among the highlighted strengths of GAELIC, while the distance between institutions, too many meetings and teams were among its weaknesses.

The study established that there was general satisfaction on the performance of the system in GAELIC member institutions. It recommended that an evaluation of the system be done "to find out if it is still the best choice for the enlarged GAELIC and for instituting a rolling review of the vendors as new products become available" (Smith and Underwood, 2005: 38).

In addition to the functionality for bibliographic processing on which the GAELIC Institutional Members Survey focused, the researcher of the current study will also examine aspects such as usability, availability, and the use of online support groups, like the Innovative User Group and the INNOPAC User Group: Southern Africa. Another South African consortium, FRELICO and three other libraries in the Southern African region that use the INNOPAC library system will be evaluated.

2.9 Conclusion

The literature has pointed to various collaborative activities among libraries in both developed and developing countries. Reasons for these activities and the establishment of library consortia in particular include a need to share resources and to reduce costs. The principal aim of the establishment of library consortia is to address the needs of information users more effectively and efficiently. The literature also highlights a growing number of library consortia across the world.

The factors related to the successful management of library consortia are: governance, technological infrastructure, common purpose and funding. However, limitations have been identified that hinder co-operation in library consortia. These are: desire for autonomy, competitive environment, changing institutional focus, and financial constraints. Challenges that apply to African consortia are related to finances, technology, content and information literacy.

The role of library systems in library consortia and their evaluation as a crucial management element are clearly important. The INNOPAC library system is preferred in a number of library consortia in the Southern African region. Some studies have attempted to evaluate this system to improve it. The most relevant studies are those of GAELIC which was conducted in 2003, which sought to review the experiences of GAELIC members in respect of the system's vendor and the system itself, and "The GAELIC Institutional Members Survey, 2005" which looked at aspects of GAELIC membership and included the INNOPAC library system.

The literature review has exposed several aspects of the implementation, management and value of the INNOPAC library system in library consortia. However, with reference to the questions posed in the study, the literature did not however deal with the following questions:

- What is the value of INNOPAC for small multi-type consortia in a developing country like Lesotho?
- What are the impact and benefits of the INNOPAC library system in the developing world?
- Which success factors and limitations are relevant to the implementation and management of the INNOPAC library system for LELICO?

The chapter identified the following criteria for a comprehensive evaluation of the INNOPAC library system:

- Functionality;
- Usability;
- Costs;
- Support;
- Training; and
- Vendor.

Management of the server is considered to be an important additional aspect that should be examined for a small multi-type consortium like LELICO. Chapter three describes the

research methodology, including target groups to be assessed, sampling techniques and data collection methods. It will also discuss the data analysis.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction:

This chapter discusses the collection of data to answer the principal and subsidiary research questions of the study (see section 1.2). It explains the research design, sampling techniques and data collection methods used. In addition, it describes the analysis of the data. As a means of ensuring data quality, the chapter also outlines ways of addressing threats to reliability and validity.

Collected information should seek to answer the principal question of the study, which is: What have been the successes and limitations of the INNOPAC library system for selected consortia and libraries in the Southern African region, and how can these guide the implementation of this system in the Lesotho Library Consortium? As shown in the previous chapter, some evaluative studies were conducted on the system, however, a number of gaps were confirmed in the literature regarding a fuller evaluation of the INNOPAC library system in consortia and libraries in the Southern African region, especially from the perspective of smaller, multi-type consortia.

3.2 General perspective

This evaluation study is summative in nature; which is described by McClure (1982: 23) as an outcome evaluation that takes place at the end of an operation and it is product, rather than process oriented. Summative evaluation shows the success of the programme

in achieving a set of organisational goals, and is thus concerned with the effects of the programme. Usually two approaches are used in this type of evaluation, namely:

- The collection of information necessary for decision-making, usually conducted during the monitoring stage. The information gathered is then compared with the pre-determined measures already established for the programmes' success;
- The results or output of the programme are compared to organisational goals to show the effectiveness of the programme.

Summative evaluation differs from formative evaluation in that the latter produces information that is fed back during the development of a programme to help to improve it. This is usually undertaken during the implementation stages of a programme.

This summative evaluation of the INNOPAC library system will be checked against LELICO requirements to identify discrepancies and lessons for implementation and management.

Although both quantitative and qualitative measures are employed, the study will primarily apply a qualitative approach. According to Glazier and Powell (1992: xi), qualitative methods focus on the experiences of people involved and try to understand the reasons behind certain behaviours. The strength of qualitative data is its rich description. According to Miles and Hubermann (1994), it involves the following characteristics:

- It is conducted through intense contact within a 'field' or real-life setting;
- The researcher's role is to gain a 'holistic' or integrated overview of the study, including the perceptions of participants;

- Themes that emerge from the data are often reviewed with informants for verification;
- The main focus of research is to understand the ways in which people act and to account for actions;
- Qualitative data are open to multiple interpretations.

On the other hand, quantitative measures are about "the study of 'things' by the use of mathematical and statistical methods" (Booth, 1988: 48). Both quantitative and qualitative will be used in this study. The questionnaires will mainly seek to collect quantitative data, while interviews and observation will gather data of a qualitative nature. It is envisaged that the two will complement each other, as the qualitative method will give insight to the quantitative method, thereby enriching the quality of data collected.

3.3 Research design

A research design is described as: "a plan that guides the investigator in the process of collecting, analyzing and interpreting observations. It is a logical model of proof that allows the researcher to draw inferences concerning causal relations among the variables under investigation" (Yin, 1994: 19). The design covers sampling techniques as well as the data collection methods to be used.

The study employs a case-study design, the case being the INNOPAC library system in GAELIC and FRELICO and selected libraries in the Southern African region. Yin (1994: 13) defines a case study as an empirical inquiry that:

- investigates a contemporary phenomenon within real-life context; and
- uses multiple sources of evidence.

'Library consortia' are a relatively new phenomenon in the Southern African region and influence the operations of libraries and their parent organisations. Library systems play a significant role in the operations of consortia and are therefore worth investigating.

The advantage of a case study method is that it is not just descriptive, it also tries to attribute causal relationships (Gray, 2004: 124). The value of this method in the current study is that it forms a basis on which comparisons can be made. Investigating GAELIC and FRELICO enables the researcher to understand the context within which the INNOPAC library system operates in these consortia. This results in further investigation of the extent to which the GAELIC and FRELICO cases can be generalised for consortia in other developing countries like LELICO. The other libraries selected from the Southern African region provide additional information on how the INNOPAC library system is performing in small developing countries.

3.4 Target groups

The following are the target groups for this study:

- Library staff of five GAELIC libraries and two FRELICO libraries;

- System librarians of five GAELIC libraries, two FRELICO libraries and three libraries in the Southern African region;
- Library management of five GAELIC libraries and two FRELICO libraries;
- Project manager of SEALS; and
- Twelve library heads of LELICO member libraries.

3.4.1 Library staff of GAELIC and FRELICO

The GAELIC and FRELICO consortia were chosen because they were among the first consortia in the Southern African region to implement the INNOPAC library system. Their relatively long experience with the system makes them ideal candidates for the study. As close neighbours of Lesotho's, they can provide valuable lessons for the implementation and management of the INNOPAC library system.

Library professionals use different modules of the system on a day-to day basis. These people were chosen to provide information of the performance of these modules and to give their impressions on the overall performance of the system.

3.4.2 System librarians of five GAELIC libraries, two FRELICO libraries and three libraries in the Southern African region

System librarians provide technical support to staff, as well as the end-users of the system. They should to be conversant with all the modules to effectively provide assistance. This group was chosen to provide information on the system's performance, the benefits derived from using the system and on the ways in which they used the

support system provided by the vendor. In addition, system librarians were asked to comment on pitfalls to look out for during the implementation of the INNOPAC library system.

In addition to GAELIC and FRELICO's system librarians, BCA, NUST and UNAM's system librarians were purposely selected to provide the information described above. The libraries chosen are located in Botswana, Namibia and Zimbabwe and were used because they are in the Southern African region, and are similar to Lesotho libraries in terms of size, budget and types of clientele served. They were among the first to implement the INNOPAC library system. They can provide valuable insight into the general performance of the system and highlight problems and resolutions. System librarians are responsible for the overall management of a system and are considered the best candidates to provide information on the overall performance of the INNOPAC library system.

3.4.3 Library management of GAELIC and FRELICO

GAELIC and FRELICO management (university librarians/directors) was considered to be appropriate potential sources of information on cost, benefits, success factors and pitfalls to observe when implementing the system. As they have been involved since the inception of the consortia and provided guidance in the choice of a common library system, they are well positioned to answer key questions.

3.4.4 SEALS project manager

SEALS project manager was chosen to provide information on how the INNOPAC library system is performing in SEALS, which uses a central model for the management of its server. This model is different from a decentralised one used by both GAELIC and FRELICO. Through information gathered from the SEALS project manager, comparisons were made between central and decentralised models and informed recommendations were made on the best model for LELICO.

3.4.5 LELICO library heads

LELICO library heads were chosen to be the primary informants in this study because they have been in the forefront of the establishment of the consortium. Furthermore, they are in a position describe their expectations and requirements of a common library system. They also have a better understanding of the impact of the purchase of a system on their library budgets.

3.5 Sampling techniques

3.5.1 GAELIC

GAELIC comprises 16 academic libraries that are now merged into nine institutions. Five of these libraries and campuses form part of this study as they are considered to be a fair representation of GAELIC. They reside in the following institutions:

- Tshwane University of Technology (main campus);
- University of Limpopo (Medunsa campus);
- University of South Africa (main campus);

- University of the Witwatersrand; and
- Vaal University of Technology.

Library managers, system managers and representatives of all library sections (Acquisitions, Cataloguing, Circulations, OPAC and Serials) were represented. Three system librarians of these institutions were interviewed in an effort to gather additional information.

3.5.2 FRELICO

Five of FRELICO's libraries have now merged into two, while the other three have withdrawn membership (see section 2.4.3.1.3). The sample comprises libraries of the following institutions:

- Central University of Technology (main campus); and
- University of the Free State (main campus).

Only main campuses of these libraries form part of this study as they were the first to implement the system. Library managers, system librarians and Librarians of these campuses were considered to be the most knowledgeable to comment about the system. Librarians will be selected from each section of the library to ensure that users of each module are represented.

3.5.3 LELICO

Data will be collected from all 12 library heads of the Lesotho Library Consortium to ascertain their system requirements, their expectations, as well as their current budgets. Five of the library heads will be interviewed, namely, heads of the following institutions:

- Lesotho College of Education (LCE);
- Lesotho National Library Services (LNLS);
- Lerotholi Polytechnic (LP);
- Palace of Justice (PJ); and
- National University of Lesotho (NUL).

Three of these (LCE, LP and NUL) are the biggest and the oldest academic libraries in Lesotho. LNLS is a national library, which serves as the biggest public library in the country. PJ was selected to represent small special libraries, which form the majority of LELICO membership.

3.5.4 Other Southern African libraries

Three other libraries in the Southern African region using the INNOPAC library system were asked to comment about their experiences. These libraries belong to the following institutions:

- Botswana College of Agriculture,
- National University of Science and Technology; and
- University of Namibia.

3.6 Data collection methods

A multi-strategy approach called 'triangulation' was used to collect data. Triangulation is defined as "the use of more than one method or source of data in the study of a social phenomenon so that findings may be cross-checked" (Bryman, 2001: 509). Glazier and

Powell (1992: 6) recommend this approach as it tends to reflect and explain issues more accurately than any single measure. Furthermore, triangulation allows a researcher to have greater confidence in the research findings than if a single method was used (Clarke and Dawson, 1999: 88). The methods applied in this study to achieve triangulation are discussed below.

3.6.1 Questionnaires

A questionnaire is defined as a data collection technique through which people are asked to respond to the same set of questions in a pre-determined order (Gray, 2004: 187). Besides the advantage of allowing for wide coverage, questionnaires save a lot of time and effort since a single set of questions is duplicated and sent to many respondents. According to Gray (2004: 187), and Bryman (2001: 127), questionnaires are less costly and allow respondents to complete them at a time and place that suits them, thereby limiting any interference and bias that could be caused by the presence of the researcher.

Several disadvantages are associated with this data collection technique. Bennett (2003: 59), Bryman (2001: 127), and Gray (2004: 187) contend that the drawbacks of a questionnaire are:

- low response rate;
- difficulty in probing respondents since personal contact is lost;
- no allowance for respondents to ask questions should clarity be needed; and
- greater risk of missing data.

Some of the drawbacks raised above are addressed in this study by making questions as clear and unambiguous as possible. The questionnaires were preceded by a short explanation of the aims and objectives of the research. This gave respondents an insight into the study and elicited relevant and useful data. The questionnaires were as brief as possible so that respondents did not lose interest and thus fail to answer questions. The questionnaires also provided space for comments and suggestions for respondents to provide additional information.

A set of five questionnaires were prepared and administered to:

- GAELIC and FRELICO library heads;
- GAELIC and FRELICO systems managers;
- GAELIC librarians who use different library modules;
- LELICO library heads; and
- Systems managers in three institutions from other Southern African countries using the INNOPAC library system.

All questionnaires were pre-tested to ensure that they captured the requisite information. It was envisaged that there would be issues that require clarification during the pre-testing. The instruments were then adjusted accordingly to accommodate the necessary changes. The importance of pre-testing data collection instruments is highlighted by Bryman (2001) who contends that pre-testing may:

- help identify questions that make respondents uncomfortable;
- help identify questions that are not well understood;

- determine adequacy of instructions; and
- determine the flow of questions.

Finally, the questionnaires were submitted to the UP Ethics Committee for approval.

The questionnaires are attached as Appendices 2 – 6

3.6.2 Interviews

Interviewing is a data collection method defined by Dexter (in Clarke and Dawson: 72) as "a conversation with a purpose". Gray (2004) describes interviewing as "a conversation between people in which one person has the role of a researcher". Interviews can be used for both qualitative and quantitative research. Freebody (2003:133) divides the interview into three categories, namely, structured or fixed response, semi-structured and open-ended interviews. A structured interview tends to follow a fixed and standardised pattern. All the respondents are asked exactly the same questions and are often asked in the same order. This method of data collection tends to reduce error caused by interviewer variability. The semi-structured interview follows a pre-determined set of questions, but allows an interviewee to discuss aspects of the topic that are relevant to the interview. The open-ended interview follows a pre-determined format and the questions are open-ended.

Interviews are powerful data collection tools. They provide rich data and insights into the research, since they enable an interviewer to assess a situation and act accordingly (Bennett, 2003: 58). The point is summarised by Adams and Schvaneveldt (1985: 214) as follows: "the interviewer can 'read' people, assess their mood, probe, clarify, and seek

additional information in a variety of ways." Probing allows for more specific answers; questions can be repeated in instances where there are misunderstandings; and validity of data can be ascertained through non-verbal behaviour.

However, interviews tend to be expensive and time-consuming. In a large project, the staff needed for this kind of data collection technique includes administrators, field supervisors, and interviewers. A substantial amount of time and money is needed for activities such as preparation, preliminary visits and the interview itself. Interviews can also generate a lot of data that can be cumbersome and difficult to analyse (Bennett: 2003: 58).

From this study, the researcher used a semi-structured interview. Although it followed a formal interview guide, it gave respondents an opportunity to discuss issues that they believe to be relevant. The researcher believes that these interviews gathered information that could perhaps not be obtained through questionnaires, thereby strengthening the usefulness, reliability and validity of data. Interviewees included:

- Selected GAELIC and FRELICO systems managers;
- One system manager from the three selected libraries; and
- The project manager of SEALS.

Selected GAELIC and FRELICO system librarians were interviewed for additional information, explanations and clarification that emanated from questionnaires. Other informants were selected library heads from the LELICO libraries. In addition,

neighbouring Southern African countries that have implemented the INNOPAC library system were be interviewed on their experiences, as well as the general value of the system to their libraries, consortia and countries.

The researcher captured data on a tape recorder and with written notes. The interview schedules are attached as Appendices 8 and 9.

3.6.3 Observation (site visits)

Observation is another data collection technique used in this study. Busha and Harter (1980: 147) describe 'observation' as the object or subject under study is who subjected to close – usually visual – surveillance. According to Bryman (2001: 163), the five major types of observation research are:

- **Structured or systematic observation** – a technique in which a researcher employs explicitly formulated rules for the observation and recording of behaviour;
- **Participant observation** – which entails prolonged immersion of an observer in a social setting in which he or she seeks to observe the behaviour of members of that setting and to elicit the meanings they attribute to their environment and behaviour;
- **Non-participant behaviour** – an observer observes but does not participate in what is going on;

- **Unstructured observation** – does not use any observation schedule, as is the case with structured observation, but it aims at recording as much information as possible to develop a narrative account of the object being observed;
- **Simple observation** – an observer is unobtrusive and is not seen by those being observed. The observer therefore has no influence over the situation being observed.

The advantage of observation as a data collection technique is that it provides a picture of the context in which something takes place (Bennett, 2003: 59). Bias caused by social interaction is to a great extent eliminated in this method. As Bailey (1978: 249) points out, "a researcher asking the respondent about his or her own behaviour will encounter all sorts of difficulties, including deliberate denial of certain behaviours or memory failure. But with this method, an observer can watch the situation and get a true picture of what is happening". Another advantage of the observation technique is that it can yield information on aspects of which participants are unaware. On the other hand, observation requires time for data collection and analysis (Bennett 2003: 59). Data collected in this way is often difficult to quantify and categorise systematically. This may make it difficult for a researcher to reach any conclusions.

The study followed a structured observation technique, and an observation schedule. Specified categories of points were used. An explanation on observed information was allocated to those categories. The objectives of the observation or site visits were to examine the operations of the INNOPAC library system. This involved aspects such as

which modules are installed, and which are not yet installed, the security features of the system, as well as the accessibility and availability of any supportive material such as manuals. The visits were expected to shed light on the system's performance. The following sites from FRELICO were visited:

- Central University of Technology (main campus); and
- University of the Free State (main campus).

From GAELIC, libraries of the following institutions were visited:

- Tshwane University of Technology (Pretoria campus);
- University of the Witwatersrand (main campus); and
- University of South Africa (main campuses).

These are among the biggest libraries in both FRELICO and GAELIC. They were also among the first to implement the INNOPAC library system and are considered to offer a fair representation of their consortia.

The observation schedule is detailed in Appendix 7.

3.6.4 Document analysis

In-house documents offer a wide range of information. They can, for example, appear in the form of personal documents, official documents, mass media outputs and virtual outputs, such as the Internet (Bryman, 2001: 369). Documents are important sources of information when one is looking for information such as goals and objectives of the institutions/organisations under study. Adeogun's study has shown that documents can

reveal internal problems and aspirations of the library as an organisation (Adeogun, 2004: 75).

This study undertook a thorough analysis of documents generated by and about all the stakeholders of the research topic in the form of reports and minutes of meetings, brochures, and publications. Documents were collected from GAELIC, FRELICO, LELICO, Southern African countries, Innovative Interface (vendor) and websites. Information obtained from websites and reports of consortia under study were used to guide the construction of questionnaires and to assist in the site visits.

The GAELIC and FRELICO annual reports provided historical information on the implementation of the system, when and how decisions were made, as well as the overall performance of the system within these consortia. LELICO reports shed light on matters relating to the direction the consortium is taking with regard to the common library system as a tool for its co-operative measures. Documents emanating from other Southern African countries were used to gather information on the INNOPAC library system's performance. Publications on the INNOPAC library system and the Innovative (vendor) gave insight into the system's performance in other countries and into strategies that the vendor has in place to strengthen the relationship with its customer base. This included future plans, growth pattern in developing countries and future plans for the system.

3.7 Issues relating to data quality

Reliability and validity were mentioned as the two main criteria for determining data quality (Bryman, 2001; Gray, 2004; Hernon and McClure, 1990; Yin: 1994). The two concepts are related in that validity presumes reliability – a measure is not reliable, it cannot be valid (Bryman, 2001: 74).

3.7.1 Reliability

Bryman (2001) and Gray (2004) agree that reliability is a measure of a research instrument's consistency. Good reliability of an instrument would mean that one would get the same result when measuring something at different times. In other words, if one follows the same procedure for measurement, then one would get the same result. Gray (2004) argues that reliability can be increased by confirming and comparing results with those obtained from other sources. The three factors that determine reliability are:

- **Stability** – This involves steadiness or constancy. An instrument is said to be stable if it is administered to a group and then re-administered and there is a little difference over time.
- **Internal reliability** – Here one looks at whether or not the indicators that make up the scale are consistent. This would be applicable where a multiple-item measure is used and the respondent's answers to each question are combined to form an overall score.
- **Inter-observer consistency** – This refers to uniformity of results where subjective judgement is involved. For example, in content analysis where researchers would have to decide on ways to categorise items.

3.7.2 Validity

Gray (2004: 219) contends that an instrument is valid if it measures what it was intended to measure. He adds that an instrument should cover all research issues both in terms of content and detail. Validity is broken down into three categories by Yin (1994: 33), namely:

- **Construct validity** examines correct operational measures for the concept under study. For the case study design, Yin (1994: 34) suggests that a researcher uses multiple sources of evidence, establishes a chain of evidence and has key informants review the final draft report.
- **Internal validity** establishes whether or not certain conditions lead to other conditions. Pattern-making, explanation-building and time series analysis are suggested by Yin (1994: 34) as tactics to increase internal validity.
- **External validity** establishes whether or not research findings can be generalised. According to Yin (1994: 36), replicating the study is a way of finding out if the same results would be obtained.

In this study, the researcher ensured data quality by addressing both reliability and validity. The following steps were taken:

- Triangulation was used as a multi-method approach to provide greater confidence in the findings as it combines the strengths of different data collection methods (Clarke and Dawson, 1999: 88).

- The research instruments were pre-tested using a sample of respondents to ensure that they cover the research questions in terms of content and detail (Bryman: 2001: 155).
- The questionnaires were concise and clear to increase response rate and to avoid ambiguity. Furthermore, a brief note on the aims of the research was provided to give respondents the context of the research. This positively influenced both the relevance and usefulness of the information collected.
- Respondents were not asked to provide their names so as to encourage freedom of expression and to allow a true picture of the situation.
- Key informants were interviewed to gain more information, which was not obtainable from the questionnaires alone. Interviewees were probed to give more specific answers and asked to elaborate on salient issues.

3.8 Data analysis and interpretation

Data analysis involves a process of thorough examination and interpretation. Dey (1993: 30) describes data analysis as "the process of resolving data into its constituent components, to reveal its characteristic elements and structure". It is through analysing and interpreting data that one can make sense of the information collected. This study collected quantitative and qualitative data. Data will be analysed according to its type. Data analysis is dealt with in Chapter 4.

3.8.1 Analysis of quantitative data

Quantitative data was mainly generated from questionnaires administered to different respondents as discussed in section 3.6.1. The researcher used computer software called the Statistical Package for Social Scientists (SPSS) to capture and analyse the quantitative data. This software allowed the researcher to define variables and enter data. It then generates useful statistical components of recorded information such as bar-charts, pie-charts, frequency tables and histograms. It also calculates statistical tendencies (mean, median and mode) and dispersion (range and standard deviation) (Bryman, 2001)

3.8.2 Analysis of qualitative data

Qualitative data was generated mainly by interviews and observations made during site visits. The researcher used Dey's model of qualitative data analysis, which describes qualitative data analysis as, "the related process of describing, classifying and connecting data" (Dey, 1993: 30). The three elements are described as follows:

- Description involves a thorough narration of the phenomenon under study, including context of action, intentions of the actor and the process in which the action is done;
- Classification looks at the sorting of data according to its different elements; and
- Connection examines patterns in data and looks for singularities, regularities and variations.

Another step in the data analysis process is the interpretation of data, which is discussed fully in Chapter 5. Interpretation of data seeks to explain findings, answers 'why'

questions, attaches significance to particular results and describes patterns (Patton, 2002: 373).

3.9 Conclusion

This chapter described the methodology used to seek answers to the research questions posed in Chapter 1. It enumerated the research design, sampling techniques and the data collection techniques used. The chapter also discussed issues pertaining to reliability and validity, which affect data quality. It concluded by showing how the quantitative and qualitative data generated in this research was analysed. Chapter 4 deals with the presentation of the data.

CHAPTER FOUR

DATA ANALYSIS

4.1 Introduction

This chapter presents the data collected from GAELIC, FRELICO and LELICO libraries and from libraries in three other Southern African countries, namely, Botswana, Namibia, and Zimbabwe. Data tabled in this chapter will be interpreted in Chapter 5.

The data was collected using the following data collection instruments:

- Questionnaires;
- Interviews;
- Site visits, and
- Analysis of policy and other relevant documents.

The questionnaires and interview schedules are attached as Appendices 1 to 9 at the end of the study.

4.1.1 Questionnaire response rate

Table 6 Questionnaires received per institution

LIBRARIES		No. of responses				Response rate (%)
		Lib. heads	Sys. man	Lib. profs	TOTAL	
GAELIC	MEDUNSA	1	1	8	**10**	**100**
	TUT	1	1	6	**8**	**80**
	UNISA	1	1	6	**8**	**80**
	VUT	–	1	6	**7**	**70**
	WITS	1	1	6	**8**	**80**
	Sub -total	4	5	33	**41**	
FRELICO	CUT	1	1	–	**2**	**20**
	UFS	1	1	18	**20**	**200**
	Sub -total	2	2	20	**22**	

LELICO	AR	1	–	–	**1**	**100**
	IDM	1	–	–	**1**	**100**
	LAC	1	–	–	**1**	**100**
	LCE	1	–	–	**1**	**100**
	LHDA	1	–	–	**1**	**100**
	LIPAM	1	–	–	**1**	**100**
	LNLS	1	–	–	**1**	**100**
	LP	1	–	–	**1**	**100**
	LPPA	1	–	–	**1**	**100**
	NUL	1	–	–	**1**	**100**
	PL	1	–	–	**1**	**100**
	PJ	1	–	–	**1**	**100**
	Sub -total	12	0	0	**12**	
Other Southern African libraries	BCA	0	1	0	**1**	**100**
	NUST	0	1	0	**1**	**100**
	UNAM	0	1	0	**1**	**100**
	Sub -total	0	3	0	**3**	
TOTAL		**18**	**10**	**53**	**78**	

Key: Lib.heads – Library heads
Sys.man – System managers
Lib.profs – Library professionals

A total of 78 completed questionnaires were received from GAELIC, FRELICO, LELICO and the three Southern African libraries. The five GAELIC libraries that responded to questionnaires were:

- University of Limpopo – MEDUNSA campus;
- Tshwane University of Technology;
- University of South Africa;
- University of the Witwatersrand; and
- Vaal University of Technology.

A total of 41 responses were received from GAELIC.

Only two FRELICO member libraries out of five implemented the INNOPAC library system. These were the two libraries that were included in this study. Both FRELICO libraries responded to the questionnaires, namely:

- Central University of Technology; and
- University of the Free State

A total of 20 responses were received from FRELICO.

Different sets of questionnaires were sent to library heads, system managers and library professionals on GAELIC and FRELICO. Library heads are library personnel who oversee the overall management of the library. Their opinions were sought for insights into ways in which the system affected their libraries' performance, and the benefits derived from membership of library consortia. System managers are librarians who manage and maintain the system. They have to ensure that the system is running smoothly at all times. They were asked to comment on the overall performance of the system. Library professionals are trained librarians who use at least one of the system modules on a regular basis. They were asked to comment on their experiences of using the system, and on the performance of various modules.

Each library was given 10 questionnaires: one for library management, one for the system manager and six for library professionals, preferably heads of departments, who are knowledgeable about the operations of various modules. The response rates are shown in Table 6

The library heads of LELICO member libraries were requested to complete questionnaires. The LELICO libraries belong to the following institutions:

- Agricultural Research (AR);
- Institute of Development Management (IDM);
- Lesotho Agricultural College (LAC);
- Lesotho College of Education (LCE);
- Lesotho Highlands Development Authority (LHDA);
- Lesotho Institute of Public Administration and Management (LIPAM);
- Lesotho National Library Service (LNLS);
- Lesotho Planned Parenthood Association (LPPA);
- Lerotholi Polytechnic (LP);
- National University of Lesotho (NUL);
- Palace of Justice (PJ); and
- Parliament of Lesotho (PL).

All 12 LELICO library heads responded to the questionnaire. They were asked to comment on benefits derived from LELICO membership, expected benefits from a common library system, and to rate the importance of certain system properties of the proposed LELICO common library system.

Responses were also received from three Southern African libraries that currently use the INNOPAC library system. It was considered necessary to include these as they could give a stronger basis for comparison with Lesotho. Libraries in these countries have more

similarities with those in Lesotho in terms of size, budgets and access to resources. Their inclusion could improve the validity of the data of the study. The institutions selected from the three Southern African countries (Botswana, Namibia, and Zimbabwe) were the:

- Botswana College of Agriculture (BCA) Library;
- National University of Science and Technology (NUST) Library; and the
- University of Namibia Library.

Responses received are shown in Table 6

4.1.2 Interviews

To clarify issues raised in the questionnaires, a total of 12 follow-up interviews were conducted. Interviews were undertaken with three selected system managers from GAELIC, two system managers from the FRELICO libraries using the INNOPAC library system, five library heads of LELICO, the project manager of SEALS, and the system manager of BCA. Table 7 shows categories of interviews conducted and institutions involved.

Table 7 Institutions where interviews were conducted

System managers			SEALS	Library heads LELICO
GAELIC	**FRELICO**	**Southern African**		
• TUT • UNISA • WITS	• UFS • CUT	• BCA	Project manager	• LCE • LP • NUL • LNLS • PJ

In each case where the INNOPAC library system was used, the interview was followed by visits to sections of the library for observation. The BCA interview was done telephonically and was therefore not possible to do a site visit for this library.

In addition to questionnaires, interviews and site visits, relevant documents were analysed to supplement the information obtained. These include the following:

- GAELIC annual reports;
- Minutes of meetings of the GAELIC INNOPAC Working Group;
- *GAELIC Institutional Members Survey 2005* by Underwood and Smith;
- FRELICO annual reports;
- LELICO constitution document;
- LELICO annual reports;

- Minutes of LELICO's executive committee; and
- Innovative Interface Inc. (vendor) development plans.

These documents were examined to whenever the information they contain was required for clarification.

4.1.3 Challenges Encountered

At the commencement of data collection in 2006, the researcher was alerted to a document entitled, "GAELIC Institutional Members Survey 2005", which covered some elements of the researcher's questionnaires prepared for GAELIC, especially the 'Library Management Questionnaire'. It was decided that this document should form part of the study's literature review. The results contained in the document would be compared with those of the current study to identify similarities and differences. The document in question was added to the key documents for analysis in the study. (see section 2.8.2.4)

Another problem encountered was that the Central University of Technology (CUT) library of FRELICO was understaffed at the time the questionnaires were distributed (June 2006). Thus, the researcher decided to increase the sample size of library professionals in UFS from nine to 18, so that FRELICO would be fairly represented.

4.1.4 Categories of analysis

There are two major aspects of this study. The first relates to the INNOPAC library system, as evaluated by GAELIC, FRELICO, and other Southern African libraries; the second relates to how LELICO will implement the INNOPAC system based on the

lessons learned from these libraries. The following categories of analysis were identified to cover these two aspects:

INNOPAC Library System

- System's performance in GAELIC, FRELICO and selected Southern African libraries;
- Problems encountered with the system;
- Impact on GAELIC and FRELICO members;
- Cost-benefit analysis of the system;
- Comparison between a central and decentralised server model; and
- Success factors for the management of a library consortium and lessons learnt.

LELICO

- Automation status of LELICO member libraries;
- Expected and derived benefits and proposed activities for LELICO;
- Requirements for implementing the INNOPAC library system in LELICO; and
- Funding of LELICO member libraries

4.1.5 Pre-testing of data collection instruments

The effectiveness in capturing the correct information was tested in four sets of questionnaires. UNISA library was selected to pre-test three questionnaires for the categories of head of libraries, system managers, and library professionals. The heads of

Lesotho Polytechnic and Lesotho College of Education libraries were asked to complete pre-test questionnaires as LELICO members.

Pre-testing revealed weaknesses that necessitated modifications to some questions. For example, in the case of the LELICO library heads questionnaire, one question required a complete rephrasing for better clarity. In other instances, questions were either added or deleted because of the kind of information sought by the researcher. All inconsistencies were reviewed and the necessary changes made to the final questionnaires.

4.2 INNOPAC library system performance

4.2.1 Introduction

Library professionals of GAELIC and FRELICO were asked to comment on the performance of modules that they use on a day-to-day basis. In addition, they had to evaluate the general performance of the system in terms of:

- functionality;
- usability;
- support and training;
- system management; and
- system vendor.

Another questionnaire was distributed among system managers of GAELIC, FRELICO, and the three Southern African institutions. System managers were asked to indicate which modules were available in their libraries their performance. In cases where

modules were not yet installed, they had to indicate the reasons. They were also asked to rate the performance of the system in terms of its operations, functionality, usability, support and training, as well as the vendor.

Library managers of GAELIC and FRELICO were asked to comment on the value of consortium membership and the factors necessary for effective management. They also had to comment on the value of the INNOPAC library system in their libraries. Furthermore, they were asked to identify any problems that they had encountered with the system, and how they dealt with those problems.

Responses indicated that all the libraries use the basic library modules of the INNOPAC library system, namely, Acquisition, Cataloguing, OPAC, Circulations and Serials. Although Management Information and Course Reserve modules come with the installation package, there are some libraries that have not started using the Course Reserve module. Some libraries have decided to purchase additional modules according to their individual needs. These modules include: Bursar Office Inter Library Loan, Web Access Management, Electronic Resource management, Media, WebBridge, Metafind and E-Checkin, and are shown in Table 8.

Table 8 Modules used per institutional library

	Acquis	Catal	Circ	OPAC	Serials	Man Info	Web Bridge	ERM	Burs Off	Course Resv	WAM	Media	Meta find	E-Chec
MEDUNSA	√	√	√	√	√	√								
TUT	√	√	√	√	√	√								
UNISA	√	√	√	√	√	√	√	√	√	√	√	√	√	
WITS	√	√	√	√	√	√						√		
VUT	√	√	√	√	√	√				√	√	√		
UFS	√	√	√	√	√	√					√			
CUT	√	√	√	√	√	√		√	√				√	

Key: Acquis – Acquisitions
Bur Off – Bursar Office
Catal – Cataloguing
Circ – Circulations
Course resv – Course reserve
Man Info – Management Information
ERM – Electronic Resource management;
WAM – Web Access management;
E-Chec – E-Checkin

The main reason cited for not installing some of the modules is financial. One library (UFS) mentioned that although it had installed Bursar Office, it has not been used owing to incompatibility with the university's main frame.

4.2.2 Performance of the system

According to responses received, the overall performance of various modules is good. As indicated in Table 9, most library professionals (62%) referred to their modules as 'good', while 25% rated their modules as 'excellent'. The OPAC module had the highest number of 'excellent' ratings (50%), while Cataloguing had the highest (76%) number of 'good' ratings.

Table 9 Library professionals rating of modules

	Very Poor	Poor	Satisfactory	Good	Excellent	TOTAL
Acquisitions	0 0%	1 10%	2 20%	7 70%	0 0%	10
Cataloguing	0 0%	0 0%	1 6%	13 76%	3 18%	17
Circulations	0 0%	0 0%	2 13%	6 37%	8 50%	16
OPAC	0 0%	0 0%	3 16%	10 56%	5 28%	18
Serials	0 0%	0 0%	0 0%	6 86%	1 14%	7
TOTAL	0 0%	1 1.5%	8 11.5%	42 62%	17 25%	68

System managers were also generally satisfied with the performance of various modules (see Table 10). Fourteen per cent of system managers said the modules were 'satisfactory', 74% gave the modules a 'good' rating, while 15% said the modules were 'excellent'. The most highly rated module was Circulation, which was rated 'good' by all system mangers.

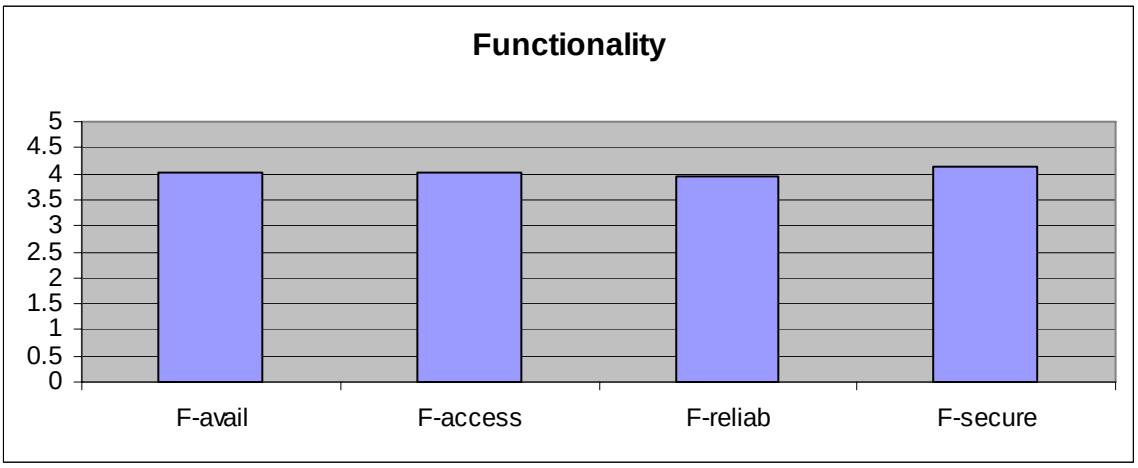
Table 10 System managers rating of modules

	Very Poor	Poor	Satisfactory	Good	Excellent	TOTAL
Acquisitions	0 0%	0 0%	1 14%	5 72%	1 14%	7
Cataloguing	0 0%	0 0%	1 14%	4 58%	2 28%	7
Circulations	0 0%	0 0%	0 0%	7 100%	0 0%	7
OPAC	0 0%	0 0%	1 14%	6 86%	0 0%	7
Serials	0 0%	0 0%	1 14%	4 58%	2 28%	7
TOTAL	0 0%	0 0%	4 11%	26 74%	5 15%	35

4.2.2.1 Functionality

The system scored well on functionality. All components of systems functionality, namely, availability, accessibility, reliability, and security scored above 3.5 on a scale of 1 to 5.

Table 11 Functionality

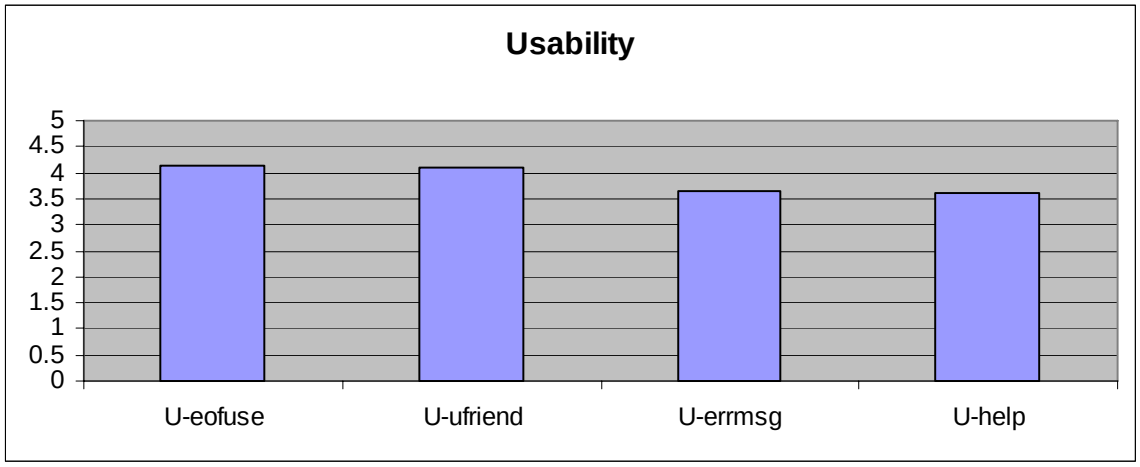


Key: **F-avail – availability**
F-access – accessibility
F-reliab – reliability
F-secure – security

4.2.2.2 Usability

Table 12 shows very high scores for 'ease of use' and 'user friendliness'. Although 'error messages' and 'help messages' scored above average (2.5), they were relatively low compared with the rest.

Table 12 Usability

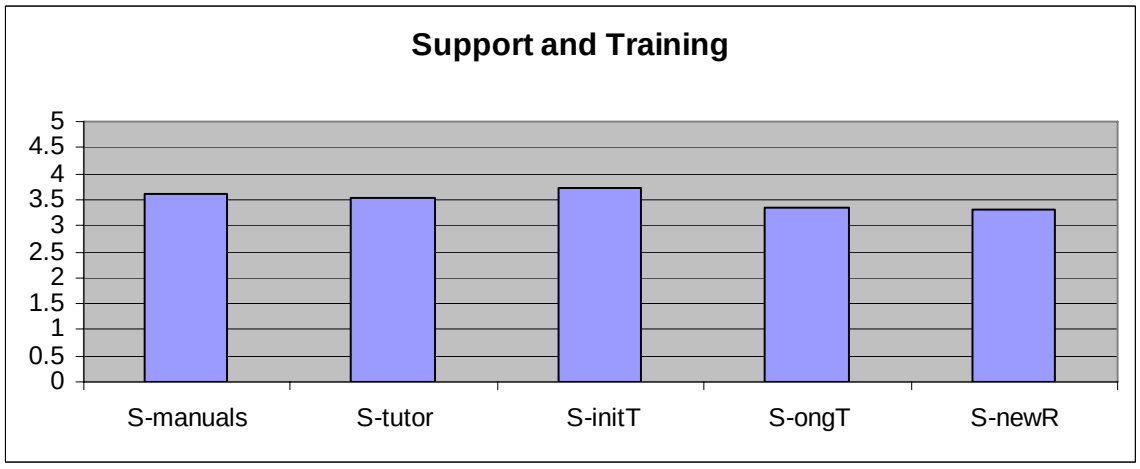


Key: **U-eofuse – ease of use**
U-ufriend – user friendliness
U-errmesg – error messages
U-help – help messages

4.2.2.3 Support and training

Support and training was rated in terms of manuals, tutorials, initial and ongoing training and new release/updates. All components were rated positively, with initial training scoring the highest (3.7).

Table 13 Support and training

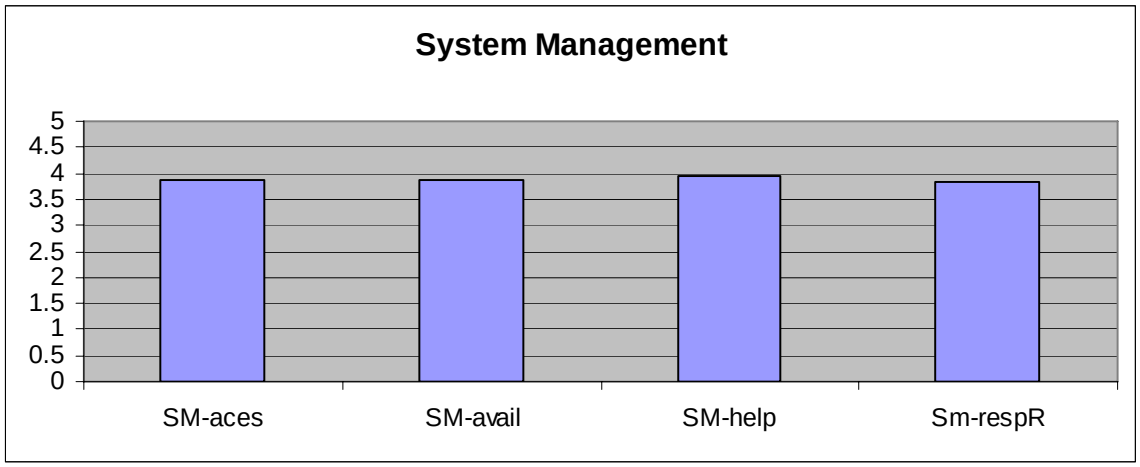


Key: **S-manuals – manuals**
S-tutor – tutorials
S-initT – initial training
S-ongT – ongoing training
S-newR – new releases/updates

4.2.2.4 System management

System management was another component that library professionals were asked to rate. As shown in Table 14, system management in member libraries is good. While 'helpfulness' scored relatively high, 'response rate' was relatively low.

Table 14 System management

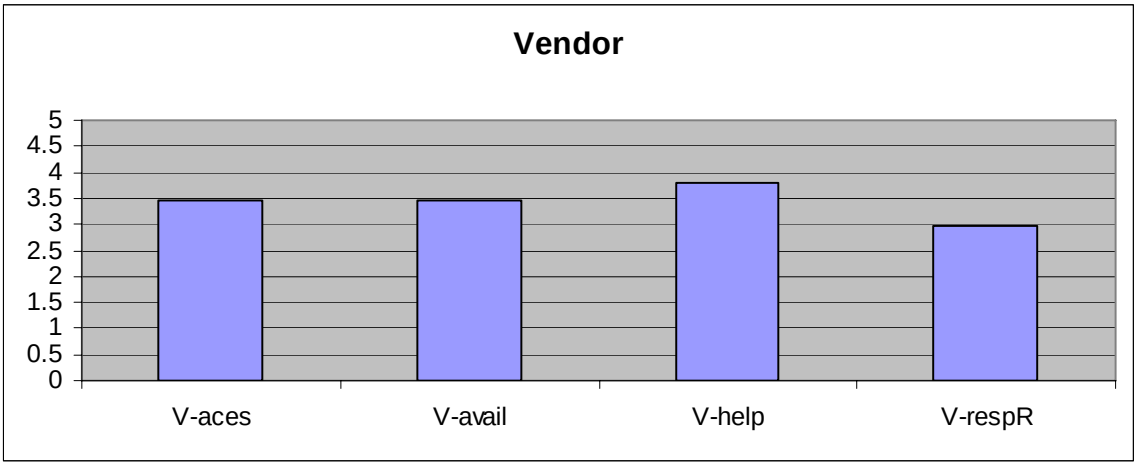


Key: **SM-aces – accessibility**
SM-avail – availability
SM-help – helpfulness
SM-RespR – response rate

4.2.2.5 Vendor

System managers were asked to rate the vendor in terms of the same attributes. Accessibility, availability, and helpfulness got similar scores (3.72); response rate was the lowest (2.9).

Table 15 Vendor



Key: SM-aces – accessibility
SM-avail – availability
SM-help – helpfulness
SM-RespR – response rate

4.2.3 Membership and value of Innovative listserv, Innovative User Groups and GAELIC INNOPAC System Workgroup

System managers were asked to indicate whether or not they are members of the Innovative User Group, Innovative User Group: South Africa, and GAELIC INNOPAC System Workgroup. They were also asked to indicate if they subscribed to the Innovative User Group listserv. The value of these user groups and listserv was also evaluated.

4.2.3.1 Membership of Innovative listserv, Innovative User Groups and GAELIC INNOPAC System Workgroup.

All system managers subscribe to the Innovative listserv and user groups, except the Wits system manager who does not subscribe to the Innovative User group. Membership of

support mechanisms (listserv and user groups) of Innovative and GAELIC INNOPAC System Workgroup are shown in Table16.

Table 16 Membership of Innovative listserv, User Groups, and GAELIC INNOPAC System Workgroup

	IUG	IUG listserv	IUG:SA	GISW
MEDUNSA	Yes	Yes	Yes	Yes
TUT	Yes	Yes	Yes	Yes
UNISA	Yes	Yes	Yes	Yes
WITS	No	Yes	Yes	Yes
VUT	Yes	Yes	Yes	Yes
UFS	Yes	Yes	Yes	Yes
CUT	Yes	No	Yes	Yes

Key: IUG – Innovative User Group
IUG Listserv – Innovative User Group Listserv
IUG: SA – Innovative User Group: Southern Africa
GISW – GAELIC INNOPAC System Workgroup

4.2.3.2 Value of Innovative listserv, User Groups and GAELIC INNOPAC System Workgroup

Table 17 gives system managers' comments on the value of the Innovative listserv, user groups and the GAELIC INNOPAC System Workgroup.

Table 17 Value of Innovative listserv, User Groups and the GAELIC INNOPAC System Workgroup

IUG	IUGL	IUG:SA	GISW
– Information sharing (new updates, products, releases, IUG conference) – Sharing of expertise	– Information sharing (new developments) – Problem solving	– Information sharing – Sharing of expertise – Problem-solving – Networking	– Sharing of skills/expertise – Problem-solving – Negotiating of group pricing

The main value of the Innovative support mechanisms seems to be information sharing. One manager mentioned that there is plenty of irrelevant information on the IUG listserv and that she seldom makes use of the listserv.

4.2.4 Problems encountered with the system

As indicated in Table 18, problems encountered include slow response rate by the vendor, high cost of additional training, poor e-mail support, and screen freezing. The problems have been ranked according to their frequencies.

Table 18 Problems encountered with the system

Rank	Nature of problem
3	Minor problems
3	Slow response rate from the vendor
2	Email support – time differences
2	High cost of additional training
1	Screen freezing
1	Occasional software problems

Some of these problems were solved by reporting them to CSDirect, which is the vendor's helpdesk. Others were solved by contacting other libraries that use the same system. Other minor problems were solved with new releases.

4.3 Performance of the INNOPAC library system in three selected libraries in other Southern African countries

4.3.1 Introduction

Three libraries in other Southern African countries, namely Botswana, Namibia, and Zimbabwe were asked to evaluate the INNOPAC library system. As indicated in Section 4.1. the three institutions selected were the Botswana Agricultural College (BCA), the University of Namibia (UNAM) and the National University of Science and Technology (NUST) in Zimbabwe. At the time of administering the questionnaire (Oct. – Nov. 2006) BCA Library had used the system for four years, UNAM Library for 11 months and NUST Library for three years. Both BCA and NUST were on manual systems before installing the INNOPAC library system, while UNAM used URICA. The three libraries were using basic modules, namely, Acquisitions, Cataloguing, Circulations, OPAC, and Serials.

4.3.2 Performance of the system in BCA, UNAM, and NUST libraries

4.3.2.1 Library modules

System managers were asked to evaluate the performance of the Acquisitions, Cataloguing, Circulations, and Serials modules. Table 19 below indicates how each

module was rated in each library. BCA and NUST rated the modules highly and UNAM rated most modules satisfactory.

Table 19 Performance of modules in BCA, UNAM, and NUST libraries

	Acquisitions	Cataloguing	Circulations	Serials	OPAC
BCA	Good	Excellent	Excellent	Excellent	Excellent
UNAM	Poor	Satisfactory	Good	Satisfactory	Satisfactory
NUST	Good	Good	Excellent	Good	Excellent

4.3.2.2 Functionality

The system's functionality was evaluated against 'availability', 'accessibility', 'reliability', 'security', 'ability to integrate with other systems', 'ability too customise', and 'upgradeability'. Responses are shown in Table 20. In general, the system's functionality was rated positively.

Table 20 Performance on system functionality

	Availability	Accessibility	Reliability	Security	Ability to integrate	Ability to customise	Upgradeability
BCA	Excellent	Excellent	Excellent	Excellent	Good	Good	Excellent
UNAM	Good	Satisfactory	Good	Good	Satisfactory	Good	Good
NUST	Good	Good	Good	Good	Satisfactory	Good	Excellent

4.3.2.3 Usability

Usability of the system was evaluated in terms of 'user-friendliness', 'ease of use', 'error messages', and 'help messages'. usability elements were well rated except 'help messages' which were poorly rated by UNAM. Responses are tabulated in Table 21 below.

Table 21 Performance on Usability

	User-friendliness	**Ease of use**	**Error messages**	**Help messages**
BCA	Good	Excellent	Good	Good
UNAM	Satisfactory	Good	Satisfactory	Poor
NUST	Good	Good	Satisfactory	Good

4.3.2.4 Support and training

The support and training component was assessed in terms of Manuals, Tutorials, Initial training, Ongoing training, and New Releases/Updates. Support and training seems to be satisfactory, as reflected in Table 22 below.

Table 22 Performance on Support and Training

	Manuals	**Tutorials**	**Initial training**	**Ongoing training**	**New releases/updates**
BCA	Good	Good	Good	Satisfactory	Good
UNAM	Poor	Satisfactory	Poor	Satisfactory	Not given
NUST	Excellent	Satisfactory	Satisfactory	Not given	Good

4.3.2.5 System vendor

The vendor of the INNOPAC library system was evaluated in terms of accessibility, availability, helpfulness and response rate. Response rate was the only component that was rated as poor. The remainder of the vendor elements was rated fair. Performance of the vendor is shown in Table 23 below.

Table 23 Performance of the system vendor

	Accessibility	**Availability**	**Helpfulness**	**Response rate**
BCA	Good	Good	Good	Satisfactory
UNAM	Satisfactory	Satisfactory	Poor	Poor
NUST	Good	Good	Satisfactory	Poor

4.3.2.6 Membership and value of Innovative listserv and User Groups

Only one system manager (UNAM) subscribes to the IUG listserv and User Groups. She says there is little value in the IUG listserv and she has not been using it. The reason she gives is that there are "too many messages". The only benefit she derives from the IUG: SA is the attendance of the annual conference. She also mentioned that although the UNAM library is a member of GAELIC, the library does not benefit much because of distance.

4.4 Impact of the INNOPAC library system on libraries

4.4.1 Introduction

All GAELIC and FRELICO libraries involved in this study were using other systems before they converted to the INNOPAC library system. As Table 24 shows, previous systems included Erudite, ITS, Inmagic Plus and In-house systems. They all acquired INNOPAC through GAELIC which received funding from the Andrew Mellon Foundation in the USA.

Table 24 Previous library systems used by selected GAELIC and FRELICO members

	Erudite	In-house system	InmagicPlus	ITS
MEDUNSA	√			
TUT				√
UNISA		√		
WITS		√		
VUT				
UFS		√		
CUT			√	

Data from the questionnaires and interviews indicate that the main reasons for changing to the INNOPAC library system was its versatility and the availability of donor funding to purchase the new system. Other reasons are tabulated below with their respective rankings – the higher the ranking, the greater the number of responses.

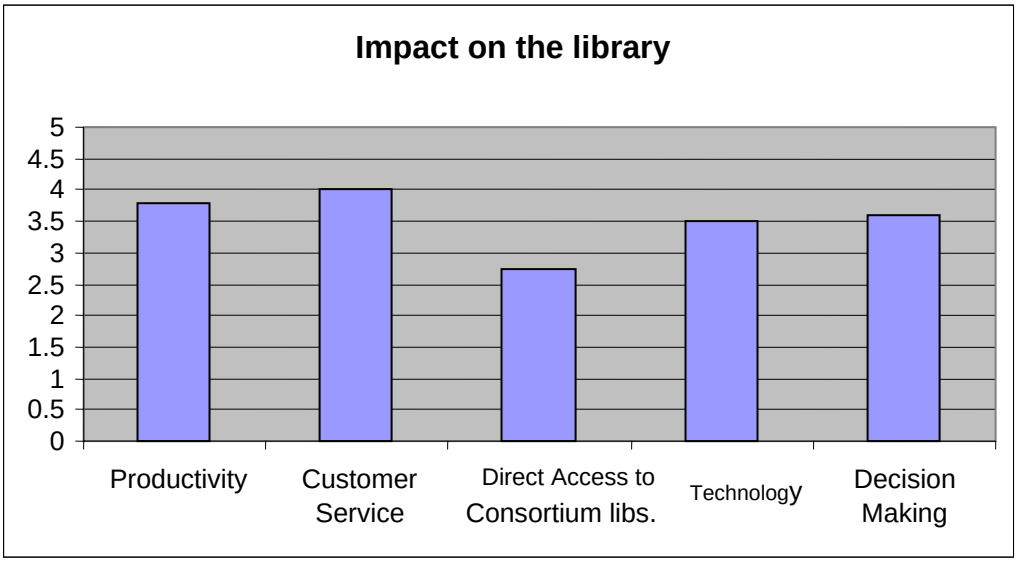
Table 25 Reasons for changing to the INNOPAC library system

Rank	Reasons for changing to the INNOPAC library system
8	Functions available
7	Availability of funding
4	Uniformity with other libraries
4	The need to co-operate with other libraries
3	Problems with previous system
1	Professionalism of commercial vendor

4.4.2 Impact of the INNOPAC library system on selected GAELIC and FRELICO libraries

Implementation of the INNOPAC library system in both GAELIC and FRELICO libraries seems to have had a positive impact in terms of customer service, productivity, cost-saving, and contribution to decision making in libraries. The system seems to have had little impact on better access to other consortia members. Table 26 shows the average score of various components. The rating is between 1 and 5, where 1 represents the least impact and 5 the greatest impact.

Table 26 Impact of the INNOPAC library system on selected GAELIC and FRELICO libraries



4.4.3 Benefits derived from using the INNOPAC library system

Benefits derived by consortia members from using the INNOPAC library system are tabulated below. The main benefits mentioned are its effectiveness and reliability in executing library operations. A high ranking indicates that more managers mentioned the corresponding benefit.

Table 27 Benefits derived from using the INNOPAC library system

Rank	Nature of benefit derived from using INNOPAC
6	Effective and reliable system
5	Wide range of functions available
4	Shared training and expertise
3	Large user group
2	System up-to-date with library developments

1	Comprehensive documentation and manuals
1	Excellent customer support

4.5 Cost-benefit analysis of the INNOPAC library system

4.5.1 Costs incurred by libraries using the INNOPAC library system

Table 28 shows the nature of costs incurred by selected libraries. These include cost for installation, running and equipment costs. Other costs relate to additional training, staffing and purchasing of additional modules.

Table 28 Nature of costs incurred and their costs in SA Rands (1Rand = $7.09 – 02 August 2007)

Institution	Installation	Running	Equipment	Others	TOTAL (excl. Others)
MEDUNSA	Not given	230 000	300 000	Additional training – 30 000	680 000
TUT	231 519	1 400 000	26 567	Conversion: 840 000 Salary of system librarian	2 498 086
UFS	1 380 000	95 000	50 000	Additional modules – 370 000	1 525 000
UNISA	2 965 600	1 053 695	102 000	Staffing – 741 455	4 121 295

The highest expense was R4 121 295, which was incurred by UNISA and the lowest was that of MEDUNSA which amounted to R680 000 and excluded installation costs and additional training, as reflected in Table 28.

4.5.2 Analysis of costs against the benefits derived from the INNOPAC library system

All GAELIC and FRELICO members felt that although the system is expensive, the benefits derived outweigh the costs. The system is considered to be cutting edge technology that responds to the requirements of libraries. Its regular updates and enhancements enable better servicing of changing needs of users.

Follow-up interviews indicate that foreign exchange rates exacerbate the costs. They also revealed that although initial training is free the cost of additional training remains very high. GAELIC holds collective training sessions for its members, which tends to reduce the overall costs by individual libraries.

4.6 Benefits of consortium membership

4.6.1 Motivation for joining a consortium

All five GAELIC libraries under investigation joined GAELIC when it was established in 1996. The two FRELICO libraries joined FRELICO in 1998, but installed the INNOPAC library system as a sub-node of GAELIC. The seven libraries were asked about their motivation for joining, and the responses are summarised in Table 29, together with their respective rankings, the higher the ranking, the greater the number of responses.

Table 29 Motivation for joining a consortium

Rank	Motivation for joining a consortium
5	Access to a common library system

5	Resource sharing
3	Joint purchasing
3	Joint development opportunities
2	Networking
1	Donor funds

4.6.2 Benefits derived from consortium membership

With regard to derived benefits from consortium membership, all expectations seem to be met, although to a varying degree. Collective training and support from members are other benefits that members gain from membership. Table 30 lists benefits identified by respondents, and their respective rankings.

Table 30 Benefits derived from consortium membership

Rank	**Benefits derived from consortium membership**
5	Access to a common library system
4	Joint purchasing of electronic resources
3	Extensive networking with other libraries
3	Support from other libraries
2	Training opportunities
1	Financial gain

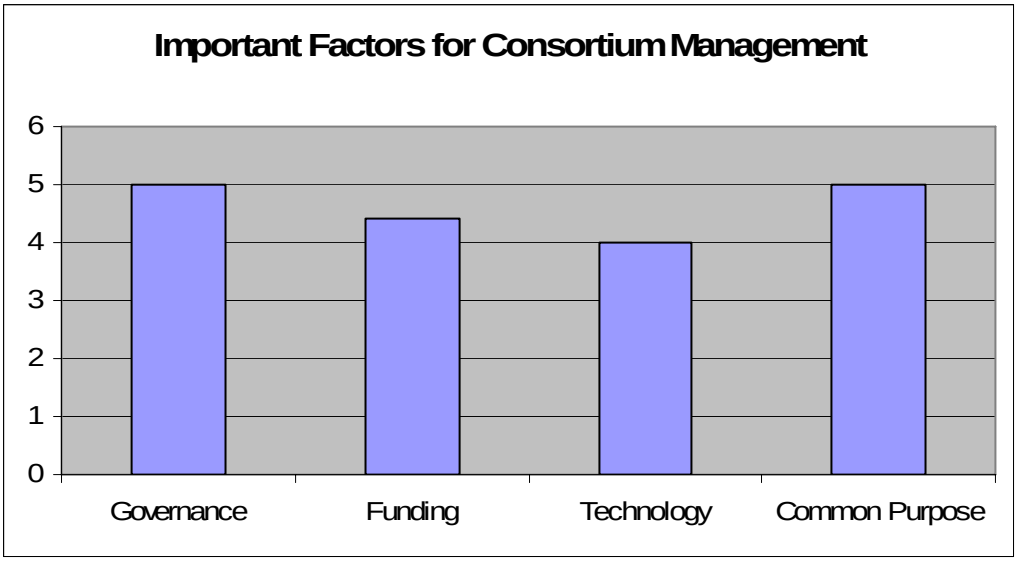
4.6.3 Factors leading to successful management of a library consortium

Library heads of the two consortia were asked to rate the importance of the following factors that contribute to the successful management of a consortium:

- Governance;
- Funding;
- Technology; and
- Common purpose.

These factors were rated on the scale of 1 to 5, where 1 is the least important and 5 is very important. As Table 31 indicates, all the four factors were considered important, with 'governance' and 'common purpose' ranked highest and 'funding' and 'technology' ranked third and fourth respectively.

Table 31 Important factors for consortium management



4.7 Centralised and decentralised system server models

To reveal the advantages and disadvantages of centralised and decentralised system server models in a consortium, two librarians involved with each model were interviewed. The project manager of the South Eastern Academic Library System (SEALS) was interviewed on the centralised model. SEALS uses a central model for the management of its server. This model is different from a decentralised one used by both GAELIC and FRELICO. Through information gathered from the SEALS project manager, comparisons were made between central and decentralised models, The UNISA system librarian was interviewed on the decentralised model. Table 32 below shows responses received for each model.

Table 32 Advantages and disadvantages of central and decentralised server models

	Central server	**Decentralised server**
Advantages	• Cross-cutting access to all records of member libraries • Simultaneous upgrades to software • Much cheaper than individual installations • Better management	• Autonomy of individual libraries • Better relations with institutions' IT departments
Disadvantages	• None given	• Cannot directly access other members' holdings • Members on different

		version of the system • Training and support are negatively affected • High costs of maintenance and upgrades

4.8 Analysis of LELICO responses

The 12 heads of LELICO libraries responded to the questionnaire that sought to find out the automation status of their libraries, and their opinion on the benefits derived from LELICO membership. Recommendations on which activities LELICO should prioritise as well as systems requirements for the LELICO common library system were solicited.

4.8.1 Automation status of LELICO member libraries

Out of a total of 12 libraries, only four (25%) are computerised. Two of these libraries use Q and A and CDS/ISIS, which do not have all the core library modules, such as Circulations and Serials. Table 33 shows the automation status of LELICO libraries and library systems.

Table 33 Automation status of LELICO libraries

LIBRARY	AUTOMATED	LIBRARY SYSTEM USED
AR	No	–
PJ	No	–

IDM	No	–
LAC	No	–
LCE	Yes	Bookworm
LHDA	No	–
LIPAM	Yes	Q & A
LNLS	No	–
LP	No	–
LPPA	Yes	CDS/ISIS
NUL	Yes	Integrated Tertiary Software (ITS)
PL	No	–

The library modules used by four libraries that have automated include Acquisitions, Cataloguing, Circulations, Serials and Management Information. Cataloguing modules are used by all four libraries, whereas OPAC and Acquisitions are used by three (LCE, LIPAM and NUL). Circulations and Management Information are used by only two (LCE and NUL) while Serials is only used by the NUL library. Some problems have been identified with all the four library systems used. Problems for each library are tabulated in Table 34 below.

Table 34 Problems encountered with current systems in LELICO libraries

Library System	Libraries	Problems
Bookworm	LCE	• Unable to upgrade

		• Vendor not traceable • No system support • No other users known
Integrated Tertiary Software (ITS)	NUL	• Not web-based • Small user group
Q and A	LIPAM	• Cannot access Loans module without going through Cataloguing
CDS/ISIS	LPPA	• Does not accommodate other modules

The majority of libraries (seven out of eight) that have not computerised identify lack of funds as the main reason. One library (LNLS) said it was in the process of computerising.

4.8.2 Benefits of LELICO membership and proposals

4.8.2.1 Derived benefits

Training workshops are mentioned by many libraries (70%) as a major benefit they have derived from LELICO membership. This is followed by provision of refurbished computers (mentioned by 60% of respondents) donated by LELICO. The opportunity to share information and networking (50%) is another benefit. Access to electronic databases such as EBSCO is a further advantage (mentioned by 40% of libraries). One library mentioned a donation of a set of Dewey Decimal Classification (DDC) that it received, which is used to catalogue and classify its library material. Another library

mentioned that recognition from the government has resulted in the subvention of funds to LELICO.

4.8.2.2 Expected benefits

Respondents also mentioned benefits that they expect to derive from LELICO membership. These are shown below, together with the percentage of library heads who mentioned them.

- More training workshops – 40%
- More marketing and publicity – 30%
- Joint acquisition of a common library system – 30%
- Interlibrary Scheme – 8%
- Compilation of a national directory of Lesotho libraries – 8%
- Licensing – 8%
- Regional and international partnerships – 8%
- Facilitate exchange programmes among members – 8%

4.8.2.3 Proposals of activities

Members were asked to rank future activities in order of priority. These were: installation of a common library system; engagement in fundraising activities, improvement of communication; expansion of LELICO membership; partnership with regional consortia; and more professional development opportunities. Table 35 is a summary of the ranking of proposals. The installation of a common library system was ranked highest by respondents.

Table 35 Proposal of activities for LELICO

Proposal	Rank
Installation of a common library system	1
Engage in fundraising activities	2
Improve communication	3
Provision of professional development opportunities	4
Partnership with regional consortia	5
Expand membership	6

4.8.3 Requirements for LELICO common library system

4.8.3.1 Modules required

Respondents were asked to identify modules they would like to have included in the LELICO common library system. The following modules were suggested (with the percentage of respondents):

- Acquisitions – 100%
- Cataloguing – 100%
- Circulations – 100%
- OPAC – 100%
- Serials – 60%
- Archives – 8%
- Bindery – 8%
- Management information – 17%

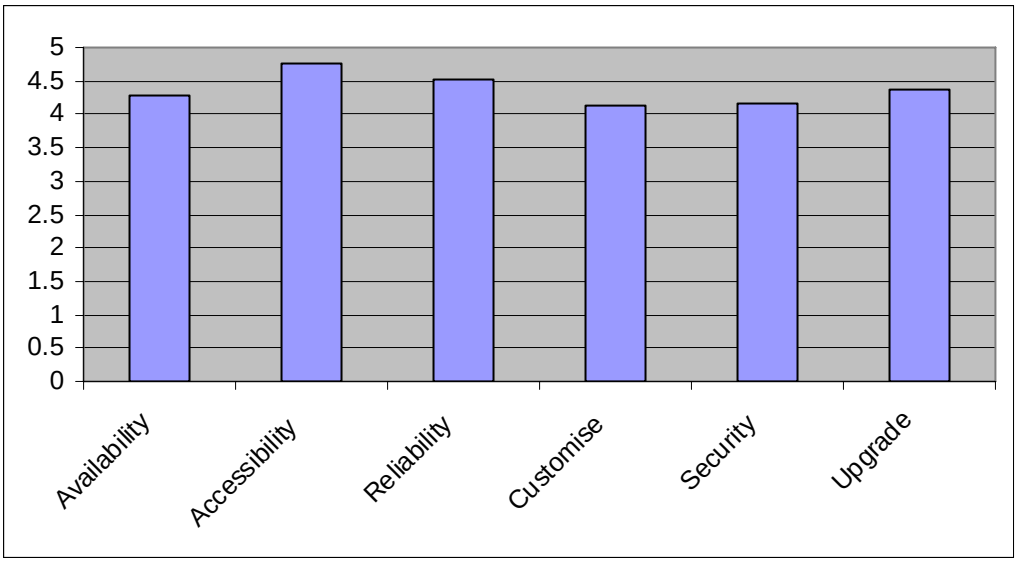
4.8.3.2 System properties

To understand the type of common library system LELICO members wanted, respondents were asked to rate the importance of some properties of a library system. These properties are: functionality, usability, system support and vendor. Elements were identified under each property and these were rated on a scale of 1 to 5, where 1 = least important and 5 = most important. Tables 36 to 39 summarise the ratings as given by respondents.

4.8.3.2.1 Functionality

Library heads were asked to rate the importance of the following functionality elements for the LELICO common library system: availability, accessibility, reliability, ability to customise, security, and ability to upgrade. All the elements were considered important, with scores of over 4, as reflected in Table 36.

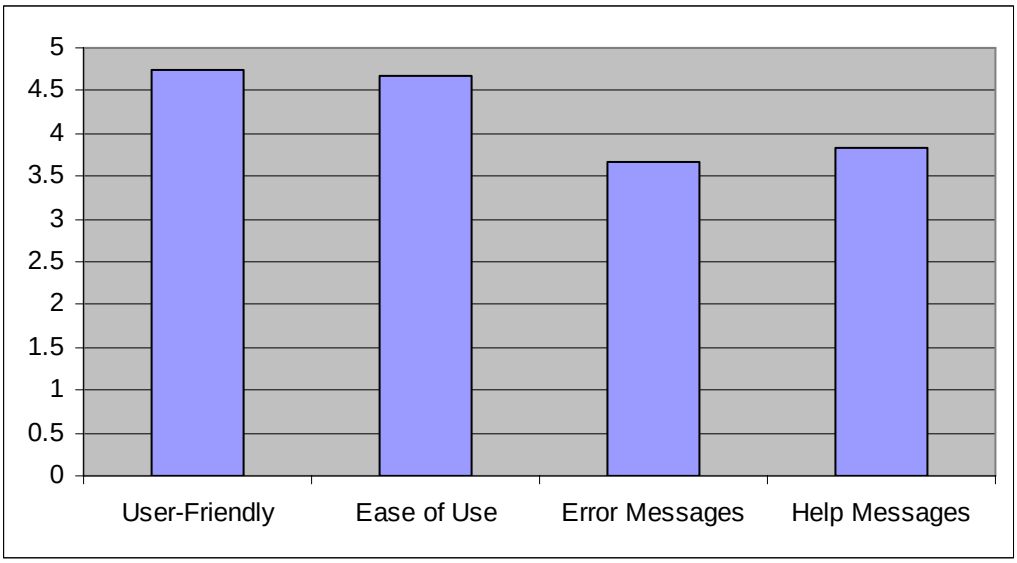
Table 36 Importance of functionality elements for LELICO common library system



4.8.3.2.2 Usability

Usability elements (user-friendliness, ease of use, error messages, and help messages) were rated on the scale of 1 to 5, and all the elements were considered important, especially the first two, which scored 4.7 and 4.6 respectively.

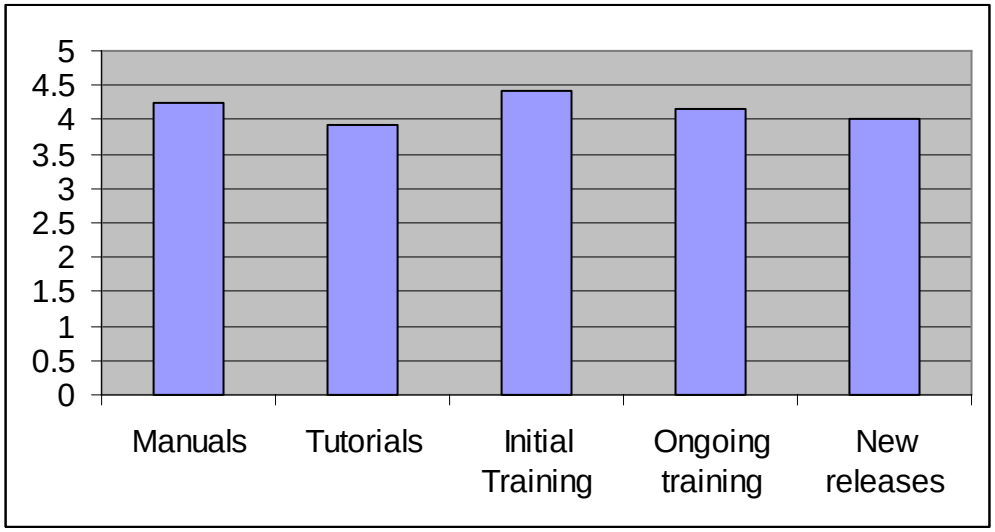
Table 37 Importance of usability elements for LELICO common library system



4.8.3.2.3 Support and training

Respondents also ranked the importance of support elements – Manuals, Tutorials, Initial training and ongoing training were also ranked on the scale 1 to 5. Initial training, manuals and ongoing training were considered very important, with scores of 4.4, 4.2 and 4.1 respectively. Tutorials were considered of average importance (Score – 3.8).

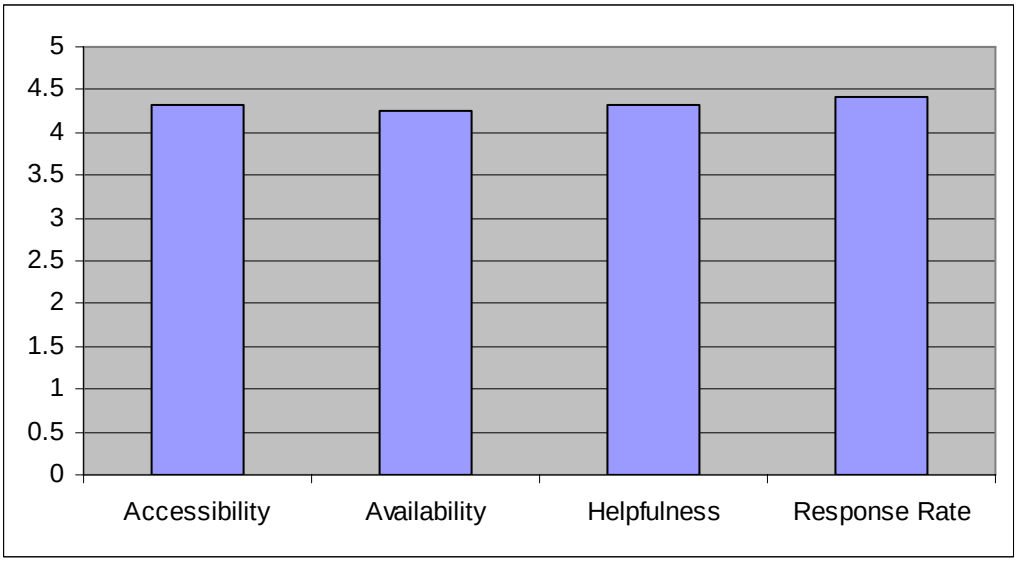
Table 38 Importance of support elements for LELICO common library system



4.8.3.2.4 Vendor

Vendor elements of accessibility, availability, helpfulness, and response rate were all deemed to be very important for the common system, with all elements scoring over 4. Response rate was found to be of the highest importance among the four elements (score 4.4).

Table 39 Importance of vendor elements for LELICO common library system



4.8.4 Funding for LELICO member libraries

Purchasing a common library system would inevitably have financial implications for LELICO members. It, therefore, became necessary to investigate the latest budget trends among LELICO members, and if funding was adequate for general library needs. Table 40 shows that the three academic institutions (NUL, LP and LAC) received the most funds. The budget for these three ranged between M800 000 toM5 000 000. LNLS had a comparatively better budget than most libraries in 2006 (data for other years was not given). Other libraries, which are mainly 'special' and relatively small, received very little funding (Range: M12 000 – M80 000). In general, the NUL Library was the best funded, with an average of M4 000 000 between 2004 and 2006, whereas LPPA was the least funded with an average of M14 800 for 2005 and 2006.

Heads of LELICO libraries were asked to indicate whether or not funding was adequate for their library needs. Eighty per cent (10 libraries) said that the budget was inadequate, and only 17% (two libraries) said it was adequate.

Table 40 Budget status among LELICO member libraries

BUDGET OF LELICO LIBRARIES FOR YEARS 2004, 2005 and 2006 in Maloti (1 US$ = 7.09 Maloti (02 August 2007))				
	2004	**2005**	**2006**	**Adequacy**
AR	Not known	Not known	Not known	No
IDM	–	–	–	
LAC	800 000	900 000	1 000 000	Yes
LCE	60 500	67 350	80 000	No
LP	1 087 741	1 525 203	2 238 903	No
LHDA	–	200 000	500 000	No
LIPAM	49 000	54 000	80 000	No
LNLS	–	–	2 000 000	No
LPPA	–	12 600	17 000	Yes
NUL	3 000 000	4 000 000	5 000 000	No
PL	50 000	50 000	50 000	No
PJ	100 000	100 000	150 000	No

4.9 Conclusion

This chapter presented data obtained from questionnaires, interviews and documents. Data was presented in two major categories: the first related to GAELIC, FRELICO and three libraries in other Southern African countries that use the INNOPAC library system, the second was the Lesotho Library Consortium, a small library consortium considering the implementation of a common library system. Chapter 5 will interpret data presented in this chapter.

CHAPTER FIVE

INTERPRETATION OF DATA

5.1 Introduction:

This chapter interprets data presented in the previous chapter. It attempts to provide reasons for general patterns observed and the type of data obtained. In the process, potential solutions to identified problems are presented. Data interpreted in this chapter will be based on the following:

- The INNOPAC library system performance in GAELIC, FRELICO and three institutions in other Southern African countries;
- The impact of the system in libraries;
- Cost-benefit analysis of the INNOPAC library system;
- Motivation and benefits of consortium membership; and
- System requirements for LELICO.

5.2 The INNOPAC library system performance in GAELIC, FRELICO, and three institutions in other Southern African countries

5.2.1 Performance of the system in GAELIC and FRELICO

All the libraries under investigation have installed, and are using, the basic library modules: Acquisitions, Cataloguing, Circulations, Serials, and OPAC. As shown in Table 8 some libraries have installed additional modules such as Web Access Management, Course Reserve, Media and Electronic Resource Management. In general, the system is performing well in terms of modules that are operational in FRELICO and GAELIC

libraries. The general satisfaction with the modules confirms the Underwood and Smith's (2005) study, which shows that most GAELIC libraries were satisfied with the way the INNOPAC library system is performing. Both library professionals and system managers are happy with the performance of the different modules, as reflected in Tables 9 and 10. This is attributable to the system's ability to improve the operations of libraries effectively by making them better able to serve their clients. There has also been an increase in productivity among staff.

All the properties of Availability, Accessibility, Reliability and Security were rated as successful for the efficient functioning of the system, especially that of Security. Site visits by the researcher showed that the system is protected by user passwords, which are assigned for certain modules, enabling users to edit or change data. Another helpful feature of the system is its effective back-up facilities. All data is backed-up daily with quick retrieval of records in cases of loss.

The system's usability is effective for its user friendliness and ease of use. Comments by most library professionals show that the INNOPAC library system is straight-forward and easy to understand. Error messages and help messages were rated relatively low, which could be attributed to 'unclear and not always helpful' messages, as mentioned by some library professionals. Others indicated that some error messages may not be understood by novice users, implying that one needs to be familiar with the system to comprehend the error messages.

Support was evaluated according to online and offline support and training, which encompasses manuals, training, tutorials and updates. All components were rated as successful, with initial training having the highest rating, as shown in Table 13. This might be because of the vendor, Innovative Interfaces Inc., offering as part of the system. Additional training has to be paid for by individual libraries, which can negatively affect any ongoing training requirements, especially if there are budget cuts. GAELIC provides training to its members regularly. This is very helpful, as it offers one-on-one training, which most people prefer. However, the interviews showed that one of the problems of training is that different libraries have different versions of the system. Ideally, training would be easier and more effective if all member libraries had the same version, preferably the most recent. Currently, libraries operate at different levels, which affects both the training and support given by GAELIC.

System management in libraries is good. Each library has a system manager who attends to problems in the use of the system. The best-rated component is 'helpfulness' and the worst rated component is 'response rate'. System managers report problems that they cannot solve to the vendor – the company is based in Emeryville in the USA. The poor response rating can be attributed to the different time zones between South Africa and the USA, which delay responses to queries. The vendor was rated average in terms of accessibility, availability and helpfulness, but again, the component of response rate was the lowest (see Table 15). Interviews revealed that although the vendor's helpdesk – CSDirect is available 24 hours a day, the time taken to respond to queries remains unsatisfactory.

5.2.2 Performance of the system in three institutions in other Southern African countries

The three institutions in other Southern African countries, namely BCA, UNAM, and NUST, evaluated the performance of the system in a slightly differently. BCA rated the system's performance as extremely good, NUST rated it as fair and UNAM rated it as poor. BCA has used the system the longest (four years), while NUST and UNAM have used the system for three years and eleven months respectively. UNAM was probably still experiencing teething problems, whilst the other two institutions were relatively more familiar with the system and more knowledgeable about its problem-solving techniques. It should be noted that although UNAM implemented the INNOPAC library system through GAELIC, it does not fully enjoy GAELIC's support because of geographical barriers.

Although they are fairly satisfied with the system, they have encountered. The issue of the response rate still affects the overall performance of the system. Poor response rate was reiterated by two Southern African libraries under investigation, namely NUST and UNAM.

Another problem mentioned by one library was that its e-mail support is negatively affected by the time differences between Southern Africa and the USA. This kind of a problem can be solved by adjusting the system time settings, so that it recognises the origin of the message and converts timing accordingly. Another problem is that of the high costs of additional training; while training fees might be high according to local

standards, this problem is exacerbated by the unfavourable exchange rates between the local currencies and the US dollar.

To improve the performance of the system, support, the vendor should be encouraged to open a Southern Africa office to handle regional queries, which would also help to resolve problems peculiar to the region.

5.2.3 The impact of the INNOPAC library system

Table 26 indicates that there has been a positive impact of the INNOPAC library system on the selected libraries of GAELIC and FRELICO. Impact was measured in terms of productivity, customer service, access to consortium libraries, cost-saving and contribution to decision-making processes of the library. All aspects were rated effective, except 'access to consortium libraries'. It should be noted that all GAELIC and FRELICO libraries have separate library servers, and have no direct access to each others' holdings. For one library to be able to view the holdings of another, it must either go to the website of that library or enter via SACat of SABINET. The low rating could have been influenced by this arrangement. A central server might be part of the solution to better access to each other's holdings, but Underwood and Smith (2005) noted some ambivalence on this issue. There are concerns about the relationships that each library has with its IT service department, and the locus of control of the server. Moreover, the different versions of the system that member libraries operate tend to negatively impact on the training and support given by GAELIC. A central server could significantly reduce costs. This will be discussed in the following sub-section.

The benefits derived from the system, as summarised in Table 27, show that the system is rated successful in terms of effectiveness, reliability and the wide range of functions it provides. A large user base has a positive effect on training and support. Training sessions are sometimes held collectively and members support one another when problem arise. The system has also been praised for being up-to-date with the latest library developments.

5.2.4 Cost-benefit analysis of the INNOPAC library system

The cost of implementing the library system is generally perceived to be very high, even though some of the initial costs are carried by the donor – the Andrew Mellon Foundation. Table 28 details the fees, which include installation, running, equipment, training and staffing costs. There is great discrepancy among institutions in terms of the amount of money spent, which could be related to the size of libraries, the number of licenses that each library bought and additional modules purchased. For example, UFS spent R370 000 to purchase additional modules. The libraries also needed somebody to manage the library system, either by allocating the task to an existing member of staff, or by employing a new systems librarian.

Other costs relate to communication with the vendor. Although the vendor promotes the use of e-mail to report queries, interviews show that sometimes it is necessary to follow up on queries made by telephone, which is expensive. Concerns over the distance

between the vendor and client relate to costs, support and training and underscore the need for a local/regional *Innovative* office.

Another cost-saving measure that could be considered by consortia members is to have a central server. As indicated earlier, there are concerns about the different system versions operated by libraries, which negatively affect training and support, and the overall development of GAELIC as a consortium. Libraries incur costs related to staffing, equipment and maintenance and a central server would require fewer system managers, less equipment and lower maintenance costs. The need for a central server was also raised by Underwood and Smith (2005) as one of the benefits that some members desired from GAELIC.

When weighing the cost of the system against its benefits, most respondents indicated that the benefits that they derive from the system outweigh the costs. The majority of system users mentioned the effectiveness of the system, the wide range of functions that system performs, and the support and problem-solving skills that they get from fellow consortia members as valuable strengths of the system. The affordability of running the system depends largely on individual institutions. It is likely that foreign exchange will continue to affect costs, but the consortia could negotiate with the vendor for special licensing prices in the same way they do for electronic resources.

5.3 Benefits of consortium membership

According to Table 29, GAELIC and FRELICO members mentioned the following reasons for joining their consortia:

- Access to a common library system;
- Resource sharing;
- Joint purchasing of electronic resources;
- Joint development opportunities;
- Networking; and
- Access to donor funds.

When one tallies these reasons with the derived benefits listed in Table 30, one observes that all the expectations were to a large extent met by consortia membership. Most libraries joined GAELIC when it was formed in 1996, and have installed a common library system, which has improved interaction among members, especially in areas such as system support and training. This has a positive bearing on resource sharing, which entails sharing skills, expertise and problem-solving techniques, not only in system management, but in the overall running of the libraries. Both GAELIC and FRELICO are currently jointly purchasing electronic resources and they are successfully bargaining for lower prices for electronic resources. Both the questionnaires and interviews confirm that there is on-going networking at meetings, training workshops and conferences.

Some of the benefits identified by GAELIC and FRELICO also apply to LELICO. These relate to access to electronic databases, training and development opportunities. The need

to install a common library system for LELICO is high on a list of proposals that LELICO members submitted. The majority of LELICO libraries are not yet computerised, and acquiring a system would greatly improve operations in these and other LELICO libraries. Other benefits related to resource sharing can also be improved by a common library system.

The reason for joining and the benefits derived from membership are consistent with those observed in other parts of the world. The System Development Corporation (SDC) study, (see Chapter 2), encapsulates the objectives for forming consortia. These are sharing resources to reduce costs, and achieving a single purpose. For Jalloh (2002: 205), another factor is expertise in library automation. He contends that since the introduction of computers in libraries in the 1960s, librarians have continued to seek ways of leveraging resources through virtual catalogues and document delivery services. It would appear that the sharing of resources is the main reason for forming a library consortium, and a common library system is seen as one of the means of enhancing the benefit of resource sharing further.

In the Underwood and Smith (2005) study, some members of GAELIC indicated desirable benefits, which have not yet been provided by the consortium. These include:

- more lobbying for funding both nationally and internationally;
- having a national and regional portal where members would access resources;
- proactive investigation of LIS developments such as ICT;
- subsistence and traveling allowances for outlying members;

- skills development;
- consortium pricing for INNOPAC modules; and
- more visits and exchange among institutions.

Generally, members are satisfied that they have derived the benefits they expected from consortium membership, especially with regards to the acquisition of the INNOPAC library system, the support that they need from other member libraries and networking.

The four factors for successful management of a library consortium that were mentioned are: governance, funding, technology and common purpose were all considered important. Governance and common purpose were rated extremely important, while funding and technology were considered important. This accords with factors cited by Allen andand Hirshon (1998), Woodsworth (1991) and Marais (2003). Common purpose seems to be the *raison d'être* of library consortia (see Chapter 2). For libraries to come together, they must wish to achieve a common goal. Although there may be different institutional policies and priorities, these should not hinder initiatives to achieve a common goal.

Governance is another important factor because to manage any organisation effectively, a governing body is required to deal with both the short and long term activities. It is necessary to have policies in place to guide the management process, including rules and regulations that all member libraries should adhere to. Communication and

representation by all members in governing structures of a consortium, for example, are vital.

Technology has an important role to play in the management of a consortium. Technology impinges on crucial issues, such as communication, access to information and resource sharing in general. Without appropriate technology, the essence of having a consortium would be questionable. Not only does technology provide fast and easy access to information, but it also increases productivity, assists in decision-making processes and reduces costs. The implementation of a common library system in all GAELIC libraries is a worthwhile initiative that enhances resource sharing. The INNOPAC library system in FRELICO is currently only implemented in UFS and CUT, the other two libraries (Mangaung Local Municipality Library Service and Sasol Library) are still using their own systems. Respondents believed FRELICO would operate better if all its members were using the same system as is the case with GAELIC, confirming the importance of a common system.

Funding is another vital factor that respondents agree determines the successful management of a consortium. Woodsworth (1991) observed that co-operative efforts in libraries rarely flourish without reliable funding. Acquisition of the INNOPAC library system was expensive for both GAELIC and FRELICO, hence the need for funding from the Andrew Mellon Foundation in the USA. It is also important to obtain commitment from the local institution to fund some of the running costs of consortium initiatives.

Regular communication with the management bodies is necessary to keep up-to-date on consortia activities.

5.4 Experiences with central and decentralised system server models

According to Table 32, there are more advantages to using a central system server than decentralised servers. The advantages have been highlighted by SEALS, which is the only consortium in South Africa that has implemented the INNOPAC library system using a central server model. SEALS consists of four libraries and its server is managed by the IT division of Rhodes University (section 2.4.3.1.5).

Responses from SEALS' project manager show that member libraries have access to each others' holdings, which contributes positively to their resource sharing initiatives. Another advantage is simultaneous upgrades, as this is done once and all members automatically derive the benefits. This saves installation, staffing, hardware, software and related equipment costs. SEALS does not seem to be experiencing any problem with this model.

GAELIC implemented the INNOPAC library system using a decentralised model, which appears to have had a negative impact on training and support in general, as individual libraries decide on which additional modules to buy and when to upgrade their systems. Thus GAELIC presents collective training, so members are not on the same level, which makes training less effective. Library-to-library support can also become difficult when members use different versions of the system.

Another disadvantage of a decentralised server is that members cannot directly access each other's holdings. This is a hindrance as the essence of a consortium is to enable members to share resources and to have easy access to records of other consortium members. Cost is another negative aspect of multiple servers, as individual members have to:

- employ system managers;
- purchase hardware and software;
- purchase necessary upgrades;
- pay for training; and
- take care of the general maintenance of the system.

As indicated in Section 4.7, GAELIC members raised concerns about a central server and their relationship with their IT departments and about control of the server. (Underwood and Smith: 2005). However, the benefits of a central server seem to outweigh any concerns.

5.5 LELICO automation status and its system requirements

LELICO was launched in 2003 with seed funding from the Open Society Initiative of Southern Africa (OSISA). It initially ad five member libraries, which were academic libraries, one was a special library and one a national library. Interviews revealed that this number has since increased to 12 with the inclusion of seven special libraries. Questionnaire responses shows that members have derived benefits such as training

workshops, access to electronic databases like EBSCO, and the provision of refurbished computers through the assistance of OSISA. Section 4.6.1 shows that other expected benefits include the joint acquisition of a common library system and additional training workshops. Some members feel that the consortium should market its services better to improve its reach.

Of the 12 LELICO libraries, only four are computerised. Two of these use Q andA and CDS/ISIS, which do not have all the basic library modules. A proper library system should cater for at least four modules, namely, Acquisitions, Cataloguing, OPAC, and Circulations. Subsequent interviews revealed that the National Library is in the process of computerising, using Inmagic DBTextWorks, while the other seven libraries still use manual systems. Table 34 illustrates problems with the library system installed in the four automated libraries, including not being able to upgrade, and a vendor who cannot be found and therefore does not offer support. NUL mentioned that ITS has a small user group and that its system, which is still text based, should be a web-based system. LIPAM is unable to access the loans module directly. LPPA's CDS/ISIS does not have other important modules, like Acquisitions and Circulations. Follow up interviews showed that LCE's library system has completely shut down and cannot be repaired since the vendor can longer be traced. No other library uses Bookworm and it is, therefore, not possible to get any assistance.

The major reason;n given for not automating is a lack of funds. Most member libraries have very small budgets, which are inadequate. The purchase of a library system would, therefore, overstretch existing budgets.

5.5.1 Proposed activities for LELICO

A list of proposed activities suggested for LELICO include:

- installation of a common library system;
- engagement in fundraising activities;
- improvement of communication
- provision of professional development opportunities;
- partnership with regional consortia; and
- expansion of membership.

According to Table 35, the installation of common library system was ranked highest among the activities proposed for LELICO. The majority (67%) of LELICO libraries are not yet computerised, hence the need to have a library system within the consortium. One aim of LELICO is to share electronic resources through joint subscriptions and purchasing. The current lack of automation of the majority of LELICO members prevents electronic resource sharing.

The second priority is engaging in fundraising activities. Raising funds for the consortium is important as even the purchasing of a common library system has huge financial implications. As illustrated in Table 28, implementing the INNOPAC library system in

GAELIC and FRELICO was expensive despite the initial seed funding from the Mellon Foundation. LELICO would need to raise funds for this kind of project, especially given the inadequate budgets of its members. This is followed by the improvement of improvement of communication. Interviews revealed that communication among members takes place via telephone and at meetings. Most members have e-mail addresses, but some are not able to check their e-mail regularly as they do not have access to either the Internet or e-mail systems. The poor information technology infrastructure negatively affects communication. It is suggested that LELICO lobby for better infrastructure in libraries, which would also improve communication among members. It should be noted that LELICO now has a website (www.lelico.org.ls), which is a strategic communication tool for both members and external stakeholders. However, the unavailability of internet services to most LELICO members reduces the positive impact that this website could potentially have on members.

The next pair of priorities involves the provision of professional development opportunities and partnerships with regional consortia. LELICO is already providing some professional functions such as training where members acquire professional skills. These initiatives should be strengthened by expanding the types of functions. Partnering with regional consortia would be beneficial to LELICO, which would learn much from longer-established consortia such as those in other Southern African consortia. Such partnerships would enrich programmes like staff exchange and attachments.

The final priority raised is about expanding membership. 'Expansion of membership' was last on the list of priorities, however, since its inception in 2003 with five members, LELICO has grown to 12 members within three years. More members would improve the status of libraries in Lesotho and widen participation in electronic resource sharing.

5.5.2 System requirements for a LELICO common library system

All respondents indicated the need for basic library modules for the LELICO common library system. The modules suggested are: Acquisitions, Cataloguing, Circulations, and OPAC. The Serials module was chosen by 60% of LELICO library heads, whereas Management Information, Archives and Binding was chosen by only a few. The modules cited seem to correspond with the existing modules in these libraries. For example, libraries that do not currently handle Periodicals and Archives did not choose these modules for the consortium. However, it is important to include all the modules to cater for the needs of all libraries. Those that do not currently need these modules might need them in future as they expand.

System properties were listed for members to rate:

- Functionality;
- Usability;
- System support; and
- Vendor.

The cost factor is dealt with in the following sub-section.

The functionality elements of availability, accessibility, reliability, ability to customise, security, and ability to upgrade were all considered important (see Table 36).Optimum utlilisation of the system would depend on these elements hence the need to have them all. The performance of functionality in the INNOPAC library system in GAELIC and FRELICO shows that this system is performing well, with a score of over 3.5 on all the functionality elements. The three Southern African libraries rated the functionality of the INNOPAC library system as good.

The usability of the system is another important aspect whose elements are rated in Table 37. The usability elements are: user-friendliness, ease of use, error messages and help messages. Although all the usability elements scored over 3.5, LELICO library heads thought that user-friendliness (Score – 4.7) and ease of Use (Score – 4.6) were especially desirable for a common library system. Since most of the LELICO member libraries are not automated, it is crucial to have a system that it is easy to use so that members need not consult specialists.

System support is another element that was rated by LELICO members, and Manuals, Tutorials, Initial and Ongoing training, and New releases were considered important. Initial training was considered extremely important (score – 4.4). Initial training is part of the installation package of the INNOPAC library system, it is therefore offered free of charge by the vendor. Generally, the INNOPAC library system scored satisfactorily on all support elements.

Elements relating to the vendor of the system (accessibility, availability, helpfulness and response rate) were all considered important for a LELICO library system. However, the response rate of the INNOPAC library system was poorly rated as shown in Table 39. Different time zones between the USA and the Southern African region seem to be the main factor. Given the importance that is attached to response rate, it would be advisable to have a regional office to timeously respond to queries. Long lag times are a problem that negatively affect the overall performance of the system, especially given the history of Lesotho libraries that have no automation experience, one would expect there to be more queries submitted to the vendor.

5.5.3 Cost implications for a LELICO common library system

Table 28 shows the expenses that some GAELIC and FRELICO libraries incurred. The INNOPAC library system is prohibitively expensive. The smallest expense was that of MEDUNSA (R680 000), which did not include installation costs and staffing. UNISA incurred the heaviest installation costs of R4 121 295, and staffing costs of R741 455. Table 40 shows budget allocations for LELICO member libraries, and indicates that the best funded library (NUL) had a total budget of R 5 000 000 in 2006, while the least funded library (LPPA) had a budget of R17 000 for the same year. Implementing the INNOPAC library system in these libraries would over-stretch existing budgets.

One way of cutting costs would be to purchase the system jointly as a consortium, even though it would still be expensive. Finding a funder who could cover installation and data conversion costs would improve matters. Philanthropic organisations such as the Mellon

Foundation, the Kellogg Foundation and the Bill and Melinda Gates Foundation, which have assisted libraries in the past, could be approached. Even with initial funding, LELICO libraries would have to consider the running costs of the system. According to BCA, the annual licence for the INNOPAC library system alone is estimated at R95 000, which is way above the total budget of some LELICO member libraries.

Alternatively, LELICO would have to find a cheaper common library system. A thorough investigation would have to be undertaken to identify a system that would meet the requirements of the consortium. Such a system would ideally have to be reputable and have a large user group that could share its experiences with LELICO. However, given the geographical location of Lesotho, it would be more practical to acquire a system that is compatible with most South African libraries systems.

5.6 Conclusions

This chapter interpreted the data that was presented in Chapter 4. Data interpretation was done according to major categories of analysis identified in Section 5.1. These categories relate to the INNOPAC library system, the benefits and management of a library consortium and the system requirements of LELICO.

The following points summarise the interpretation presented in this chapter:

- The general performance of the INNOPAC library system is good according to members of GAELIC, FRELICO, and the three selected Southern African libraries;

- The main problem encountered with the INNOPAC library system was the slow response rate of the vendor. This was attributed to the difference in time zone between the USA and the Southern African region;
- The INNOPAC library has had a very positive impact on GAELIC and FRELICO libraries. The system has contributed to increased productivity, better customer service, better use of technology and better decision making within these consortia. Access to other consortia members was rated average as members do not have direct access to each others' holdings;
- Even though the system is expensive, its benefits are said to outweigh the costs;
- The motivations for joining a library consortium include access to a common library system, resource sharing, joint purchasing and development opportunities and networking. These reasons have translated into real benefits for GAELIC and FRELICO members. Even though LELICO members derive some benefits such as training workshops, access to electronic databases, resource sharing and networking, they mentioned the acquisition of a common library system as the main benefit expected from their membership of LELICO;
- The success factors in the management of a library consortium relate to governance, funding, technology, and common purpose;
- Most LELICO members are still not automated, which restricts electronic resource initiatives;
- The four LELICO members that have automated are experiencing problems with their systems. These include: inability to upgrade, unavailability of system support, small user group, and inability to accommodate other modules;

- Proposals of activities for LELICO in order of priority are: installation of a common library system; engagement in fundraising activities; improvement of communication; provision of development opportunities; partnership with regional consortia; and expansion of membership;
- Modules required for the LELICO common library system are: Acquisitions, Cataloguing, Circulations, OPAC, Serials, Management Information, Archives and Bindery;
- All elements of functionality, usability, system support and system vendor were considered important by LELICO members;
- Most LELICO member libraries have small budgets, which are generally considered to be inadequate for the needs of individual members.

In addition to the criteria for performance, other implementation factors are clearly important. Funding is crucial, especially because most of LELICO member libraries are inadequately funded. Funding is needed to cover most aspects the system implementation. Another factor relates to a multi-type consortium. Unlike FRELICO, GAELIC and other consortia in the Southern African region that are academic, LELICO is a multi-type consortium. This unique characteristic requires a system that will respond to the needs of all different types of libraries. LELICO will also need to consider which model it is going to use to manage its common system. Data has shown that a centralised model has more advantages than a decentralised one. Taking these issues discussed into consideration, the Chapter 6 will propose a model for implementing the INNOPAC library system as a common library system in LELICO.

CHAPTER SIX

IMPLEMENTING A LELICO COMMON LIBRARY SYSTEM

6.1 Introduction

The majority of LELICO members chose the acquisition of a common library system as a first priority on the list of proposed activities for the consortium. This can be attributed to the fact that most member libraries are not yet computerised, and therefore seek the synergy of consortium membership to achieve this task. The few automated libraries are currently experiencing problems with their library systems, and they have expressed the need to change to a more efficient system. Purchasing a library system for LELICO would meet the needs of all members irrespective of their automation status. Acquiring the system individually would be costly for some members, especially given the current budgetary constraints, whereas buying a system collectively would be financially viable.

Another reason for prioritising a common library system is that the main goal of LELICO is to enable members to share information resources electronically. With the current automation status of members, this goal would be difficult to achieve. Hence, there is a need to provide an enabling environment for members to share resources and increase their productivity.

Members also indicated that LELICO's common library system should:

- be managed centrally, as there is a computer skills shortage that would make it difficult to manage the system separately;
- allow access to members' holdings;

- perform well on the system properties of functionality, usability, support and training, and vendor; and
- contain all the basic library modules of Acquisitions, Cataloguing, Circulations, Management Information, OPAC, and Serials.

According to an analysis of responses received from libraries that already use the INNOPAC library system, it appears to be performing very well despite high installation and maintenance costs. It was rated highly by GAELIC and FRELICO, as well as by individual libraries in Botswana, Namibia and Zimbabwe. The INNOPAC library system has had a positive impact on these libraries in terms of increased productivity, better services to clients and cost savings. These benefits can be extended to LELICO if the INNOPAC library is adapted to its special requirements.

6.2 Lessons from the Southern African region

Consortia and libraries in the Southern African region that have common library systems have experienced the kinds of challenges facing LELICO. LELICO can learn from their experiences and facilitate the implementation process according to its own requirements. The INNOPAC library system is the most preferred choice of libraries.

The Free State Library Consortium (FRELICO), the Gauteng and Environs Library Consortium (GAELIC), and the South Eastern Academic Libraries System (SEALS) have already implemented the INNOPAC library system. GAELIC and FRELICO started using the system in 1998 and 1999 respectively (Edwards, 1998; FRELICO, 2007). SEALS libraries migrated from their old systems to the INNOPAC library system in 2001

(Clarke, 2007). Two Zimbabwe Library Consortium (ZULC) members, namely, the National University of Science and Technology Library and the University of Zimbabwe also use the INNOPAC library system. In Botswana, the University of Botswana and the Botswana College of Agriculture libraries have adopted the INNOPAC library system.

Studies on the performance of the INNOPAC library system in libraries in the Southern African region show a high level of user satisfaction. Underwood and Smith (2005) established that GAELIC members were generally satisfied with the performance of the system. However, their study revealed some concerns by members about a proposed central server. One concern was that a central server would have a negative impact on the relationships between libraries and their respective IT departments. Another concern was about control of the server since only one library could be the host, which would prevent any other library from having direct control of the server.

Taole (2008) evaluated the performance of the INNOPAC library system in GAELIC and FRELICO in South Africa, and in the libraries of the Botswana College of Agriculture, the National University of Science and Technology in Zimbabwe and the University of Namibia. Taole's study found that the system is performing well and that it meets most library needs. A primary concern of consortium members and the libraries was the response rate of the vendor to queries. A possible solution is the establishment of a regional office of Innovative Interface Inc. (vendor) in Southern Africa.

Another concern is the high costs of implementing the system. This is exacerbated by the fact that the INNOPAC library system is a USA-based system, and high foreign exchange rates have a negative impact on local libraries. Most of the consortia and individual libraries purchased the system with external funding and only have to carry the running costs.

Other lessons learned are:

- **System Management model** – The centralised model used by SEALS was found to have more advantages for a small consortium than the decentralised model used by the larger GAELIC. Clarke (2008) argues that financial savings are the main advantage of a centralised model. In his view, costs related to installation, hardware, software and related equipment are greatly reduced in this model. Another advantage is that direct access by member libraries to each other's holdings improves resource sharing. Furthermore, simultaneous upgrades are possible in a centralised model because a single installation automatically benefits all members.
- **Host institution –** It is imperative, especially for a small consortium, that the institution that hosts the server should have the appropriate infrastructure and capacity. The SEALS central server is located at Rhodes University in Grahamstown, and is accessible to all four member libraries (Clarke, 2008). It is supported by the university's computer department. The SEALS system manager is based at the university and provides specialised technical and support service to all member libraries, including user support, operations and maintenance of the system.

- **Communication** – Communication is central to the smooth running of a consortium and the management of a common library system. For example, all GAELIC member libraries have dedicated staff members who are responsible for the system And who represent their libraries in the GAELIC INNOPAC System Workgroup (GAELIC, 2008). These librarians communicate and meet regularly to share information and expertise.
- **Training** – The vendor of the INNOPAC library system provides initial training as part of the installation package, and consortia members organise on-going training as it becomes necessary. The different versions of the system used by GAELIC members have led to confusion in training sessions (Erasmus, 2007). If LELICO adopts a decentralised model, it will face the same problem.

Given the impressive performance of the INNOPAC library system in consortia and libraries in the Southern Africa region, it is clear that LELICO will benefit from implementing the system. The experiences and lessons from neighbouring consortia and libraries will prove to be advantageous to LELICO for solving problems and sharing expertise. LELICO will be able to participate in the INNOPAC User Group: Southern Africa, where information sharing takes place annually. The primary concern is financial constraints.

6.3 A proposal for implementing the LELICO common library system

6.3.1 Preamble

The need expressed by LELICO members for a common library system is a positive step towards improving resource sharing and enhancing the status of libraries in Lesotho. Common library systems have contributed positively to the business of libraries worldwide. First, they have not only greatly reduced the costs of carrying out various library operations, but have also improved training and support. The reduction of costs is vital, especially for Lesotho libraries, which are under serious budgetary constraints. Secondly, common library systems encourage networking and collaboration among members as they offer a single platform through which members can collaborate. Thirdly, resource sharing, which is the main reason for forming consortia, can run more effectively through shared catalogues, shared databases, collective purchasing and interlibrary lending. A common library system has a direct benefit for end users of member libraries as it enables equal access to resources. The commonality of the system implies that end users need not learn how to use different systems every time they visit a different library.

The good performance of the INNOPAC library system in GAELIC, FRELICO and selected Southern African libraries, means that it will also be generally suitable for LELICO. The study shows that the INNOPAC library system is considered to be a cutting edge technology that has met most library needs by providing regular upgrades and enhancements and being responsive to library developments. Not only has it

performed well in the consortia examined, but it has a good reputation in other parts of the world, as shown in a number of studies (see section 2.8.2).

6.3.2 System server model

The study shows that LELICO members prefer a system that is centrally managed as it is thought to be more cost effective, both in terms of staff requirements and maintenance. It is also viewed as a potential platform for planned consortium resource sharing activities. Section 5.4 established that a central server is more beneficial for a consortium than several decentralised servers. These benefits relate to increased access to members' holdings, simultaneous system upgrades and reduced installation and running costs.

A key requirement for LELICO's common library system is that it should be centrally managed. The long-term benefits will be greater resource acquisition to be shared with many libraries at a reduced cost. Managing the server centrally will also improve the quality of records and encourage standardisation, which will contribute to better service provision. Lesotho is lagging behind in co-operative areas such as the compilation of national bibliographies, inter-library lending, and document delivery. A centrally managed common library system is therefore seen as a vehicle for driving these co-operative programmes.

The server should be hosted by the National University of Lesotho (NUL), the biggest and best-resourced library in the country. It was the first to computerise and it has the requisite experience to advise on matters relating to systems implementation and

maintenance. The Computer Services Unit at NUL has qualified personnel who can offer support for hosting a LELICO common library system.

6.4 Functions and features of the system

The main function of the proposed common library system will be to improve co-operation among members and to provide an efficient, cost-effective library service to all LELICO members. The system should contain all the following basic modules required by members:

- Acquisitions;
- Cataloguing;
- Circulations;
- Management information;
- OPAC; and
- Serials.

Additional modules could be purchased as and when the need arises. However, the modules that are necessary for resource sharing procedures like inter-library loan and electronic resources management would be included from the outset.

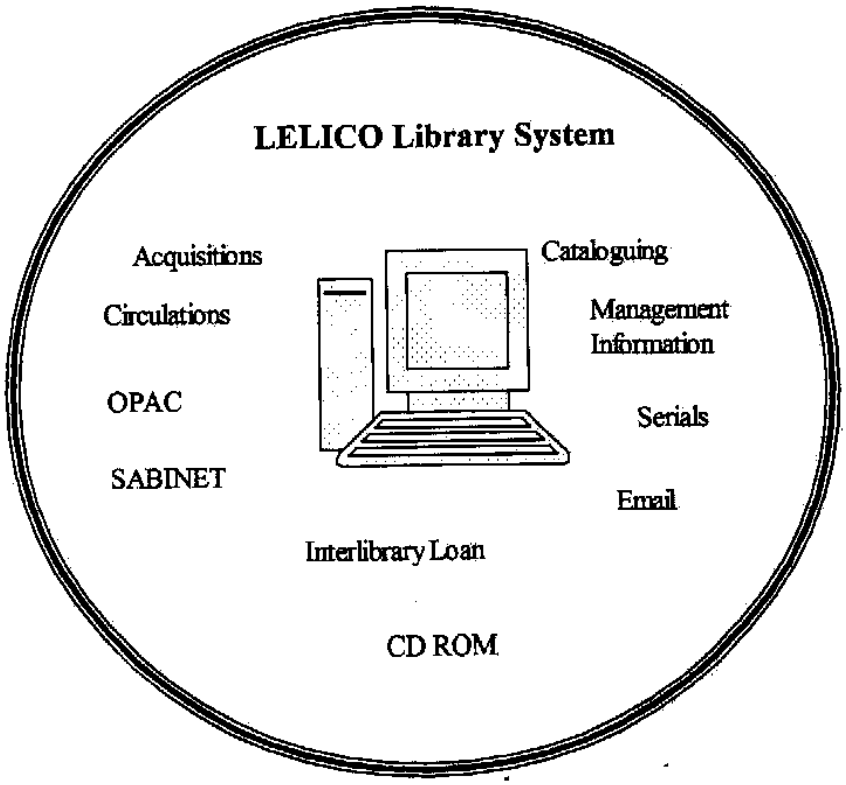
To operate effectively and to produce data of the highest quality, the system should adhere to international standards and accommodate programmes that enhance the consortium services from time to time. To achieve this, the system should:

- comply with standards such as USMARC, Z39.50 (Search and present standard) and Anglo-American Cataloguing Rules, Second Edition (AACR2). These standards will ensure that the data in the system complies with internationally accepted quality assurance codes;
- be able to connect and down-load bibliographic records from external sources such as SABINET (South African Bibliographic Network). The system will allow optimal utilisation of networked resources by allowing users to connect with other sources and to use data from other databases;
- support a local area network (LAN) and wide area network (WAN). Infrastructure will be needed to support communication among computers in one location and libraries that are far apart;
- support the Transfer Control Protocol/Internet Protocol (TCP/IP) network protocol and the Simple Mail Transfer Protocol (SMTP) electronic mail protocol for optimal use of the internet and electronic communication;
- enable access by users from remote workstations. This is necessary because of the central location of the system and which should facilitate accessibility of all member libraries and their end-users who are geographically separated; and
- accommodate access to a CD-ROM server from all workstations, as there might be a need to assemble selected databases in a central server where they can be accessed by all members.

The system will need to be evaluated regularly to ensure that it meets expectations. Other features can be added according to the needs of member libraries.

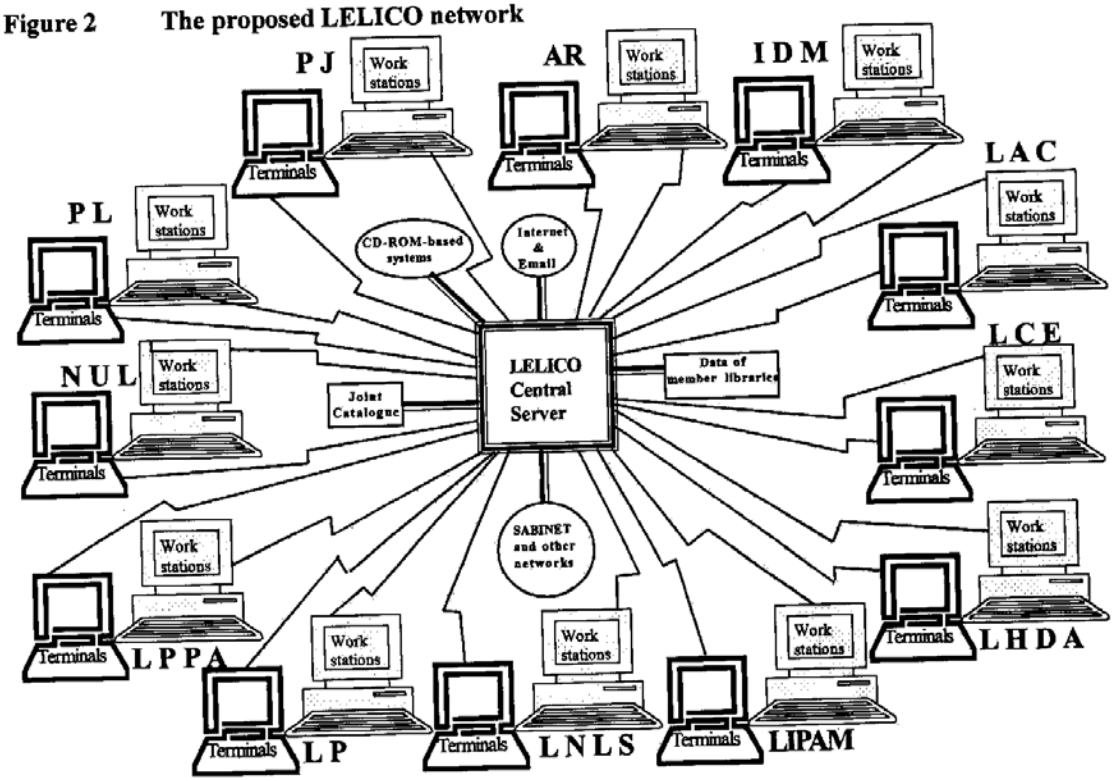
The functions of the system are shown in Figure 1.

Figure 1 LELICO library system



All member libraries should connect to this library system, which should be hosted by a central server through local and wide area networks. The proposed network is represented graphically in Figure 2 below:

Figure 2 The proposed LELICO network



Key:
AR – Agricultural Research
IDM – Institute of Development Management
LAC – Lesotho Agricultural College
LCE – Lesotho College of Education
LELICO – Lesotho Library Consortium
LHDA – Lesotho Highlands Development Authority
LIPAM – Lesotho Institute of Public Administration and Management
LNLS – Lesotho National Library Service
LPPA – Lesotho Planned Parenthood Association
LP – Lerotholi Polytechnic
NUL – National University of Lesotho
PL – Parliament of Lesotho
PJ – Palace of Justice
SABINET – South African Bibliographic Network

The LELICO central server should host all member library data and a joint catalogue. It should be connected to a CD-ROM tower containing databases accessible to members through the established network. The server should also connect members to SABINET and other related networks. Each member library should be able to connect to the server and access all services offered. Editing and amendments of records should only be undertaken by the library concerned; the remainder should only view the contents as required.

6.5 System management structure

The organisational structure of LELICO currently comprises an Advisory Board, an Executive Committee, and working groups. The Advisory Board is the supreme governing and policy making unit of the consortium. It is composed of representatives from member libraries and research institution members of the consortium. According to the constitution of LELICO (LELICO, 2003), the functions of the Advisory Board are to:

- nominate and elect by ballot, members of the National Executive Committee, with the exception of member libraries who are *ex officio* members of the national Executive Committee;
- consider reports of the president, the executive secretary, and the national treasurer;
- assess the consortium's progress;
- formulate the consortium's policy;
- approve planning, funding development, grant proposal, projects, workshops, and networking capabilities of the consortium; and
- amend the constitution of LELICO.

The Executive Committee manages the affairs of LELICO. It consists of the president, vice president, executive secretary, vice secretary, treasurer, vice treasurer and two members. The functions of the Executive Committee are to:

- execute consortium policies adopted by the Advisory Board;
- carry out the day-to-day running of the consortium;
- decide what employment posts should be created, maintained or terminated for the effective running of the consortium;
- engage, determine employment terms and conditions of, and discharge any employees of consortium;
- open, operate and close banking accounts on behalf of the consortium and generally control the funds and finances of the consortium;
- borrow or raise monies and funds;
- invest monies and funds;
- allocate float amounts and other funds to respective branches;
- institute on behalf of or defend legal proceedings against the consortium and its members provided that in urgent circumstances the President may institute or defend such proceedings; and
- acquire either by purchase, lease or otherwise any movable or immovable property on behalf of the consortium or sell, mortgage or otherwise deal with or dispose of any movable or immovable property.

The working groups are formed by the Advisory Board with the recommendation of the Executive Committee. They perform specific tasks in line with the objectives of the

consortium. These include collection development, human resource development, resource sharing, bibliographic services, and information and communication technology (ICT).

6.5.1 The INNOPAC Steering Committee

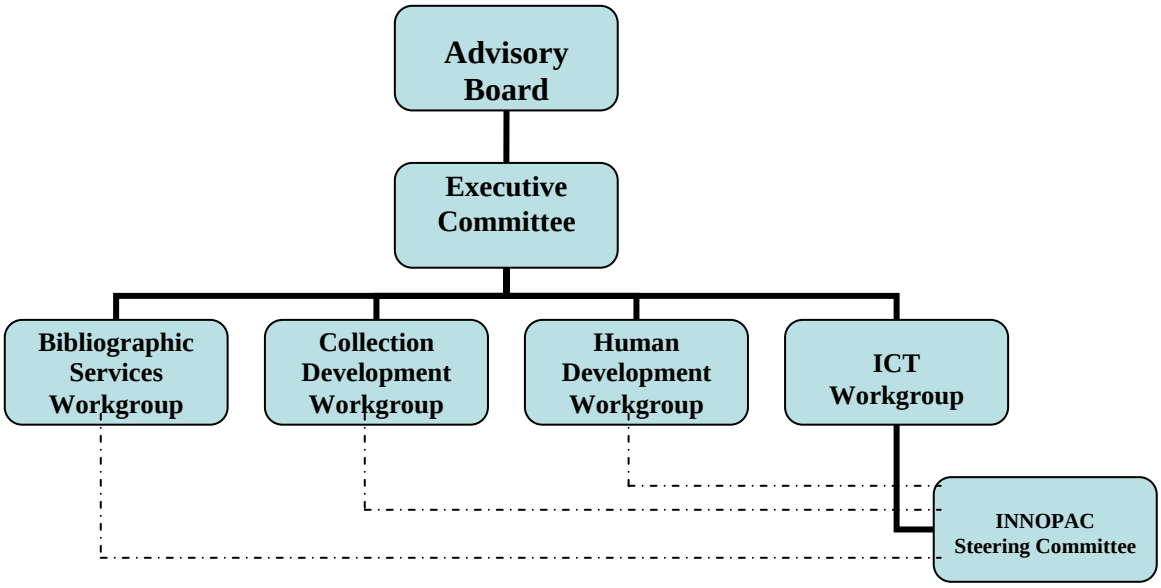
To facilitate the smooth running of the INNOPAC library system within LELICO, it is proposed that an INNOPAC Steering Committee should be formed under the ICT Working Group in the LELICO management structure. GAELIC has a similar committee responsible for the effective operation of the system among member libraries. The INNOPAC Steering Committee should consist of one representative (preferably the system co-ordinator) from each member library. A representative of the information technology section of the host institution should also be a committee member. The INNOPAC Steering Committee should be kept as small as possible to ensure that it remains efficient and effective. Its main objective should be to ensure the effective implementation and use of the INNOPAC library system by LELICO members. Its tasks will be to:

- advise LELICO on the necessary ICT infrastructure, hardware and software necessary for the implementation of the INNOPAC library system;
- liaise with the hosting institution on the maintenance and upgrade of the system;
- co-operate with the Human Resource Development Working Group to provide regular training sessions for member libraries;
- collaborate with the Bibliographic Services and Collection Development working groups;

- recommend additional system features deemed necessary to optimise resource sharing;
- develop the committee's terms of reference in consultation with the host institution;
- develop a sustainable funding model for the system; and
- monitor and evaluate the system so that it performs according to the required standards and remains relevant to the objectives of LELICO.

The modified management structure that encompasses the proposed system structure is illustrated in Figure 3 below.

Figure 3 Modified management structure



6.6 Mode of operation

As the LELICO common library system will operate within a consortium environment, it is expected to reflect the collective goal of members. Although LELICO members are autonomous, they should place the common objectives of the consortium first, and work together to maximise the benefits of the system. It is imperative to recognise the importance of encouraging the extension of library services to the entire nation through access to information in all formats. The consortium and stakeholders (member libraries, institutions, service providers, etc.) should operate as follows:

- LELICO should enter into an agreement with the host institution on matters relating to the operation of a common library system. The National University of Lesotho is best suited to host for reasons given in section 6.3.2, however the final decision will lie with LELICO members.
- LELICO should seek external funding for the implementation of the INNOPAC library system. The initial costs of the system such as installation, hardware, software and other equipment will be paid for by LELICO; subsequent running costs should be borne by individual libraries as determined by members. LELICO should make payments to host institutions on behalf of client libraries for all services.
- The host institution should be responsible for housing the shared server, telecommunication network and other related servers such as the CD-ROM servers that will facilitate the running of the system. The system should be made available to LELICO members through remote access. Data stored in the central

server by members should l be available for access, but it should not be edited or deleted by other members of the consortium.

- The host institution should maintain the system and ensure that it runs smoothly at all times. LELICO members should be called 'client libraries', should report queries to designated personnel at the host library. End users should not directly report to the host library, but through system co-ordinators in their respective libraries.
- The host institutions should keep all records relating to the connection of client libraries to the server. These should be made available to client libraries and LELICO as required.
- LELICO should formulate operating policies that support other related services such as Inter-library loan and document delivery.
- LELICO's INNOPAC Steering Committee should meet regularly to assess the operation of the system and recommend amendments to the host library.
- Client libraries should appoint system co-ordinators who should, among other functions be a contact point between the host library and client library. The system co-ordinators should l report all queries reported to them by staff and users to the host library. The system co-ordinators should also be responsible for the smooth operation of the system in their libraries.
- The INNOPAC Steering Committee should assist system co-ordinators to arrange training for staff in the various modules of the INNOPAC library system. The general patron orientation programmes should remain the responsibility of member libraries.

- Client libraries should direct all payments relating to the hosting and operation of the central server to LELICO, which should then forward them to the host institution.
- Client libraries should link the LELICO library system to their own library websites to ensure wider access of library services to their clientele.

As the consortium develops, it may become necessary to amend and adjust the proposed functions, features, management structure and guidelines. This process should proceed in an open and consultative manner and involve all member libraries.

6.7 Adapting the INNOPAC library system to the specific requirements of a small multi-type consortium in a developing country

The INNOPAC library system has been rated highly in both GAELIC and FRELICO, which are larger than LELICO. As this will be a small consortium in a developing country, there are some issues that need special consideration to enable the effective operation of a common library system. These relate to management of the server, funding and partnerships with bigger neighboring consortia. Most important, a special effort will have to be made to ensure that the benefits of such a system are not only felt by member libraries, but by the entire nation.

If it is implemented correctly, the INNOPAC library system should provide a solution to some of LELICO's long-standing problems, primarily its inability to access and share the resources of its member libraries. The INNOPAC library system has performed well in consortia and libraries in the Southern African region, and LELICO can build on their

experiences. However, because of the high costs of implementation, the consortium will need to solicit seed funding. Both GAELIC and FRELICO received external funding to implement the system, but their own institutions now take care of the running costs.

Before LELICO implements the INNOPAC library system, it should establish and secure reliable funding sources to sustain both the installation and maintenance of the system. Philanthropic organisations such as the Andrew Mellon Foundation, the Carnegie Corporation, and the Bill and Melinda Gates Foundation should be approached for funding. Most important for the long-term success and sustainability of the system, however, is the continued financial support by LELICO members.

The proposed common library system will significantly enhance resource sharing among LELICO member libraries and improve library and information services to the country as a whole. The common library system should assist the Lesotho National Library Services to extend library and information services to regions beyond the capital city of Maseru. Membership of LELICO by libraries in remote regions should benefit the people of Lesotho through improved access to information. One application, for example, could be wider access to the distance education programmes of the Lesotho College of Education and the Lesotho Distance Teaching Centre.

6.8 An INNOPAC-based 'virtual consortium' for the Southern African region

Wider transnational benefits of the INNOPAC library system could be achieved through a co-ordination of all INNOPAC-based consortia and libraries in the Southern African

region. There are a number of libraries and consortia that have already implemented the system, and there may still be more that will consider using the same system. Although this is not the primary focus of this study, it is reasonable to speculate on its broader implications and possibilities. While the details remain to be fleshed out, there are some clear advantages of and challenges for an INNOPAC-based super or 'virtual consortium'.

The advantages would include:

- improving collegial relations and information sharing among information professionals in the region;
- identifying common problems and possible solutions regarding library cooperation in general, and INNOPAC in particular;
- experimenting with models of service that would improve library and information services to the end-users in the region as a whole. In the LELICO case, for example, the aim is to extend benefits to ordinary library users in remote rural areas, and not just to users of consortium member libraries;
- strengthening educational initiatives in the region by extending the reach of distance education programmes such as those offered by the University of South Africa.

The challenges would include:

- sourcing funds to set up and sustain such an ambitious collaborative project. Different budgets may result in different levels of financial commitment. On the

other hand, international funding agencies may see more reason to support initiatives with a wider reach and with stronger political and economic benefits;

- coping with different versions of the system used in the region that could affect collaborative training efforts, as it was found in the case of GAELIC
- dealing with alternative server models used by consortia in the region. Some of these challenges are discussed in sections 4.7 and 5.4;
- finding a solution to the different languages in countries in the region. English is an official language for the majority of countries in the Southern African region, but there are others that use Portuguese, French, and indigenous languages. Regional co-operation would have to be inclusive, sensitive, and responsive to the language needs of all members, and existing region-wide initiatives may be a guide here.

In the end, the decisive success factors may be the availability of funding and the political will to cooperate, but it is very likely that wider regional cooperation among consortia and libraries using the INNOPAC library system would widen access to information and contribute to the growth and development of the Southern African region.

6.8 Conclusion

This chapter proposed a model for LELICO common library system. It recommends that the common library system be managed centrally by one of the member libraries. It highlights the main functions and features of the proposed system. A steering committee responsible for the system is recommended as an addition structure that should be

incorporated into the existing management structure of LELICO. The chapter also shows how members should operate to ensure efficient implementation and utilisation of the system, highlighting roles that should be played by LELICO, the host library and client libraries. It concludes by showing how the INNOPAC library system should be adapted to the specific requirements of a small consortium in a developing country.

CHAPTER SEVEN

CONCLUSION

7.1 Introduction

The study sought to investigate the performance of the INNOPAC library system in GAELIC, FRELICO and three selected libraries in other Southern African countries. The aim of evaluating the system was to establish its value and applicability to small consortia in developing countries. In particular, the study wished to draw lessons for the Lesotho Library Consortium, which is a small multi-type consortium planning to implement a common library system.

In attempting to understand pertinent issues relating to the INNOPAC library system and its performance, especially in a consortium setting, the study posed this research question: **What are the successes and limitations of the INNOPAC library system for selected consortia and libraries in the Southern African region, and how can these guide the implementation and management of this system in the Lesotho Library Consortium?** To answer this question, the following sub-questions were asked:

- Which criteria are required for a comprehensive evaluation of the INNOPAC library system in consortia and libraries in the Southern African region?
- What are the successes and limitations of the INNOPAC library system in selected consortia and libraries in the Southern African region?
- What benefits and impact have the INNOPAC library system had on selected consortia and libraries?

- What are the costs versus benefits of the system?
- What are the system requirements of LELICO members and which system management model would work best for it?
- Given its special challenges, what critical lessons can LELICO learn from selected consortia and libraries in the Southern African region in order to guide the implementation and management of the INNOPAC library system?

7.2 Findings

The findings of the study are based on data collected through subject literature, questionnaires, interviews, documents and site visits.

- **Sub-question 1 – Which criteria are required for a comprehensive evaluation of the INNOPAC library system in consortia and libraries in the Southern African region?**

The following were identified as criteria for a comprehensive evaluation of the INNOPAC library system (see Chapter 2):

- **Functionality** refers to "a set of properties residing inherently in the technology under consideration" (Joint, 2006: 394). It is also about what the product can do for a user. Properties that describe objective functionality of the INNOPAC library system were identified in this study as availability, accessibility, reliability, security, ability to integrate, ability to customise, and upgradeability.

- **Usability** refers to the features that assist a user of the system to navigate the system. This property is considered crucial because the success of the system lies in its effective use and the way it is perceived by users.
- **Costs** involved in the implementation of a system incurred include installation, equipment, training, support and staffing costs;
- **Support** refers to both internal and external assistance that users consult when using the system. In addition to systems personnel, many library systems incorporate manuals that can be referred to when a problem arises.
- **Training** incorporates both initial and ongoing training. It is regarded as an important element as it affects how effectively the user will utilise the system.
- **The vendor's** relationship with the library tends to influence the way in which the system is accepted and used, as well as its long-term maintenance. This relationship is affected by the vendor's stability, influence on user groups, and response to requests, remote support, availability, and frequency of updates and feedback from other customers.
- **Management** of the server is an important additional aspect that has to be examined for a small multi-type consortium like LELICO.

Criteria of particular importance to any consortium or library in the Southern Africa region are costs, support and management. Most libraries in the region are poorly funded and the implementation of a system like INNOPAC would have to be carefully considered. Effective local system support would be required as there is no INNOPAC regional office. Management of the system is of great value

especially for libraries that have no prior system management experience as is the case with the majority of LELICO members.

- **Sub-question 2 – What are the successes and limitations of the INNOPAC library system in selected consortia and libraries in the Southern African region?**

The study found that the INNOPAC library system meets the needs of GAELIC, FRELICO and the three selected libraries in other Southern African countries. The basic modules of Acquisitions, Cataloguing, Circulation, Management Information, OPAC, and Serials are fully operational and performing well. In addition to these modules, individual libraries have installed other modules according to their own requirements. The study established that the system is performing well on all the functionalities of availability, accessibility, reliability, and security.

The INNOPAC library system has proved to be easy to use. Error and help messages are helpful, although they required prior knowledge of the system for better understanding. A novice user would therefore find them difficult to understand. Supporting materials on the management and use of the system in the form of manuals, training and updates are all effective. The management of the system was rated positively, which can be attributed to availability and helpfulness of system managers in these libraries.

However, queries that require vendor input took relatively long as system managers had to wait for a response from the vendor which is based in the USA. Innovative Interface Inc. (vendor) was highly rated in terms of accessibility, availability and helpfulness. The response rate in attending to queries is relatively low. A contributing factor is the different time zones between the USA and the Southern African region, which result in time delays between online reporting and feedback from the vendor.

The system is expensive to install and training and updates fees are high. Funding is of particular concern for libraries in developing countries. High costs could inhibit libraries from purchasing additional modules and requesting additional training, thus limiting the potential benefit that could be derived from the system.

- **Sub-question 3 – What benefits and impact have the INNOPAC library system had on selected consortia?**

The INNOPAC library system has had a positive impact on libraries included in the study. Impact indicators relating to productivity, customer service and cost-saving were found to be positive (see Table 26). Access to other members' holdings was the only component that the system failed to address. The reason is that member libraries have their own individual servers for data storage, and therefore consortia members cannot see the holdings of other members directly unless they go through their websites.

The generally positive impact of the INNOPAC library system on consortia members is evident in the derived benefits. The system is effective and reliable; it also offers a

wide range of modules like the Electronic Resource Management (ERM), Course Reserve and Management Information that seem to meet the needs of members. Another positive factor is that its user base is large, and is increasing both regionally and internationally. System users are therefore able to network and consult each other when they encounter problems.

- **Sub-question 4 –What are the costs versus benefits of the system?**

The overall cost of the system is high. Table 28 shows that costs incurred by some GAELIC and FRELICO libraries range from R680 000 to R4 121 293. These include installation, running, equipment, training and staffing costs. Most libraries implemented the system using grants from the Andrew Mellon Foundation, which covered both the installation and initial training costs. Running costs of the system, which include annual licences, upgrades, additional training and equipment, have to be met by individual libraries. However, the study established that the benefits derived from the system outweigh the costs incurred. The system is effective and reliable; it is responsive to developments taking place in the library and information world, and strives to satisfy member libraries' needs through regular updates. It offers a wide range of functions, which makes it one of the most efficient library systems in the world. It has a growing user base, especially in library consortia, and libraries are able to network and assist each other when they face similar problems**.**

- **Sub-question 5 – What are the system requirements of LELICO members and which system management model would work best for it?**

  The study found that most LELICO members are not yet automated, which impacts on the effective processing of library material. The study also found that even those libraries that are computerised still have problems with their systems (see Table 34). This situation greatly compromises the main goal of the consortium, which is to share resources.

  Lesotho Library Consortium is interested in acquiring a common library system for its members and has made this a priority among its activities (see Table 35). Members have demonstrated a need for the basic library modules as a first step – these include Acquisitions, Cataloguing, Circulations, Management Information, OPAC, and Serials. Additional modules could be installed at a later stage, as the need arises. It is important to have a system with easy to use and effective functionalities. Training, system and vendor support are all important elements of the system. Managing the system centrally is preferred. Centralisation is necessary because of inadequate computer skills among members and a lack of experience in managing automated library systems. Cost-saving is another reason why members are opting for a central model.

  A common library system for LELICO will have financial implications for both the consortium and member institutions. Table 40 shows that most LELICO members are poorly funded, and their budgets do not meet their current needs.

Thus, the additional expense of purchasing a library system will have to be carefully considered. Purchasing the system collectively as a consortium, with funds sought externally, is a viable option. However, the running costs will remain the responsibility of members. LELICO and its member institutions will need to intensify their fund raising efforts to ensure the sustainability of the system.

Library consortia usually adopt either a central or a decentralised server model for managing their systems. Both GAELIC and FRELICO use decentralised models where each library has its own server where all data is stored and managed. SEALS uses a central server, where all records of the four member libraries are stored. Table 32 shows that there are more advantages for a smaller consortium to have a central server than many servers. Members can access all records via a central server, which leads to smoother resource sharing practices such as inter-library loans. Another positive attribute of a central server is the ability simultaneously to upgrade all members' systems. This leads to reduced costs for installing, running, and managing the system. The advantages of decentralised servers are greater autonomy in managing the system, and strengthened relations with IT departments of home institutions. Despite these benefits, a central server has more benefits and is more effective in addressing the common goals of library consortia. Therefore, a central server is recommended for LELICO.

- **Sub-question 6 – Given its special challenges, what critical lessons can LELICO learn from selected consortia and libraries in the Southern African**

region to guide the implementation and management of the INNOPAC library system?

- Common library systems operate within the context of library consortia. Therefore, effective management of library consortia can have a positive effect on the management of a common library system. The study found that the factors needed to contribute to successful management of the selected library consortia are common purpose, governance, technology and funding. Common purpose is the main reason for forming a library consortium. Despite various priorities, policies and clientele, libraries have a common goal of providing their users with relevant information within the shortest possible time. They find it necessary to find common ground to achieve this goal by optimising the synergy of a consortium. For example, in the case of GAELIC and FRELICO, members had a common goal of acquiring a suitable library system that could meet the needs of their libraries.

- Good governance is vital for the survival of a library consortium as both short and long term plans need to be properly executed. Governing bodies of the consortia studied included advisory boards, executive committees and working groups. While advisory boards oversee the overall running of a consortium through polices and regulations, executive committees attend to the day-to-day management of a consortium. Working groups work for specific programmes such as bibliographic services, human development, information and communication technology and resource sharing.

Representation from all member libraries in all governing bodies is necessary to ensure that the needs of all members are met.

- Technology is important for increased productivity and effective communication. It contributes positively towards the resource sharing activities of a consortium by enabling members and end-users speedy access to materials. Where technology is still lagging behind, as in the case of LELICO, resource sharing is limited. Most members have to rely on manual systems to process library resources, which makes library operations less effective.
- Funding is important for the sustainability of a consortium. Continuing funding mechanisms are necessary for the general running of a consortium and for specific projects such as the acquisition of a system. The two consortia under study were externally funded for the installation of the system, but had to find ways of paying for the running expenses themselves. To ensure long-term sustainability of a consortium, participating institutions must be committed to the attainment of its objectives. In addition, members should engage actively in fund raising activities, either individually or collectively.
- The INNOPAC library system is costly and its implementation requires concrete funding plans. Costs of the system include installation, data conversion, maintenance, annual licences, equipment, staffing and support. Both GAELIC and FRELICO received external funding to implement the system, but their institutions have since taken care of the running costs. Before LELICO implements the INNOPAC library system, it should secure reliable

funding sources to sustain both the installation and maintenance of the system. Philanthropic organisations such as the Andrew Mellon Foundation, Carnegie Corporation and the Bill and Melinda Gates Foundation, which have assisted libraries in the past, should be approached.

- Political support for management bodies of member institutions is critical for the effective implementation of the system. Libraries belong to organisations whose governing bodies should accept the idea of a common library system so that they can provide the necessary support. It is important to have regular communication with these bodies from the outset and during the running of the project so that they are kept abreast of developments. LELICO members should emphasise the value of a common library system as a cost-effective solution for improving services to member institutions and to the country. The value of a common library system should be reinforced among staff members who will be the day-to-day users of the system, providing assistance to the end users in libraries.
- It is important to have clear terms of reference for all role-players who will be involved in the implementation of the common library system. As a system that will affect many institutions, there will be different opinions on how to carry out some operations. A consortium should have clear ground rules for all individuals and groups who will be involved in the project. Such rules should encompass the nature of involvement, duration, deliverables and rewarding mechanisms.

- Representivity is vital in all the dealings of the consortium, including the acquisition of the system. This ensures that everybody participates in all aspects. Bigger and better-resourced libraries that tend to take a lead in consortia matters should be sensitive to the needs of smaller libraries and ensure that they are involved. A lack of involvement of smaller libraries can create mistrust and harm the success of the consortium in the long run, as the smaller libraries could feel excluded and decide to look for alternative ways of meeting their needs outside of the consortium.
- A central server model provides an effective solution to many library consortium problems. It is a cheaper option for installation, maintenance and equipment purchases. It also enables multiple stations to upgrade from a single point. Most important, members are able to access each others' holdings directly, and this makes the sharing of resources much easier. Having many servers, as in the case of GAELIC and FRELICO, is expensive and has a negative impact on training and support.
- It is necessary to establish networks with libraries that have already implemented the INNOPAC library system as they can provide valuable advice on the various stages of system implementation. Peer-to-peer learning is helpful, especially in GAELIC where installation was done in phases. Libraries that had installed the system during the first phase acquired the necessary experience for guiding other libraries that installed the system at a later stage.

LELICO has the advantage of being an immediate geographical neighbour to two consortia (FRELICO and GAELIC) and it could learn from their experiences without much difficulty. Having a neighbouring library using the same system is beneficial for problem-solving and sharing of expertise. BCA and NUST both have neighbours using the same system. The University of Botswana has been using the system since 1999 and has the experience to share with the BCA library. Similarly, NUST has the advantage of the University of Zimbabwe as a neighbour, which started using the INNOPAC library system in 2000.

- Technical expertise is advisable, especially when undertaking a project such as the implementation of a system in a multi-library setting. Involvement of the IT personnel of participating institutions should take place in the early stages of the project so that they can advise on pertinent issues, such as equipment and types of networks required. Libraries that are already automated will require additional assistance to convert their data to the INNOPAC library system, and may need expertise in dealing with this process. External and internal expertise should be sought whenever necessary.

- **Main question – What have been the successes and limitations of the INNOPAC library system for selected consortia and libraries in the Southern African region, and how can these guide the implementation and management of this system in the Lesotho Library Consortium?**

Successes:

- **High performance –** The study revealed that the INNOPAC library system is highly valued among GAELIC, FRELICO and the three selected libraries in Southern Africa. The system is performing well in all modules used. The properties of functionality, usability, support and training, and system management were rated positively. The system's good performance is attributed to its versatile functions, which are responsive to the current needs of libraries. It is an effective solution to many of the libraries' operational problems.
- **High impact –** The INNOPAC library system is highly regarded for its positive impact on the libraries. It has increased productivity, improved customer care, enhanced the use of technology and enabled better decision making.

Limitations:

- **Low Response rate of the vendor –** The system vendor is slow to respond to queries.
- **Poor access to other members' holdings –-** The challenge that consortia members face is that of directly accessing other members' holdings. As indicated in section 5.4, part of the solution is to have a central server where the data of all members can be accessed.
- **High costs of the system** – Costs of implementing the system are high. This necessitates seeking external funding to implement the system. Costs relating to training and updates of the system are also high.

Lessons:

It is evident from this study that small library consortia like LELICO can benefit greatly by adopting the INNOPAC library system. Consortia and libraries in the Southern African region that already have common library systems have experienced the kinds of challenges facing LELICO. Therefore, LELICO can learn from their experiences and facilitate the implementation process according to its own requirements.

As highlighted in section 6.2, lessons learned related to:

- System management model;
- Host institution;
- Communication; and
- Training.

Implementation Strategy:

The challenge for LELICO is to apply these experiences and lessons regarding the INNOPAC library system in an effective implementation management strategy. The key elements of the strategy would be:

- clear descriptions of the functions and features of the system;
- management structure required for the system's implementation and management;
- identification of the host institution for the central server;
- the establishment of partnerships with experienced and larger consortia like GAELIC. This could facilitate sharing information and expertise, and enable informed decisions on various issues pertaining to the implementation of the system.

- securing external funding to implement the system, while the running costs are kept to the minimum. LELICO could continue to raise funds to minimise running costs incurred by member libraries.
- lobbying for the establishment of an *Innovative* regional office, would lead to better support and quick response to queries.

7.3 Recommendations

The following recommendations are based on the findings of the study:

- LELICO should opt for the INNOPAC library system as its common system. The findings reveal that LELICO members need a common library system to run their business effectively, and the INNOPAC library system appears to be the answer. The INNOPAC library system has performed well in the two South African consortia, and in the three selected libraries in other Southern African countries.
- LELICO should undertake a feasibility study before implementing the system. Such a study will shed light on whether or not the project is achievable. It will identify cost-effective solutions, and establish the kind of hardware, software, equipment and staffing needed to undertake a project of this nature. A feasibility study will also assess the readiness of LELICO member libraries to participate in the project. A feasibility study will entail consultations with the staff and authorities of participating institutions. The vendor of the system will also be required to give presentations and provide a quotation for the implementation of the system.

- LELICO should implement the INNOPAC library system in phases, preferably in three phases. The first phase should involve the three largest academic libraries in Lesotho, namely NUL, LCE, and LP libraries. Two of these (NUL and LCE) are already automated, so they already possess the necessary computer experience, and they are better-resourced to initiate the process. Participation in subsequent phases will depend on the readiness of the remaining libraries, and the recommendations of the INNOPAC Steering Committee. Implementing the system in phases will provide a learning opportunity for LELICO – the experience gained from the first phase will guide automation projects for the rest of the member libraries.
- LELICO should actively engage in a search for external funding. This will require identifying potential donors such as the Andrew Mellon Foundation, Carnegie Foundation, or the Bill and Melinda Gates Foundation, which have already assisted libraries in developing countries. LELICO would also need to prepare a detailed grant proposal showing all activities and the corresponding funding needed. It is also worth finding out how much individual institutions would be prepared to spend on initial and running costs of the system.
- The running costs of the system should be apportioned on the basis of the level of use by individual libraries. Smaller libraries will probably use the system less than bigger libraries and would therefore be expected to pay less. All records pertaining to the use of the system would be kept by the host institution and this would provide information on how much each institution should pay.

- LELICO should establish links with other regional consortia, especially those that have implemented the INNOPAC library system. As the study showed, GAELIC, FRELICO and SEALS are South African consortia using the system. To implement a central server model, which this study advocates, it might be necessary to visit SEALS and learn first-hand how the model operates. It is recommended also that links be established with libraries in countries such as Botswana, Namibia and Zimbabwe that are already using the INNOPAC library system. Participation in the INNOPAC User Group: Southern Africa conferences would also be beneficial.
- LELICO should strengthen its existing resource sharing programmes. Beside training and workshops, there is not much else being done to share resources. Other activities such as inter-library loans, the compilation of a national bibliography, and staff exchange programmes are some of the areas that LELICO could explore. Acquiring a common library system will contribute positively to achieving some of these resource sharing activities.
- GAELIC and FRELICO should consider the possibility of having a shared central server for their members. The study shows that this model has more benefits than each library having its own server.
- The vendor of the system, Innovative Interface Inc, should consider establishing a regional office, preferably in South Africa where it has several clients. The major problem identified in this study was the vendor's response rate in answering queries submitted by libraries. Given the current rate at which libraries in the Southern African region are opting for the INNOPAC library system, a regional

office would not only address the response rate problem, but would keep the vendor in touch with library developments taking place in this region.

7.4 Suggestions for future research

The study has identified the following as areas that need further research:

- The effectiveness of single-type library consortia versus multi-type consortia is one area for research. Most consortia, including those studied were academic library consortia. While there are some multi-type library consortia in other parts of the world, Africa as a late comer in consortium development, does not have many consortia consisting of various types of libraries. It would be beneficial to investigate the effectiveness of both types, especially in Africa where there might be special factors that influence the operation of both types of consortia. This kind of investigation would be relevant for LELICO, which is a small, multi-type library consortium consisting of academic, national, public and special libraries.
- Comparative analysis of system management models within consortia is required to establish comparative strengths and weaknesses. This study established that a central server model is more effective in addressing most consortium needs, but a more detailed investigation is needed to establish the economics of both models and to flesh out the implications of each model.
- The effectiveness of consortia governing bodies should be studied. These include advisory boards, executive committees, working groups and steering committees. It is necessary to explore the type and number of governing

structures needed for the effective running of a consortium, especially given the fact that members of these structures operate according to the obligations and time limits of their own employers.

- The impact of geographical distance on the operation of a consortium is another area that is worth investigating. For example, the study revealed that geographically remote members of GAELIC do not participate fully in the business of the consortium because they are far from Johannesburg and Pretoria where the majority of members are located, and where most meeting and training sessions are held. Identification of these obstacles and challenges is needed.
- Performance evaluation of the INNOPAC library system by the end-user is required. Research studies on this system, including the current one, have concentrated mainly on the perspectives of library professionals. The end-users are the ultimate beneficiaries of any library system, and therefore an evaluation of the system from their perspective will shed light on its effective use.
- A national impact assessment study of the INNOPAC library system is required in countries where it has been implemented which would look at the way in which improved access facilitated by the system affects national development and empowerment of citizens. It would be crucial to assess how the system contributes towards the attainment of national and global initiatives such as the Millennium Development Goals (MDGs), and the Education for All (EFA) programmes.

- A wider regional cooperation among consortia and libraries using the INNOPAC library system in the Southern African region should be considered. Such collaboration would contribute positively towards enhanced access to information and it would support other development initiatives in the region.
- Finally, it is recommended that research should be undertaken to find out why LELICO members and other libraries in Lesotho are not participating in resource sharing activities. The study found that resource sharing is almost non-existent among libraries in Lesotho. It is worth identifying the barriers that prevent libraries from sharing resources and to find mechanisms for improving the situation. Nonetheless, the proposed common library system will play a significant role in enhancing resource sharing among LELICO members.

7.5 Conclusion

This study revealed that the INNOPAC library system is performing well in GAELIC, FRELICO and the three selected libraries in other Southern African countries. Good performance is attributed to staying abreast of developments in the library world, and offering a variety of functions that satisfy library needs. The system is easy to use and is well supported by training, manuals and upgrades. However, the study shows that the vendor response rate needs to be improved for the system to operate optimally. The study also revealed that the system has had a generally positive impact on the consortia investigated. It has contributed to increased productivity, better customer service, better

use of technology and better decision-making within the consortia. However, direct access to other members' holdings is still not possible. This could be solved by having a central server that allows members to store their records, part of which could then be accessible to other members.

The study found that the INNOPAC library system is expensive in terms of implementation and maintenance. Most libraries that have implemented the system had to find external funding to take care of initial costs. Despite the high costs, the system is highly effective and worth the expense. A cheaper alternative is to use a central server model that involves storage of data belonging to many libraries, and therefore enabling access to the holdings of all member libraries. This model caters for simultaneous upgrades and requires fewer management staff.

The study shows that the majority of the Lesotho Library Consortium's members are not automated. Even those that are automated have problems with their library systems. Members have expressed a need for a common library system to be implemented in all member libraries. A model for a LELICO common library system was proposed in this study. The model identifies the INNOPAC library system as a common library system for LELICO because of its good performance in the Southern African region. However, the limited budgets of LELICO libraries could be a serious challenge for the implementation and management of the system. External funding is recommended as an option for financing the initial costs of installing the system. The study recommends that LELICO's library system should be centrally managed because of the positive attributes of this

model. It further recommends a modified management structure for LELICO that would include a steering committee responsible for the implementation of the INNOPAC library system.

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Appendices

Appendix 1 Letter of Introduction for research student – Ms Nthabiseng Taole

Dear Library Director

Ms Nthabiseng Taole is a PhD student in the Department of Information Science at the University of Pretoria. She is conducting research on the INNOPAC library system in GAELIC and FRELICO, with a special focus on the Lesotho Library Consortium (LELICO).

She has now reached the stage where she wishes to administer the questionnaires and conduct interviews. I shall sincerely appreciate your assistance to her in this study, and thank you in anticipation.

Sincerely,

Professor Archie L Dick
(Promoter)
.

Appendix 2 QUESTIONNAIRE FOR **LIBRARY MANAGEMENT**

Research Topic: Performance evaluation of the INNOPAC library system in a consortium in a developing country: implications for the Lesotho Library Consortium

Researcher: Nthabiseng Taole

The aim of this research is to examine the value of the INNOPAC library system for GAELIC and FRELICO, and to find out to what extent this system is applicable to small consortia like the Lesotho Library Consortium. Please give the true picture of the situation in your library. Feel free to express your views and please do not write your name on the questionnaire.

Basic information:
Name of the library: ----------

Pre-merger name, if applicable: ----------

Date: ----------

1. When did the library join GAELIC?
……
2. Please list factors that motivated the library to join GAELIC
……
……
……
……

3. What have been the benefits of GAELIC membership for your library?
……
……
……
……

4. How strongly do you agree/disagree that the following factors contribute to the successful management of a consortium? Please tick the appropriate box.

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Governance					

Funding					
Technology					
Common purpose					

4. How long has the library been using the INNOPAC library system?

……

5. What system was used in the library before the INNOPAC library system?

……

6. What were the reasons for changing to the INNOPAC library system?

……

……

……

……

7. Please estimate costs relating to the system since its installation:

	Amount
Installation costs	
Running costs (hardware, software, etc.)	
Equipment (servers, etc.)	
Updates	
Training	
Staffing	
Others (specify)	
TOTAL	

8. What have been the benefits of the INNOPAC library system for your library?

……

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……

.....

9. Please comment on the cost of the system against the benefits mentioned above

……

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……

10. How would you rate the system's impact on the following, on the scale of 1 to 5?

1=lowest/poorest and 5=highest/best

	Rank
Increased productivity	
Improved customer service	
Access to GAELIC members' holdings	
Cost savings	
Decision making	

Comments:……

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11. What problems relating to the INNOPAC library system has your library encountered?

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12. How did you deal with those problems?

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14. GENERAL COMMENTS

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THANK YOU!

Appendix 3

QUESTIONNAIRE FOR LIBRARY PROFESSIONALS

Research Topic: Performance evaluation of the INNOPAC library system in a consortium in a developing country: implications for the Lesotho Library Consortium

Researcher: **Nthabiseng Taole**

The aim of this research is to examine the value of the INNOPAC library system for GAELIC and FRELICO, and to find out to what extent this system is applicable to small consortia like the Lesotho Library Consortium. Please give the true picture of the situation in your library. Feel free to express your views and please do not write your name on the questionnaire.

Basic information:

Name of the library: ----------

Section: --------- ----------

Date: ----------

LIBRARY OPERATIONS

1. Please tick the INNOPAC library system module(s) that you use on a regular basis?
Acquisitions
Cataloguing
Circulation
Course Reserves
OPAC
Serials

2. Rate the performance of the module(s) you use:

	Very poor	Poor	Satisfactory	Good	Excellent
Acquisitions					
Cataloguing					
Circulations					
OPAC					
Course reserves					
Serials					

Comments:……
……
……

……
……

3. Please rate system's **functionality** according to:

	Very poor	Poor	Satisfactory	Good	Excellent
Availability					
Accessibility					
Reliability					
Security					

Comments:……
……
……
……..

4. Please rate the system's **usability**:

	Very poor	Poor	Satisfactory	Good	Excellent
Ease of Use					
User-friendliness					
Error messages					
Help messages					

Comments:……
……
……
……..

SUPPORT AND TRAINING

5. Rate system's Support and training in terms of:

	Very poor	Poor	Satisfactory	Good	Excellent
User manuals					
Tutorials					
Initial training					
On-going training					
New releases/updates					

Comments:……
……
……
……..

5. Rate the quality of **system management** in terms of:

	Very poor	Poor	Satisfactory	Good	Excellent
Accessibility					
Availability					
Helpfulness					
Response rate					

Comments:……
……
……
……

6. Rate the **vendor** (Innovative) in terms of:

	Very poor	Poor	Satisfactory	Good	Excellent
Accessibility					
Availability					
Helpfulness					
Response rate					

Comments:……
……
……
……

7. Is your library a member of the following user groups?

a) Innovative User Group (Please tick) Yes No
If the answer is 'Yes', how useful it to your section/department?
(Please tick the answer)

Useful Average Not useful

If the answer is 'No', why?

……
……
……
……

b) Do you subscribe to the Innovative User Group listserv?
If you do, please comment on its value to your section/department
……
……
……
……
……

If you don't, why?

……
……
……
……

c) Is your library a member of the INNOPAC User Group: Southern Africa Yes No
If the answer is 'Yes' – how useful is it to your section/department?

Useful Average Not useful

If the answer is 'No', why?

……
……
……
……

8. GENERAL COMMENTS: ----------

THANK YOU!

Appendix 4

QUESTIONNAIRE FOR SYSTEM MANAGEMENT

Research Topic: Performance evaluation of the INNOPAC library system in a consortium in a developing country: implications for the Lesotho Library Consortium

Researcher: Nthabiseng Taole

The aim of this research is to examine the value of the INNOPAC library system for GAELIC and FRELICO, and to find out to what extent this system is applicable to small consortia like the Lesotho Library Consortium. Please give the true picture of the situation in your library. Feel free to express your views and please do not write your name on the questionnaire.

Basic information:

Name of the library: ----------

Date: ----------

1. For how long has the library been using the INNOPAC library system?

……

2. Which system was in operation before the INNOPAC library system?

……..

3. What modules are available in your system?

……

……

……

……

……

4. Which modules are not yet installed? And Why?

……

……

……

……

5. Rate the system's performance in terms of:

a) Library operations (please tick the appropriate box)

	Very poor	Poor	Satisfactory	Good	Excellent
Acquisitions					
Cataloguing					
Circulation					
OPAC					
Management Information					
Serials					
Others(specify)					

Comments:……

……

……

……

.....

b) System's functionality

	Very poor	Poor	Satisfactory	Good	Excellent
Availability					
Accessibility					
Reliability					
Security					
Ability to integrate with other systems					
Ability to customise to own needs					
Upgradeability					

Comments:……

……

……

……

c) Usage

	Very poor	Poor	Satisfactory	Good	Excellent
Ease of Use					
User-friendliness					
Error messages					
Help messages					

Comments:……

……

…….

6. Support and training

Rate system's support and training in terms of:

	Very poor	Poor	Satisfactory	Good	Excellent
User manuals					
Tutorials					
Initial training					
On-going training					
New releases/updates					

Comments:……

……

……

……

7. Vendor

Rate the vendor (Innovative) in terms of:

	Very poor	Poor	Satisfactory	Good	Excellent
Accessibility					
Availability					
Helpfulness					
Response rate					

Comments:……

……

……

……

8. Do you subscribe to the Innovative User Group listserv? Yes No
If yes, comment on its value to your Library

……

……

……

……

……

If not, why?

……

……

……

……

9. Is your library a member of the following user groups?

a) Innovative User Group (please tick) Yes No
If 'Yes' Comment on its value to your library

……

……

……

……

……

If 'No', why?

……

……

……

b) INNOPAC User Group: Southern Africa Yes No
If 'Yes' Comment on its value to your library

……

……

……

……

If 'No', why?

……

……

……

c) Please comment on the value of the GAELIC INNOPAC System Workgroup to your library.

……

……

……

……

……

9. Costs

Please estimate the following costs on the INNOPAC system:

Activity	Costs (in Rands)
Installation	
Initial training	
Ongoing training	
Licence per annum	
Others (specify)	

10. COMMENTS – Pitfalls and what to look out for during before during and after implementation

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11. GENERAL COMMENTS

THANK YOU!

Appendix 5

QUESTIONNAIRE FOR SYSTEM MANAGEMENT – OTHER SOUTHERN AFRICAN LIBRARIES

Research Topic: Performance evaluation of the INNOPAC library system in a consortium in a developing country: implications for the Lesotho Library Consortium

Researcher: Nthabiseng Taole

Basic information:

Name of the library: ----------

Date: ----------

1. For how long has the library been using the INNOPAC library system?

……

2. Which system was in operation before the INNOPAC library system?

……..

3. What modules are available in your system?

……

……

……

……

……

4. Which modules are not yet installed? And Why?

……

……

……

……

5. Rate the system's performance in terms of:

a) Library operations (please tick the appropriate box)

	Very poor	Poor	Satisfactory	Good	Excellent
Acquisitions					
Cataloguing					
Circulation					
OPAC					
Management Information					
Serials					
Others (specify)					

Comments:……

……

……

……

.....

b) System's functionality

	Very poor	Poor	Satisfactory	Good	Excellent
Availability					
Accessibility					
Reliability					
Security					
Ability to integrate with other systems					
Ability to customise to own needs					
Upgradeability					

Comments:……

……

……

……

c) Usage

	Very poor	Poor	Satisfactory	Good	Excellent

Ease of use					
User-friendliness					
Error messages					
Help messages					

Comments:……

……

……

……

6. Support and training
Rate system's support and training in terms of:

	Very poor	Poor	Satisfactory	Good	Excellent
User manuals					
Tutorials					
Initial training					
On-going training					
New releases/updates					

Comments:……

……

……

……

7. Vendor
Rate the vendor (Innovative) in terms of:

	Very poor	Poor	Satisfactory	Good	Excellent
Accessibility					
Availability					
Helpfulness					
Response rate					

Comments:……

……

……

……

8. Do you subscribe to the Innovative User Group listserv? Yes No
If yes, comment on its value to your Library

……

……

……

……

……

If not, why?

……

……

……

……

9. Is your library a member of the following user groups?

a) Innovative User Group (Please tick) Yes No
If 'Yes' Comment on its value to your library

……

……

……

……

……

If 'No', why?

……

……

……

b) INNOPAC User Group: Southern Africa Yes No
If 'Yes' Comment on its value to your library

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……

……

If 'No', why?

……

……

……

c) Please comment on the value of the GAELIC INNOPAC System Workgroup to your Library.

……

……

……

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……

9. Costs

Please estimate the following costs on the INNOPAC System:

	Amount in Rands
Installation costs	
Running Costs (hardware, software, etc.)	
Equipment (servers, etc.)	
Updates	
Licence per annum	
Training	
Staffing	
Others (specify)	

10. COMMENTS – Pitfalls and what to look out for before, during and after implementation

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11. GENERAL COMMENTS

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THANK YOU!

Appendix 6

QUESTIONNAIRE FOR LELICO LIBRARY HEADS

Research topic: Performance evaluation of the INNOPAC library system in a consortium in a developing country: implications for the Lesotho Library Consortium

Researcher: Nthabiseng Taole

The aim of this research is to examine the value of the INNOPAC library system for GAELIC, and to find out to what extent this system is applicable to small consortia like the Lesotho Library Consortium. Please give the true picture of the situation in your library. Feel free to express your views.

Name of the library: ----------

Type of Library (please circle): Academic Special School Other (specify) ----------

Date: ----------

1. Please list the benefits that your library has derived from LELICO membership

---

---

2. Which other benefits would you like LELICO to provide?

---

3. Prioritise the following proposals for LELICO's future plans, so that each proposal has a different value:

Proposal	Rank
Install a common library system for all members	
Expand membership	

Improve communication (newsletters, more meetings, etc.)	
Partner with other regional consortia	
Engage in fund raising activities	
Provide more professional development opportunities	

4. Is your library automated? (please circle the answer)

Yes No

If Not, why?----------

---

5. Which system is currently installed in your library?

---

6. Please tick modules used in your library

Acquisitions

Cataloguing

OPAC

Management Information

Serials

Others (please specify)----------

---

7. Which modules would you recommend for the LELICO common library system? (please tick)

Acquisitions

Archives

Cataloguing

OPAC

Management Information

Serials

Others (please specify)----------

---

8. Please list any problems that you have encountered with your current system:

---

9. Rate the importance of the following for a common library system's **functionality:**

(On the scale of 1 to 5, where 1=least important, 5= extremely important)

	Rating
Availability	
Accessibility	
Reliability	
Ability to customise to own needs	
Security of the system	
Possibility for upgrading	

10. Rate the importance of the following for a common library system's **usability:**

(On the scale of 1 to 5, where 1=least important, 5= extremely important)

	Rating
User-friendliness	
Ease of use	

Error messages	
Help messages	

11. Rate the importance of the following for a common library system's **support**:

(On the scale of 1 to 5, where 1=least important, 5= extremely important)

	Rating
User manuals	
Tutorials	
Initial training	
Ongoing training	

12. Rate the importance of the following for a common library system's **vendor:**

(On the scale of 1 to 5, where 1=least important, 5= extremely important)

	Rating
Accessibility	
Availability	
Helpfulness	
Response Rate	

13. What has been the budget of the library for the past three years?

	2004	2005	2006
Amount in Maloti*			

* 1 loti = 1 Rand

14. Has the money allocated to the library been enough for its needs? (please tick)

Yes No

14. GENERAL COMMENTS:

THANK YOU!

Appendix 7

OBSERVATION SCHEDULE

Research topic: **Performance evaluation of the INNOPAC library system in a consortium in a developing country: implications for the Lesotho Library Consortium**

Researcher: Nthabiseng Taole

1. Check the availability of the following modules:
    - Acquisitions
    - Cataloguing
    - Circulations
    - Management Information
    - OPAC
    - Serials
    - Other

2. Check the availability of internet services

3. Check the availability of inter-library lending services

3. Observe any other electronic services available in libraries

4. Check how consortia members access other members' holdings

5. Check staffing in the systems section

Appendix 8

INTERVIEW SCHEDULE

SYSTEM MANAGERS

Background information:

Name of respondent:

Position held in your library:

Position held in consortium (if any):

Name of institution:

Date of interview:

1. General information:

When did your institution join the consortium?

How many institutions are members of the consortium?

Give reasons why your consortium/institution decided to use the INNOPAC library system.

2. Performance of the INNOPAC/Millennium Pac

Which modules have been installed in your system?

Comment on their performance

Comment on the general performance of the system in regards to:

Functionality (availability, accessibility, reliability, security)

Usability (ease of use, user friendliness, error messages, help messages)

Support and training (manuals, tutorials, initial training, ongoing training)

Vendor (accessibility, availability, helpfulness, response rate)

Comment on the management of the system?

Comment on the value of Innovative user groups and listserv?

Innovative User Group

Innovative User Group listserv

GAELIC INNOPAC Work Group

INNOPAC User Group: Southern Africa

How has the system contributed towards the performance of consortium member libraries?

Have you had any problems during and after implementation of the system?

If you had, how did you deal with those problems?

3. Decentralised server model

What has been your experience in using multiple servers within consortia?

What are the advantages and disadvantages of decentralised servers in your consortium?

What problems have you encountered this model?

What have done to solve those problems?

Comment on the cost versus the benefits of a central server model within a consortium?

What pitfalls should one look out for when implementing multiple servers within a consortium?

4. Staffing

How many people manage the system in your institution?

How are they funded?

6. Funding

Who funded the installation of the INNOPAC/Millennium library system in consortium/institution?

What was the cost (estimate) of implementing the INNOPAC library system?

Who takes care of the running costs of the system?

Have there been any unexpected costs?

If there have been, how have these been funded?

7. Resource sharing

Are there any resource sharing activities among consortium members?

Please describe them.

How has the common library system contributed towards resource sharing within your consortium?

Are any other resource sharing activities you would like the consortium to engage in?

Thank you very much for your time!

Appendix 9

INTERVIEW SCHEDULE

SEALS PROJECT MANGER

Background information:

Name of respondent:

Position held in your library:

Position held in SEALS:

Name of institution:

Date of interview:

1. SEALS information:

When was SEALS formed?

How many institutions are members of SEALS?

Please name them and their type (academic, special, school, etc.)

Please describe the automation status of SEALS libraries before they converted to the INNOPAC/Millennium Pac library system

Give reasons why SEALS decided to use the INNOPAC library system.

2. Performance of the INNOPAC/Millennium Pac in SEALS

Which modules have been installed in your system?

Comment on their performance

Comment on the general performance of the system in regards to:

Functionality (availability, accessibility, reliability, security)

Usability (ease of use, user friendliness, error messages, help messages)

Support and training (manuals, tutorials, initial training, ongoing training)

Vendor (accessibility, availability, helpfulness, response rate)

Comment on the management of the system?

Comment on the value of Innovative user groups and listserv?

Innovative User Group

Innovative User Group Listserv

INNOPAC User Group: Southern Africa

Do you have any linkages with the GAELIC INNOPAC System Workgroup?

How has the system contributed towards the performance of consortium member libraries?

Have you had any problems during and after implementation of the system?

If you had, how did you deal with those problems?

3. Central server model

Where is the server located?

What has been your experience in using a central server?

What are the advantages of a central server model for SEALS?

Have you had any problems in using a central server for SEALS libraries?

What have done to solve those problems?

Comment on the cost versus the benefits of a central server model within a consortium?

What pitfalls should one look out for when implementing a central server within a consortium?

4. Staffing

How many people manage the server?

Are they employed by SEALS or by a member institution?

Who funds them?

5. Governance of SEALS and the common library system

Describe the governance of SEALS structure?

Is there any structure within SEALS that is responsible for the common library system?

If there is, describe its composition.

6. Funding

Who funded the installation of the INNOPAC/Millennium library system in SEALS?

What was the cost (estimate) of implementing the INNOPAC library system?

Who takes care of the running costs of the system?

Have there been any unexpected costs that relate to the central server?

If there have been, how have these been funded?

7. Resource sharing

Are there any resource sharing activities among SEALS libraries?

Please describe them.

How has the common library system contributed towards resource sharing within SEALS?

Are any other resource sharing activities you would like the consortium to engage in?

8. General

Is the any relevant document that you would like me to look at?

I appreciate the time you took for this interview. Is there anything else you think would be helpful for me to know about the central server model in a consortium?

Would it be alright to call you if I have more questions?

Thank you very much for your time!