硕士学位论文

赞比亚大学图书馆特色论文及著作数字化研究

Digitalization of Scholarly Works at the Special Collections of the
University of Zambia Library

作　者：亨利 旁格纳尼 祖鲁

Henry Panganani Zulu

指导教师：李瑞勤 教授

学科专业：情报学

研究方向：信息传播

学位类型：学历硕士

东北师范大学学位评定委员会

2010 年 5 月

学位论文作者毕业后去向：

工作单位：___赞比亚大学___　电话：00260977882651

通讯地址：___赞比亚,卢萨卡___　邮编：10101

摘 要

本研究针对读大学、高等院校、研究中心和一些分布在卢萨卡、中央省和铜带省的赞比亚图书馆联盟机构的成员。本研究旨在找出在赞比亚没有任何种类的电子论文的原因。由于赞比亚大学在赞比亚建校最早，规模最大，研究生培养计划最多，因此赞比亚大学被选为本研究的研究对象。本研究把范围缩小到赞比亚大学图书馆特藏部，因为特藏部是主图书馆的一个部门，特藏部收藏了所有的学位论文、学术论文和其他研究的信息资源。

我们的研究有 150 份调查问卷。在这些调查问卷中，只有 111 份是值得收集和分析的有效问卷。收集数据后，我们用社会科学统计软件来分析数据，然后对分析结果进行说明。从数据统计中我们发现有 51.4% 的受访者对有关电子论文的知识和信息有足够的了解，96.4% 的受访者表示他们将支持电子论文的引进，53.2% 的受访者愿意作为工作人员来支持电子论文，61.3% 的受访者说在他们的工作组织机构中有信息和通信技术政策，97.3% 的受访者愿意参与电子论文，最后，当然也很重要，一些使用电子论文的益处也被列表呈现在调查问卷中供受访者勾选出适用于他们各自情况的益处。显然，所有被勾选出的益处都适用于大多数受访者。

另一方面，研究发现 65.8% 的受访者对网络化数字图书馆论文一无所知。当问及受访者所在图书馆或组织机构对建设电子论文的财政支持时，96.4% 的答案是"没有"。

总结研究发现，电子论文作为这个全球项目的先锋组织会持续给予新成员提供必要的援助，这样，用于咨询和网络化数字图书馆论文的电子论文可以在赞比亚大学的主图书馆特藏部建立。赞比亚大学图书馆将与其他网络化数字图书馆相同，赞比亚大学图书馆特藏部一定会在援助下建立电子论文。

关键词：数字化；电子论文；图书馆；网络技术；信息资源;

ABSTRACT

The study targeted universities, higher learning institutions, research centers and some of the Zambian Libraries Consortium (ZALICO) Institutional library members in Lusaka, Central and Copper belt provinces of Zambia. The study had one objective, which was to find out why there was no any kind of Electronic Theses and Dissertations (ETDs) in Zambia. In the study the University of Zambia was selected as the main focus because it is the oldest University, biggest and has the largest number of post graduate programs in Zambia. The study also narrowed down the scope by focusing on the University of Zambia Library's Special Collections which is a division in the Main Library that keeps all the Theses, Dissertations and other Research Information materials.

In the research of 150 respondents, we managed to collect and analyze 111 completed questionnaires. After collecting data, that data was analyzed using Statistical Package for Social Science (SPSS) and then interpreted. From the statistics we found out that 51.4% of the respondents had enough knowledge and information about Electronic Theses and Dissertations (ETDs), 96.4% said they could support the introduction of Electronic Theses and Dissertations (ETDs), 53.2% said they would avail themselves as staff support, 61.3% said there was an Information and Communication Technologies (ICTs) policy in their work organization, 97.3% said they were willing to participate in various roles of the Electronic Theses and Dissertations (ETDs)project, and lastly but not the least, a list of some of the

benefits of having an Electronic Theses and Dissertations (ETDs) was presented to the respondents to tick those benefits that would apply to their situation. Apparently all the benefits were ticked meaning that they applied to most of the respondents' situation.

On the other hand the research found out that 65.8% of the respondents did not have any knowledge about the Networked Digital Library of Theses and Dissertations (NDLTD). And when asked for financial support for the establishment of an Electronic Theses and Dissertations (ETDs) at their University or Organization, we got 96.4% for the **no** response.

In summary the Study found out that, yes an Electronic Theses and Dissertations can be established at the Special Collections of the University of Zambia Main Library in consultation and support from the Networked Digital Library of Theses and Dissertations (NDLTD), the pioneers of this world wide project. NDLTD with its main aim of helping any new member acquire Electronic Theses and Dissertations (ETDs), have continued to render all the necessary implementation assistance to new members. It is from this background that an Electronic Theses and Dissertations (ETDs) will be established at the University of Zambia.

KEYWORDS: Digitalization; Electronic Theses and Dissertations; Libraries; Network Technologies; Information Resources

TABLE OF CONTENTS

CHAPTER 1 INTRODUCTION

CHAPTER 2 A SHORT HISTORY OF ZAMBIA, THE UNIVERSITY OF ZAMBIA, THE DIRECTORATE OF RESEARCH AND GRADUATE STUDIES, THE UNIVERSITY OF ZAMBIA LIBRARY, AND SPECIAL COLLECTIONS

CHAPTER 3 STATEMENT OF THE STUDY, SIGNIFICANCE, CONCEPTUAL FRAMEWORK, OBJECTIVE, RESEARCH QUESTIONS

CHAPTER 4 LITERATURE REVIEW

CHAPTER 5 STUDY DESIGN AND METHODOLOGY

CHAPTER 6 DATA ANALYSIS AND INTERPRETATION

TABLE OF ACRONYMS

AGOA………………………………………………….African Growth and Opportunity Act

AISI……………………………………………………African Information Society Initiative

AJOL…………………………………………………African Journal On Line

BSAC…………………………………………………..British South Africa Company

CALIS…………………………………China Academic Library & Information System

CBU………………………………………………….Copper belt University

CDDB…………………………………………………Chinese Dissertations Database

CD-ROM………………………………………………Compact Disc-Read Only Memory

CDs…………………………………………………Compact Discs

DRGS…………………………………………………Directorate of Research and Graduate Studies

DTD…………………………………………………Document Type Definition

DVD…………………………………………………Digital Video Disc

ETDs…………………………………………………Electronic Theses and Dissertations

FINNIDA………………………………………………Finish International Development Agency

GDP………………………………………………….Gross Domestic Product

HIPIC…………………………………………………Highly Indebted Poor Countries Initiative

HIV/AIDS……Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome

HTML………………………………………………..Hyper Text Markup Language

ICTs ……………………………………………..Information and Communication Technologies

INASP………………International Network for the Availability of Scientific Publications

IR……………………………………………Institutional Repository

ISBN…………………………………………International Standard Book Number

ISO………………………………………..International Organization for Standardization

ISP……………………………………Internet Service Provider

ISTIC……………………………Institute of Scientific & Technical Information of China

LAN…………………………..Local Area Network

MCA……………………………….Millennium Challenge Account

MoU……………………………..Memorandum of Understanding

NDLTD………………………Networked Digital Library of Theses and Dissertations

NENU…………………………..Northeast Normal University

OAI…………………………..Open Archive Initiative

OCLC…………………………..Online Computer Library Center

OPAC…………………………..Online Public Access Catalogue

PDF…………………………..Portable Document File

PEPFAR………………………..President's Emergency Plan for AIDS Relief

PERI……………………… ….Programme for the Enhancement of Research Information

PRC……………………………..The Peoples' Republic of China

SGML…………………………Standard Generalized Markup Language

SOLINET………………………..Southeastern Library Network

SPSS…………………………..Statistical Package for Social Science

SURA…………………………Southern Universities Research Association

TIGA……………………………Technology In Government In Africa

UMI…………………………...University Microfilms Internal/Proquest

UNHCR…………………………United Nations High Commission for Refugees

UNZA…………………………...University of Zambia

UNZA Library……………………University of Zambia Library

UNZALIBS………………………University of Zambia Library System

USA………………………………United States of America

USAID…………………………..United States Agency for International Development

UTH………………………..University Teaching Hospital

WFP……………………….World Food Program

ZALICO………………..Zambian Libraries Consortium

LIST OF FREQUENCY TABLES

CHAPTER 1

INTRODUCTION

This study on digitization of scholarly works at the Special Collections of the University of Zambia Library, Lusaka, Zambia, was conducted in some of the libraries in Zambia's three provinces of Lusaka, Central and Copper belt. The study was about finding out the reasons why as a country and a university we do not have any Electronic Theses and Dissertations (ETDs), when there are many institutions and organizations like the Networked Digital Library of Theses and Dissertations (NDLTD) that could be approached for help and would willingly render all the assistance required for the establishment of ETDs at almost free of charge.

After our literature review, it was disheartening to note that despite the University of Zambia having all the requirements needed for the establishment of Electronic Theses and Dissertations (ETDs) there are no ETDs in the University. Both our Masters and PhD candidates were until recently submitting their theses and dissertations in print format. To make things worse, we also learned that in the region Zambia is the only country that does not have any Electronic Theses and Dissertations at all. In Southern Africa, countries like Botswana, Malawi, Mozambique, Namibia, Rwanda and Zimbabwe which are Zambia's neighbors all do have ETDs. In fact the list of countries in Africa that have ETDs include South Africa, Lesotho and Swaziland while in North Africa it is Algeria, Egypt, Sudan and Ethiopia.

To us this scenario was not pleasing to our country and we felt challenged that we came up with the idea of this study so that after research we could provide answers as to why there were not ETDs of any kind in Zambia. In the study particular attention was paid to the Special Collections of the University of Zambia Library where it was envisaged that the findings of the study would provide the basis on which the University of Zambia

management would build a case for the establishment of ETDs in its premises. Through this study we recommended that Zambia becomes a signatory member of the Networked Digital Library of Theses and Dissertations (NDLTD). In that way Zambia will be in an advantageous position to have ETDs established at the University and she would benefit a lot in terms of accessing research information electronically through out the world.

After data was analyzed it was found that a majority of the sampled respondents especially those from the universities had enough knowledge and information about ETDs, they desired to have ETDs, and said would support the idea of introducing ETDs in their universities. Another important finding was that 108 respondents from our sample of 111 were willing to participate in any capacity and play a leading role to make a contribution towards the establishment of ETDs at their university, institution or organization.

In addition, from the consulted literature we also learned that ETDs have a lot of benefits over their predecessor the print theses and dissertations. The implication of this for us was that if we were to establish the ETDs project at the University of Zambia Library's Special Collections then students, researchers, teaching staff, the University of Zambia community and the country as a whole would enjoy those ETDs benefits.

In conclusion, our research found out that with support from the NDLTD we can see ETDs being established in the Special Collections of the University of Zambia Library in July, 2010. And in earnest we urge the University authorities to give the findings of this study/research the attention it deserves because as a country, Zambia is far behind other countries in the Southern Region and in Africa as a whole in this area of great importance. And since this project will be a pioneer one in Zambia, we suggest that the University of Zambia authorities should handle this important project cautiously and carefully as other universities, research institutions, government ministries and public organizations will learn from UNZA's experiences. Once an Electronic Theses and Dissertations (ETDs) will be

established at the University of Zambia, we recommend highly that the concept of ETDs and their gospel should not just end at the University of Zambia instead it should be carried on and spread further to other universities, research institutions, government and public institutions in the country.

CHAPTER 2 A SHORT HISTORY OF ZAMBIA, THE UNIVERSITY OF ZAMBIA, DIRECTORATE OF RESEARCH AND GRADUATE STUDIES, THE UNIVERSITY OF ZAMBIA LIBRARY, AND SPECIAL COLLECTIONS

2.1 A Short History of Zambia

In the event that the University of Zambia decides to become a signatory member to the Networked Digital Library of Theses and Dissertations (NDLTD) and have an Electronic Theses and Dissertations (ETDs) implemented at the Special Collections of the University of Zambia Library, we feel it is necessary to give the outsiders a picture of the prevailing environment in the country which we hope will host such an important and valuable ETDs project that will benefit many of its future generations.

The history of Zambia dates back to 1800 when the Territory of Northern Rhodesia was administered by the [British] South Africa Company from 1891 until it was taken over by the United Kingdom in 1923. During the 1920s and 1930s, advances in mining spurred development and immigration. The name of the country (Zambia) comes from the mighty Zambezi River and was changed to Zambia upon independence on the 24th of October, 1964. The major figure in Zambian politics from 1964 to 1991 was Dr Kenneth David Kaunda, who led the campaign for independence and successfully bridged the rivalries among the country's various regions and ethnic groups. [1]

The Republic of Zambia (pronounced/zaembia) is a landlocked country in Southern Africa. It has a population of about 11,862,740 and her neighboring countries are the Democratic Republic of the Congo to the north, Tanzania to the north-east, Malawi to the

east, Mozambique, Zimbabwe, Botswana, and Namibia to the south, and Angola to the west. The capital city is Lusaka which is located in the southeast of the country. The population is concentrated mainly around the capital, Lusaka in the South and the Copper belt to the northwest. [2]

In the 1980s and 1990s declining copper prices (the country's main export earnings) on the world market and a prolonged drought hurt the economy. The elections in 1991 brought an end to One-Party rule and since then the country has had Dr Kenneth David Kaunda (1964 to 1991), Dr Fredrick Titus Jacob Chiluba (1991 to 2001), and the late Dr Patrick Levy Mwanawasa (2001 to 19th August, 2008) as presidents. In October 2008 following the demise of the late President Dr Patrick Levy Mwanawasa, Zambia had a Special Presidential election which was won by the current Republican President Mr. Rupiah Bwezani Banda.[3]

Zambia's population of 11,862,740 people comprises more than 70 Bantu-speaking ethnic groups. Thus we have Nyanja, Bemba, Kaonde, Lozi, Lunda, Luvale and Tonga as the major vernaculars while English is the official language. Most Zambians are subsistence farmers. The predominant religion is a blend of traditional beliefs and Christianity. Christianity is the official national religion. In fact on the 29th of December, 1991, the then President Fredrick Titus Jacob Chiluba declared Zambia a Christian nation. We also have some expatriates, a majority of whom are British (about 15,000) and South Africans. These people live mainly in Lusaka the capital city and Copper belt in the northern part of the country, where they are employed in mines and related activities. Zambia has a small but economically important Asian population, comprised mostly Indians. The HIV/AIDS epidemic is ravaging Zambia. Thus approximately 14.3% of Zambians are infected by HIV. [4]

Population

11,862,740 people

Age Structure

1. 0-14 years: 45.1% (male 2,685,142/female 2,659,771)

2. 15-64 years: 52.6 % (male 3,122,305/female 3,116,846)

3. 65 years and over 2.3% (male 114,477/female 164,199) (According to 2009 estimates)

Natural Mineral Resources

Copper, Cobalt, Zinc, Lead, Coal, Emeralds, Gold, Silver, Uranium

Geographic Location

15 00S 30 00E

Climate

Tropical; modified by altitude; rainy season (October to April)

Economic Overview

In recent years, Zambia's economy has been experiencing strong growth with real GDP growth in 2005-2008 at about 6% per year. In 2005, Zambia qualified for debt relief under the Highly Indebted Poor Countries Initiative (HIPCI) consisting of approximately USD 6 billion in debt relief.

Although poverty continues to be a significant problem in Zambia, its economy strengthened and featured single- digit inflation and during the period our economy has had a relatively stable currency in the Kwacha. In 2009 with the decline in the world economy, the country also experienced a negative growth in its GDP.

United States of America – Zambia Relations

The United States of America and Zambia enjoy warm relations. The USA works closely with the Zambian Government to defeat the HIV/AIDS pandemic that is ravaging

Zambia, to promote economic growth and development, and to forge political reform needed to promote responsive and responsible government.

The USA is also supporting the Zambian Government's efforts to root out corruption. Zambia is a beneficiary of the African Growth and Opportunity Act (AGOA). The United States Government provides a variety of technical assistance and other support that is managed by the Department of State, United States Agency for International Development (USAID), Millennium Challenge Account (MCA), Threshold Program, and Center for Disease Control, Department of Treasury, Department of Defense and Peace Corps. The majority of United States assistance is provided through the President's Emergency Plan for AIDS Relief (PEPFAR), in support of the fight against HIV/AIDS. [5]

In addition to supporting development projects, the United States has provided considerable emergency food aid during the period Zambia was faced with drought and floods through the World Food Program (WFP) and is a major contributor to Refugee Programs in Zambia through the United Nations High Commission for Refugees (UNHCR) and other agencies. [6]

United States Agency for International Development (USAID)

In 2007, USA assistance to Zambia exceeded $259 million. USAID's programs in Zambia included over $116 million for HIV/AIDS programs utilizing PEPFAR funding and $11million to fight corruption and increase trade under the MCA Threshold Program. USAID's program in Zambia supported training and technical assistance to promote economic growth through trade and investment; create health and educational opportunities to improve the lives of Zambians; and reduce the impact of HIV/AIDS through multi- sect oral responses.

Peace Corps

A country agreement inviting the Peace Corps to work in Zambia was signed by the United States and Zambia on the 14th of September 1993. Following that agreement, Peace Corps Volunteers from the United States came and they are currently working in the eight (8) of Zambia's nine (9) provinces in building local capacities among small scale farmers in order for the farmers to manage their own small family fish farms, to promote their food security and support rural education.

Zambia's Diplomatic Representation in the United States of America

Chief of Mission: Ambassador Inonge Mbikusita-Lewanika

Chancery: 2419 Massachusetts Avenue N.W. D.C. 20008

Telephone: [1] (202) 265-9717 through 9719

Fax: [1] (202)332-0826

United States of America's Diplomatic Representation in Zambia

Chief of Mission: Ambassador Donald E. Booth

Embassy: At the corner of Independence and United Nations Avenues, Lusaka.

Mailing Address: P. O. Box 31617 Lusaka,

Telephone: [260] (211) 250-955

Fax: [260] (211) 252-225

2.2 The University of Zambia (UNZA)

The University of Zambia was established in 1965 following the Lockwood Commission's recommendations. It is Zambia's largest Government funded University followed by the Copper belt University in Kitwe's Copper belt province and most recently, Mulungushi University in Kabwe's Central province which opened on the 1st of January 2008. The University of Zambia has a student population of about 6,000 students. Its main campus is located on the Great East Road, about 7 Km from Lusaka. [7]

Apart from offering undergraduate degrees, the University of Zambia offers a number of graduate degrees and postgraduate diploma programs. The University is geared towards further research opportunities and graduate qualifications, in all of its nine schools. Thus PhD programs are available in a wide range of areas while Masters Programs are as follows:

2.3 The Directorate of Research and Graduate Studies (DRGS)

The University of Zambia set up the Directorate of Research and Graduate Studies (DRGS) in order to enhance its image as a premier academic and research institution of international standing. The Directorate's vision is to be a center of excellence in research and graduate studies that will contribute to the dissemination of new knowledge in Zambia. The Directorate, through its Director, co-ordinates, monitors and organizes research and graduate activities of the university. The Directorate strongly believes that research must feed into the university's teaching programs and that only by engaging in research can the design and delivery of its curriculum maintain the necessary high standards and be both up-to-date and relevant to the needs of Zambia's economic, social, and technological development.

The Directorate's role is not only to co-ordinate teaching and research in schools, but it is also involved in availing the knowledge and skills of its academic and research staff through consultancy work and commissioned research.

The Directorate enjoys having a wealth experienced consultants and seasoned scholars and researchers in areas like Engineering, Education, Law, Veterinary Medicine, Mineral Sciences, Agriculture, Medicine, Humanities and Social Sciences, Natural Sciences among others. The unit draws its strength from the fact that virtually all schools have undertaken consultancy work with various sectors of the Zambian economy in order to advance national development. And as such the Directorate has developed the potential to co-ordinate, monitor and organize consultancy and commissioned research activities for the wider community. DRGS is one of the units

which is centrally placed and ideal for carrying out commissioned research and consultancy work of interdisciplinary nature. [8]

As already mentioned above, the unit has its own core of highly trained and experienced professionals in diverse fields led by the Director. These experts have carried out consultancy work in various fields for government and the private sector.

The DRGS is an important unit in this study because once ETDs were established in the University of Zambia there will be need to digitize also the existing 846 Masters Theses and PhD Dissertations that are in the Unit's database.

2.4 The University of Zambia Library (UNZA Library)

Like the University of Zambia, the University of Zambia Library was also established in 1965 following the Lockwood Commission's recommendations that the University should have a well- stocked library to serve as a focal point of the academic courses.

UNZA Library was officially opened in August of 1969 and it has since grown to become Zambia's leading academic library, with multiple locations at the Medical Library within the University Teaching Hospital (UTH) and the Samora Machel Veterinary Library in the School of Veterinary Medicine.

The Main Library which is made up of nine units (Cataloguing and Classification, Collection Development, Serials, Reference, Readers Services, Circulation Control, Short Loan Collection, Special Collections and Bindery) is the largest of the three (Main, Medical and Veterinary library) and heavily used by students, (undergraduates and postgraduates) lecturers, (teaching staff) researchers,

and the general public . Its collection is made up of more than 400,000 items. The services and resources that the library provides are the bedrock on which the university community builds its high standard of learning, teaching and research. [9] The library is the heart of the university. Its mission is to provide readily and efficiently physical and bibliographic access to information consistent with the teaching and research interests of all the university faculties and the learning needs of its students. [10] The above mentioned mission would easily be accomplished once an Electronic Theses and Dissertations (ETDs) was established.

As the hub of academic activities of the University, UNZA Library supports all subject areas taught by the university at both undergraduate and post-graduate levels with the required information resources. In addition, it provides its members with a large number of other services like photocopying, binding, document delivery, and interlibrary loan etc. The library also provides an extensive range of electronic resources through a program called Program for Enhancement of Research Information (PERI).

To shed more light on PERI, is that PERI is an International Network for the Availability of Scientific Publication (INASP) sponsored project through which Zambian Libraries Consortium (ZALICO) institutional members (currently there are eighteen members) put their financial resources together to subscribe to have access to several Online Databases like EBSCO Host, Emerald, ProQuest, JSTOR, etc, and E-journals. Through PERI, UNZA Library receives some hard copy journals from SAGE Publications, Africa Journals Online (AJOL), etc. The University of Zambia

Library has been the co-coordinator of this national project which has been running successfully since its inception in August of 2000. In addition, UNZA Library has also coordinated successfully the allocation of International Standard Book Numbering (ISBN) to many Zambian publications since 1998. And by coincidence this author has been a secretary to both projects.

In fact, UNZA Library has not only handled the above mentioned two projects, there are other international projects it has managed and it is with such kind of inspiration and hope that we feel challenged to have an ETDs. And to that effect we suggest that the University of Zambia follows the same kind of procedures it employed in the PERI project. Thus we are talking about issues like the signing of a Memorandum of Understanding (MoU) and involving all ZALICO members and other libraries.

Furthermore, the University of Zambia Library enjoys the status of a National Reference Library. With that kind of status it allows its facilities to be accessed and used for reference or borrowing by members of the general public on whatever terms and conditions the University Librarian deems necessary.

The Library is a repository for printed official documents of the United Nations and its Agencies and until 1979 it was a selective repository for Canadian government documents. It has acquired an extensive collection of East African government publications as well as Micro-Card editions of British Parliamentary Papers.

In June of 1995, and with the financial support from Finnish International Development Agency (FINNIDA), the University of Zambia Library was

computerized after installing Dynix Library System with the Cataloguing, Acquisitions, Circulations, Serials, Reserved Book Loan (Short Loan Collection), and Online Public Access Catalogue (OPAC) Modules.

In 1996 after the conversion of the Library's Card Catalogue into USMARC, records were loaded into UNZALIBS (University of Zambia Library System) and the Cataloguing and Online Public Access were implemented. Since that time, library users have been able to search for materials over the Local Area Network (LAN) and the system has always been improving. Currently UNZA Library is using SirsiDynix Unicorn Library Management System.

2.5 Special Collections Division

The Special Collections Division is the main research wing of UNZA Library. This is the area designated for the establishment of the ETDs 2010 project. Currently, it has 1349 Masters Theses and 922 PhD Dissertations all of which must be digitized into electronic formats once ETDs are established. And as part of its special collection, the Library holds an extensive collection of Zambiana, which include oral history and archival materials; a growing Africana; Livingstonia materials on former Portuguese territories in Southern and Central Africa; Simon collection on African Law; the publications of major international organizations; and the University Theses and Dissertations, the subject of this presentation.

In addition, the collection includes special categories of books (e.g. government documents, university collections, Zambiana etc). These different

categories are subjected to different methods of treatment, storage and use and may have special rules.

CHAPTER 3 STATEMENT OF THE PROBLEM, SIGNIFICANCE, CONCEPTUAL FRAMEWORK, OBJECTIVE, AND RESEARCH QUESTIONS

3.1 Statement of the Study/Problem

Digitalization of scholarly works at the Special Collections of the University of Zambia Library is the statement of our study. It is about finding out the reasons why there is not Electronic Theses and Dissertations (ETDs) at the University of Zambia. In fact it is disheartening to note that in this 21st century where there is advanced technology, at our university both Masters and PhD candidates were up to the time of research still submitting their theses and dissertations in print format. The University of Zambia can easily establish ETDs through a partnership program with the Networked Digital Library of Theses and Dissertations (NDLTD) who are the pioneers in this world wide project of ETDs. In fact from the available information we learnt that NDLTD's main objective or goal is to assist any university that is interested in ETDs. And in this case we are sure they are going to assist in the establishment of Electronic Theses and Dissertations at the Special Collections of the University of Zambia Library because they have assisted many universities that have ETDs and the University of Zambia will not be an exception.

3.2 Significance of the Study

This study on Electronic Theses and Dissertations which are defined as those theses and dissertations submitted, archived or accessed primarily in electronic formats had initially a sample of 150 respondents. Of that number 111 respondent answered the questionnaire and it was that number we analyzed using SPSS. The respondents included Vice Chancellors, Registrars, Deans, Directors, University Librarians, teaching/academic members of the universities, researchers, senior librarians, and other senior managers concerned with policy matters.

All the above mentioned categories of employees were sampled so that we could get much information and knowledge they had on Electronic Theses and Dissertations and the Networked Digital of Library Theses and Dissertations. And to some of the respondents, apart from answering the questionnaires the researcher had personal interviews with them. That was another way through which other vital information was obtained.

Our study focused on the University of Zambia simply because that is where we shall first establish the UNZA Library-NDLTD 2010 ETDs Project. However, the same questionnaire and interviews were used to get similar information from other university libraries of the Copper belt, Mulungushi, Copperstone, Kalulushi Catholic, Lusaka, Zambia Open, Cavedish. In addition, we also obtained information from the National Council for Scientific Research, Mount Makulu Agriculture Research center, British Council library, American center, Zambian Bureau of Standard library, in short all Zambian Libraries Consortium(ZALICO) institutional member libraries.

The above sampling was done purposely. That was because of comparative reasons but mostly important was that at the end of it all we hope to establish ETDs in all of our universities, research centers, public and government ministries. It is worthwhile to mention here that during research and when we visited all the above mentioned places they were excited with the idea of ETDs and they expressed readiness and they were also willing to have ETDs established at their own university or organization. This fact is demonstrated in Tables 9 and 13 of this research study.

This study had one objective which was to find out why in Zambia there is not ETDs yet there were ETDs in Botswana, Malawi, Mozambique, Namibia, Rwanda, Zimbabwe, South Africa, Lesotho, and Swaziland. While the above mentioned are countries in Southern Africa and some are Zambia's neighbors, there are also ETDs in Algeria, Egypt, Sudan, and Ethiopia in North Africa.

The idea to carry out this study on ETDs in Zambia came to the mind of the researcher in two folds. The first was of course to fulfill academic requirements and the second was as a result knowledge by the researcher that the University of Zambia Library has been trying to digitalize its research information resources which included theses and dissertations for a long time without success.

The reason for failure to have ETDs established at the University of Zambia could have been lack of many resources which included funding. As at now the story is different because the University of Zambia Library has got all the required equipment and infrastructure. It is now possible to have ETDs established and of course to implement this project. The project shall be implemented in partnership with the

NDLTD. The NDLTD are not only the pioneers in ETDs but also they are an organization that has assisted many other universities to establish ETDs. The reason why NDLTD is helping out like that is because it is enshrined in its policy working document that they should assist any interested university so that in the end there shall be ETDs at every university and college in the world.

The significance of the study therefore lies in the fact that its research findings and results would immediately be used by the University of Zambia management, UNZA Library management and other stakeholders as a reference document that should used as the basis on which to establish Electronic Theses and Dissertations (ETDs) in the Special Collections of the University of Zambia Library.

Secondly, and of course after the establishment of ETDs at the University of Zambia, the same kind of method of approaching the NDLTD would be used so that we also establish ETDs at all the universities and research institutions that have already been mentioned above.

In summary all we are saying is that the concept and gospel of ETDs would spread to all the other universities, research institutions and government ministries in Zambia so that at the end it will be easy to access electronically all research work in Zambia by anyone, anytime, and anywhere so long as one is connected through the Internet.

Finally since our study is the first one in Zambia on ETDs, it will contribute greatly to enrich that body of knowledge and information on Electronic Theses Dissertations. The implementation experiences that would be gained at the University of Zambia together with these research findings will be of great help to any institution

that would be interested in establishing ETDs. While we recommend that more studies on ETDs in Zambia should be carried out for a deeper understanding, our study would be of great help since it has some of the issues that ought to be considered when establishing Electronic Theses and Dissertations or an Institutional Repository (IR) in a university, research institution or indeed a government ministry.

3.3 Conceptual Framework

The conceptual framework on which the study was conducted was based on the new challenges librarians are experiencing in their work because of the much developed forms of Information and Communication Technologies (ICTs). In the recent past ICTs have had a strong influence on the traditionally library. Thus the said libraries have since changed from being traditional to modern as they have adapted to the new ways of conducting their daily business. In fact digitalization and digital libraries are now topical conference discussion issues in the library and information profession.

3.4 The Objective of the Study

The objective of our study was to find out why there was not any kind of an Electronic Theses and Dissertations (ETDs) in Zambia.

3.5 Research Questions

In order for us to achieve our study objective, research questions were framed in such a manner that they helped us to collect and generate information and knowledge dealing with Electronic Theses and Dissertations (ETDs), the Networked

Digital Library of Theses and Dissertations (NDLTD), digitalization, digital libraries and Information Communication Technologies (ICTs)

CHAPTER 4 LITERATURE REVIEW

4.1 The Impact of Information and Communication Technologies (ICTs) on the Provision of Library Services in the 21st Century

Information and Communication Technologies (ICTs) are technologies which facilitate communication, processing, and transmission of information by electronic means. ICTs embody a full range of old and new technologies such as radio, television, computers and Internet, telephones- both fixed and mobile, fax, printers, scanners and the print media. [11] In Africa, Zambia in particular, ICTs have been influential in enabling its citizens to participate in many social, economic and political activities. ICTs have an enormous potential for reaching out to the rural populations to provide them with education and training, job opportunities, access to markets, information important for their economic activities and participation in political processes.

Needless to say, it is clear to everyone that the emergence and advancement of ICTs in our societies has brought a lot of changes in our daily lives. These changes are still going on and have passed through many transformational stages of development, the most radical stage being this one we are now living in which started at the end of

the 20th Century. This stage has brought a never-ending revolution in terms of high technology. [12]

During this period, there have been unprecedented developments that have profoundly affected the old social structure as compared to the new prospering information-rich services sector. Through these technologies and other developments our world has changed to what is now known as the "global world". This global world with its global world information society concept is evolving at tremendous speed and it is this force which is driving new products and services to great heights. [13]

Moreover, this dynamic process promises a new fundamental change in all aspects of our lives which includes information dissemination, social interaction, economic and business practices, political engagement, media, education, health, leisure and entertainment. [14] In other words, what we are saying is that there is not any activity that one could perform without having to interact with these technologies. This means that everyone and every country have no other way apart from embracing these new technologies.

In Africa, there have been many such efforts to embrace the issues of Information and Communication Technologies. One notable action was through the African Information Society Initiative (AISI) which is an action framework that has been the basis for ICTs activities in Africa since 1996. The latest development in that regard was through a conference entitled "2009 Technology In Government in Africa" (TIGA) whose aim is to recognize the work of African governments in the effective

use of ICTs for public services delivery as part of the Economic Commission for Africa's AISI and Canada's ICTs Development Program. [15]

The reason why we are mentioning all of the above is to put ourselves in perspectives and bring forth the fact that we are now living in electronic age where every facet of our daily lives all and professions have been affected and are directed by Information and Communication Technologies. In fact in the 21st century, the Electronic/Information Age is in higher gear than ever before. It has taken the role of a prime mover of society and it leads in all sectors of human endeavor.

These changes have posed new challenges for librarians and for their working environment, the library or documentation/information center. Today's librarians and other information handling professionals have to make use of electronic services and web-based information resources simply as a part of their everyday work. It is worthwhile to mention here that it is not easy for librarians to avoid use of ICTs.

In addition, modern librarians are different in both skill and scope from the traditional ones since they work in a changed and different environment. In this Electronic Age their work involves making use of ICTs to fulfill their users' information need and demand.

Another enormous challenge faced by librarians is that of how to adapt to the new trends of technology which are constantly changing in structure and output efficiency. As already mentioned above there is no way in which the use of technology can be avoided. And that being the case librarians are left without any option other than to adapt to the evolving challenges. Thus they have to adapt to new

technologies and learn how to use them so that in turn they are able to offer the new services to their users who in most cases would have already acquired that new knowledge and skill.

On the other front, librarians have to learn and incorporate new management skills of the modern libraries (libraries that emerged as a result of advancement in ICTs). In the new era, libraries have to be managed in a democratic way by ushering into them more flexible communication systems and management styles that would ensure that the services offered would be based on the quality of the newly acquired information resources and attention paid to developing a user-orientation. [16]

The traditional library concept has always been known to be that of a memory institution. They have now shifted its focus from a book-oriented service to that of user-oriented service. And in recent years, modern libraries are no longer only passive repository for books and other printed materials. In their collections they have included other media of information resources such as microform, audio tapes, CDs, DVDs etc. Modern libraries also provide public facilities to access CD-ROM subscriptions to databases and the internet. These libraries are increasingly being redefined as places where a user would get unrestricted access to information in many formats and from many sources at anytime of the day or night.

On the other hand, modern library users do not only read or carry out academic work in libraries; they are also able to exchange instantly information with other users both inside and outside their own countries. And with the power of these ICTs, libraries offer services of Electronic/E-mail, teleshopping, travel (see nice and

beautiful places of the world by visiting websites of famous museums, galleries), tele-teaching, tele-learning, conference talks, business applications, online bank services, direct electronic data transfer, international connections, etc., the list of services offered is endless. In fact modern libraries are now understood to be extending their boundaries beyond the physical walls of a library building as their collections have included materials accessible by electronic means.

4.2 The Historical Development of the Networked Digital Library of Theses and Dissertations (NDLTD) and Electronic Theses and Dissertations (ETDs)

When one is asked to present the history of the Networked Digital Library of Theses and Dissertations (NDLTD) s/he would have to make mention of the Electronic Theses and Dissertations (ETDs). The NDLTD and ETDs are inseparable. This was confirmed when we were doing literature review. In fact what we found out was that at the time when the concept of Electronic Theses and Dissertations was being conceived in the late 1980s, the Networked Digital Library of Theses and Dissertations was also being established with an aim to monitor the development and activities of Electronic Theses and Dissertations. From the above mentioned you notice that the two complement each other.

Historically, the concept of Electronic Theses and Dissertations (ETDs) was first openly discussed at a 1987 meeting convened by Nick Altair of UMI in Ann Arbor, Michigan. That first meeting involved participants from Virginia Tech, Arbor Text, Soft Quad, and the University of Michigan. At that meeting the discussion

focused on the latest approaches to electronic publishing and the idea of applying the Standard Generalized Markup Language (SGML), an International Organization for Standardization (ISO) standard language which was approved in 1985 to help with the preparation of dissertations, possibly as an extension of the Electronic Manuscript Project which was started earlier than 1985. [17]

In 1988, Yuri Rubinsky of Soft Quad was funded by Virginia Tech to help develop the first Document Type Definition (DTD) to specify the structure of ETDs using SGML. Pilot studies continued using Soft Quad's and Author Editor Tool but only with the appearance of Adobe's Acrobat software and Portable Document Format (PDF) in the early 1990s did it became clear that students could easily prepare their own ETDs. [18]

In 1992 Virginia Tech organized a meeting with the Coalition for Networked Information, the Council of Graduate Schools, and UMI, and invited ten other universities. That meeting was held in Washington, D.C. and it was at that meeting where participants demonstrated a strong interest in the feasibility of ETDs activities firstly among United States and Canadian universities. [19]

In 1993, the Southern Universities Research Association (SURA) and Southeastern Library Network (SOLINET) decided to include ETDs efforts in regional electronic library plans. Virginia Tech hosted another meeting which involved multiple universities in Blacksburg, VA in 1994 to develop specific plans regarding ETDs projects. One notable development at that meeting was that on the technical side, a decision was made that whenever feasible, students from the

participating universities should prepare ETDs by using appropriate multimedia standards in addition to both a descriptive (e.g. SGML) and rendered (e.g. PDF) form for their main work. [20]

Further developments regarding ETDs were seen in 1996 when the pace of ETDs activities sped up. Thus in the same year SURA funded a project led by Virginia Tech to spread the concept of ETDs around the universities in the Southeastern United States. And starting in September 1996, the US Department of Education provided a full scale funding to a three-year effort to also spread the idea of ETDs in general in the United States of America. Later on the pilot project that proceeded at Virginia Tech was the one which led to making it mandatory for all theses and dissertations after 1996 to be submitted only in electronic form. [21]

1996 was a remarkable year in the history and development of ETDs in the sense that it was in that year when international interest in ETDs by students in universities was high and its concept started to spread to countries like Canada, the United Kingdom, Germany, and others.

Then finally and to coordinate all the above mentioned efforts which started in 1988, a free, voluntary federation called Networked Digital Library of Theses and Dissertations (NDLTD) was established and quickly began to expand its mandated works and activities world over. Thus annual meetings began in 1998 with about 20 people gathering in Memphis, TN. Then in 1999 70 people came to Blacksburg, VA while in 2000, the number increased to 225 people who arrived in St. Petersburg, FL for the Third Annual Conference. [22]

From 1996, there has been continued rapid growth and development of ETDs around the world. Since then it has not mattered whether those efforts arose spontaneously or as extensions of existing ones. The main concern was that it became hopeful that all would proceed in cooperative fashion so that every member university could help each other in global collaboration by passing on lessons learned as well as useful tools and information.

The mission of NDLTD was to facilitate progress of ETDs in a supportive rather than prescriptive manner. By 2000, over 100 members had joined NDLTD and that number included over 80 universities in addition to national and regional project efforts; international, national, and regional organizations; and interested companies and associations. There was no cost involved to become a member of NDLTD. The only requirement for joining NDLTD was to have interest in advancing ETDs activities, so that in the end there would be global cooperation in Electronic Theses and Dissertations. [23]

A year later, in 2001, the number of universities involved in NDLTD was well over 100. In addition, scores of universities considered work with ETDs, while another hundred universities became aware of the ETDs concept. Since its establishment, NDLTD activities have redoubled with hope that forthwith there would be ETDs in every country and then in every college and university [24]. As mentioned above, NDLTD aims at helping any university that is interested in acquiring ETDs. NDLTD has experienced constant progress since its formation. It has registered growth in all major facets, including membership (with an increasing international

participation), collection size, access, multimedia use, and worldwide availability. [25] NDLTD has never failed in achieving its goals. Thus ever since its establishment it has continued to render all the necessary implementation assistance to any new member like it will be the case with the University of Zambia.

The future of NDLTD is bright and there are some indications that show that the production and archiving of electronic theses and dissertations is fast becoming an accepted part of the normal operation of universities in the new age. NDLTD is dedicated to supporting ETDs trends with tools, standards, and services that empower individual universities or institutions to set up and maintain their own collections of ETDs. At the same time NDLTD promotes the use of ETDs through institutional websites as well as portal-type websites that aggregate the individual sites and create seamless views of the NDLTD collection. [26] In addition, there are ongoing research and service-provision projects that are addressing issues of how to merge together the currently distributed and somewhat isolated collections hosted at each member institution.

As a way of summarizing on the historical development of the NDLTD, we would say that its activities, mission and objectives inspired us and we felt challenged to carry out this study whereby we would investigate and find out the reasons why there are not any ETDs in Zambia and in particular at the University of Zambia. It is our hope that the findings of the research would stimulate the University of Zambia's policy makers to decide that the University of Zambia starts the process of establishing ETDs project at UNZA Library's Special Collections division. And one

issue that would facilitate the establishment process is that UNZA has to become a signatory member to the NDLTD. After becoming a member, UNZA should commit to everything that it takes for NDLTD to establish Electronic Theses and Dissertations in the Library.

4.3 The Move towards the Establishment of Electronic Theses and Dissertations (ETDs) in a University or Organization.

Electronic Theses and Dissertations or ETDs are defined as those theses and dissertations submitted, archived, and or accessed primarily in electronic formats. That includes traditional word-processed (or typewritten and scanned) documents made available in Print Document Format (PDF) as well as less-traditional hypertext and multimedia formats published electronically on CD-ROM or on the World Wide Web.[27] As an electronic version of one's theses or dissertation, ETDs are documents that explain the research or scholarship of a graduate students or researchers. They are expressed in a form that is simultaneously suitable for machine archives and World Wide Web retrieval.

As we have mentioned above, the most significant move towards the development of ETDs started following the lead by Virginia Tech in 1996 and was then embraced by the NDLTD after it was funded with a grant from the United States Department of Education. NDLTD was the first to digitize theses, dissertations, and technical papers that were published at Virginia Tech in 1996 and since then it has been reported that more and more universities around the world have digitized their

collections and established ETDs at their universities. As observed by Janice R. Walker and Christian R. Weisser in one of their publications, they reported that by 1997 there were many libraries that were in a process of digitizing information in an effort to preserve it and to make it more widely accessible and available. Thus, for example, the Library of Congress's National Digital Library Project planned to digitize more than five million items by 2000, and there were many universities, public, and private libraries worldwide that were at that time working on digitizing their collections as well.

Some of the reasons for implementing ETDs are that the traditional methods of archiving and storing theses and dissertations are inefficient and unwieldy. It has been observed that many theses and dissertations lie moldering in many library basements, with no efficient way for researchers to immediately locate the information that may be contained in them. Also time and costs involved in procuring hard copies of those needed works may often be prohibitive and cumbersome. [28]

Archiving theses and dissertations electronically can help to alleviate some of the above mentioned problems which involve storage. And making full-text versions available either on the Web or as e-mail attachments makes access to ETDs almost immediate. [29] Electronic versions of ETDs on disks, CD-ROM, or other digital electronic media have proved to be cheaper as well. In addition, when universities decides to publish theses and dissertations produced at their own institutions on the World Wide Web, or when individual scholars publish their own works on the Web, this allows free and quicker access to full text ETDs than is the case with print ones.

Even if libraries decided not to offer the text of ETDs free, as long as the theses and dissertations were on the Web, libraries would still be helping scholars in some ways by allowing full-text searching. And that in itself allows researchers to be sure that the documents they ordered or downloaded actually contain the information they seek. [30]

It has been observed among students, scholars and researchers that writing with new technologies has already become more than just plain text writing; many of these people are beginning to take advantage of the flexibility offered by new technology to include multimedia elements such as hypertext links, video and audio, and interactive elements in their electronic publications. In fact many students want the freedom to experiment with these new forms of technologies. Electronic publication of theses and dissertations easily make their access and distribution faster and less expensive to most scholars. NDLTD for example, makes theses and dissertations available free on the Web, and many libraries and universities offer computer access to them through the World Wide Web. ETDs can help to make information more readily available to scholars and researchers by allowing quicker and more thorough search capabilities of author, subject, keyword, department, or year of publication. Such a system allows not only scholars, researchers, students but also other users to home in on specific sections that are of interest to them through search and retrieval of chapters or sections of a theses or dissertation.

Another advantage of ETDs is that they are easily backed up (refreshing, migration) so the risk of losing information is minimal. ETDs stored electronically are

less likely to be damaged than their print counterparts, since they have no physical form to yellow and decay with age. Loaning out a copy ETDs does not include relinquishing the original. [31] Advances in technology have made possible increases in electronic storage capacity (such as advances in file compression technology and the availability of larger hard drives) at substantially lower costs. The storage potential of libraries can increase exponentially. Recently IBM donated a server with four (4) terabytes of hierarchical storage (or 40,000 gigabytes0 to the Virginia Tech pilot project on ETDs and that server is enough to store about 40 million average-sized ETDs. [32] In other words that one server can accommodate all existing theses and dissertations worldwide in just a fraction of its memory capacity.

To address potential conflicts over copyright, universities with ETDs use the system established by Virginia Tech where access to ETDs is delayed temporarily before publication to allow a certain article or book to be the only source of the author's material. That holding back electronic publication of ETDs allows the paper publication to come out first.

Secondly, access to ETDs from outside the author's university can be blocked, ensuring gain of economic incentives required by many publishers. [33] Although these solutions are not entirely foolproof, they nonetheless do offer protection for both authors and publishers in addressing concerns with risks of electronic access to ETDs. In our study we do not encourage scholars to include graphics and other copyrighted materials in their theses and dissertations without acquiring permission because it is an offence. We instead encourage authors to ensure their full compliance with

copyright law and fair-use guidelines as agreed to by the World Intellectual Property Organization (WIPO) through the Berne Convention.

4.4 The Current Prevailing Situation of Electronic Theses and Dissertations (ETDs) in the Universities of the Peoples' Republic of China

The situation regarding ETDs in the Peoples Republic of China is traced back to 1978 following the reforms and openness. The first move to established ETDs in China, was when the Degree Office of the State Council issued some rules that both the STM theses and dissertations from the Institute of Scientific & Technical Information of China and those from Social Sciences from the Chinese Academy of Social Sciences be taken to the National Library [34] to support and build up an Electronic Theses and Dissertations Collection there.

Secondly was in 1981 when the National Library of China was recognized as the only legal institution in China with permission to collect and preserve all print dissertations and parts of print theses. While the above mentioned was taking place other developments with regards to ETDs were happening. The most notable and significant one among them was that which happened in 2000 when Tsinghua University was declared the first university to establish the ETDs Submission System. After that declaration, all doctoral and theses candidates in China were by mandate required to submit their own ETDs to Tsinghua University Library. Since then the Tsinghua University library has collected and archived more than 10,000 ETDs. [35]

Later on the development of ETDs in China sped up especially from the 2001 onwards after the establishment of the China Academic Library & Information

System (CALIS), this is an academic body that guided other major Chinese universities to start establishing their own ETDs at their own premises. In fact we could say that from the years 2000 and beyond ETDs in China were fully developed with Tsinghua University being assigned with the responsibility to coordinate and supervise the CALIS-ETD project which initially started with fifty (50) members and of course the number increased as up to present.

For the sake of a better understanding of the development of ETDs in China, it might be helpful to speak a bit about the China Academic Library & Information System-Electronic Theses and Dissertations (CALIS-ETDs) project. The CALIS-Electronic Theses and Dissertations Digital Library project is a distributed heterogeneous digital library system project which is funded by CALIS with a goal to share ETDs resources among the universities in China and speed up the spreading of ETDs knowledge. It is a prototype system based on the advanced digital library technology with open standards. [36] It has three main objectives and these are:

1. To establish a China Electronic Theses and Dissertations Digital Library System that would centralize a metadata repository and distribute digital objects, share ETDs resources among the universities and provide a wide ETDs access,

2. Assist the member universities in establishing the submission and retrieval system that has an OAI and METS compatibility,

3. To harvest ETDs Metadata and Pre-16 Pages PDF Files with the OAI and METS technology, and then to establish and to centrally manage and preserve the Pre-16 Pages PDF Files.

As a national coordinating university it was expected that Tsinghua University would finish the assignment by the end of 2006, by which time Tsinghua University Library would have more than 200, 000 metadata records in the Central CALIS-ETDs Collection.

The Digital Rights Management (DRM) was to be used for copyright control of the Electronic Theses and Dissertations. Thus all issues of unauthorized copying, printing, editing and distribution etc were all taken care of by DRM. It is worthwhile to mention here that while all this development was happening Tsinghua University had already established a strong working relationship with the ETDs pioneer institution the Networked Digital Library of Theses and Dissertations (NDLTD). And through that well established relationship, Tsinghua was already getting and enjoying a lot of warm technical, organization and administration support from NDLTD. In fact the working relationship was very cordial that Tsinghua University Library started to thinking of joining NDLTD as a member and we feel that it did so because the name of the project was later called CALIS-ETDs Digital Library. From that relationship, CALIS-DL project has gained a lot of experience from NDLTD.

There are many reasons why China developed ETDs. Some of the reasons as given by Yu Zhenglu and Pan Yuntao are that ETDs, unlike their counterpart the print theses and dissertations are conducive to better collection and preservation. ETDs promote the sharing and spreading of knowledge and technology. ETDs are cost effective and time serving. ETDs have strong index functions. [37] Thus through ETDs we are able to locate more valuable information. Actually theses and

dissertations have a lot of bibliographical advantages, for example, to a certain extent, with ETDs one can find who is doing what in which field, how good is his/her research and what other project/s s/he done. ETDs enable us to know who is an expert in which subjects or fields. With ETDs one can easily tell how many students a certain professor has supervised. In summary, there are a lot of bibliometrics manipulations that one can perform with ETDs which you cannot do with print theses and dissertations. These factual issues tend to put ETDs at an advantage against print ones. And as a result you find that one tends to favor ETDs especially in this age.

The developments of ETDs in the Peoples' Republic of China happened quickly and may be in line with other developments of the country. However, there are currently four (4) popular databases that are used in China to enhance ETDs usage which are:

1. CDDB (Chinese Dissertations Database)

The CDDB database is used at the Institute of Scientific & Technical Information of China (ISTIC) ISTIC is China's legal deposit unit for theses and dissertations and it began to collect STM theses and dissertations as far back as in 1980.

Historically, with CDDB was a born in 1984 as a kind of an Index of Journals administered by ISTIC. Years later on Wangfang Ltd took over its operations and transformed it into a compact disc. After the transformation, the name was changed to what we today know as Chinese Dissertations Database (CDDB) and that was in 1995.

Based on the available literature, Wangfang Ltd has made good and rapid progress in digitalization of ETDs. Thus up to May 2006, CDDB ETDs had reached 710,000 records in the CDDB database.

As a retrieval platform Wangfang provides certain unique services to clients. In the case of theses and dissertations retrieval, there are some hotlinks on the terms of author, professor, subject classification and keywords. For example, in the hotlink of author, Wangfang has a provision whereby one can find the author's theses and dissertations, journal articles, conference proceedings, reports and some other information about the author. And for full text browser software, Wangfang has adopted Adobe Acrobat.

2. Chinese Selected Doctoral Dissertations and Master's Theses Full-Text Databases (CDMD)

The CDMD database was developed by China National Knowledge Infrastructure Electronic Journal Society and TTOD Ltd. CDMD has archived theses and dissertations from 1999 to the present and the records of CDMD had reached 270,000 as of the 31st of December, 2005. CDMD has two sets of retrieval navigations. Thus there are Knowledge Classification and Subject navigations.

CDMD also provides three retrieval methods: basic, advanced and special retrieval. For the Full-Text browser software CDMD uses Cajviewer. CDMD is designed with everyday updates from its Database Change Service Center. Thus with it in place, is that every computer mirror stand can be updated every time with each connected to internet or satellite transmission. And its Subject compact discs are updated yearly. Although we shall address Northeast Normal University's (NENU) ETDs position later, CDMD and Cajviewer are the ones being used at NENU Library.

3. CALIS China Academic Library & Information System theses and dissertations database. This database is supported and funded by the China Academic Library & Information System (CALIS). And its theses and dissertations database has grown to more than 70,000 and has a membership of 83 universities. CALIS collects metadata through Open Archives Initiative (OAI) for metadata harvesting and makes contact between metadata and local Full-Text by the URL open technology. Tsinghua University controls this database.

4. PQDD (ProQuest Digital Dissertations)

PQDD is published by an American company ProQuest Information and Learning (previously named UMI). By 2000, its dissertation abstracts database archives contained collectively over 1.6 million both dissertations and master's theses. PQDD theses and dissertations come from more than 1,000 universities all over the world. It has the earliest archiving period, having begun in 1861. In 2002 some Chinese universities and institutions had combined into a consortium and put together their financial resources in order to afford ordering ETDs from PQDD. CALIS is responsible for organization while China National Sci Tech Information I/E Corp are the sole agency. [38]

In the Peoples' Republic of China another important event that took place in the development of ETDs was as a result of Project 211. Project 211 is a project involving 106 Chinese universities (as of 2007). The name of 211 are from the abbreviation of 21st century and approximate 100 universities respectively.[39] In China there are more than 1,700 standard universities of higher education, and out of

those about 6% of them are 211 Project institutions. Project 211 operates through what is known as Project Schools which take on the responsibility of training 4/5 of PhD students, 2/3 of Masters graduate students, half of students go to study abroad and 1/3 are undergraduates.

Project 211 aims at cultivating high-level elite Chinese for national, economic and social strategies. Project 211 began from the idea that in the mid 1990s, the 30 elite universities at the time were too low by international research standards. In an attempt to address the problems of low standards in the universities, Project 211 was started. The main criteria for inclusion in Project 211 is that universities in China have to meet certain scientific, technical and human resource standards and to offer set standards for advance degree programs.

With Project 211goals and mission, the Chinese government through the Ministry of Education, envisaged that after several years' efforts the selected 100 institutions of higher learning and a group of key disciplinary areas will have greatly improved their quality of education, scientific research, management and institutional efficiency. In addition, those institutions will also have made remarkable progress in reforming the management system and consequently become the bases for training high-level professional manpower and solving major problems for the country's economic construction and social development. As a result of such efforts, the group of institutions in Project 211 will set up national standards in overall quality, with some of the key universities and disciplinary areas approaching or reaching the advanced international standards. It is hoped that the majority of the institutions will

have enhanced their physical conditions and staff competence in addition to noticeable achievements in human resources training and scientific research. And Project 211 institutions are expected to play a key and exemplary role in adapting to regional and sectional development needs. [40]

For Project 211 to accomplish its goals, universities in the project uses most of the above mentioned ETDs databases. Through a co-ordinated network all ETDs information is shared among Chinese universities.

In September, 1995, Northeast Normal University (NENU) our own university passed the preliminary procedure of Project 211 and joined the first key universities project. Subsequently, there have been a lot of developments that have taken place at NENU in accordance with the goals of Project 211. NENU Library as one of the beneficiaries of the project started with the improvement of automation and entered a new stage of comprehensive development. The library administration embarked on the improvement of the Local Area Network (LAN) and bought computer equipment in general. The exercise was successful. The library has now 1735 sockets, connecting to more than 900 computers for readers. The library's LAN is connected to the campus network by optical fiber. In terms of Electronic Theses and Dissertations (ETDs) both Chinese and foreign data resources have increased. Currently NENU library owns more 74 Databases and of these 17 are featured databases. Apart from ETDs, NENU library has more than 900,000 E-books covering most of the academic fields in the university. ALEPH500 System (Israel) is used in circulation services. And through TRS Platform it has been possible to consolidate E-books, E-journals

and the E-databases into an all-in-one retrieval system. This facilitates fast access and searches of information. [41]

As mentioned above, for searches NENU uses the Beijing TRS Information Technology limited, or TRS for short. TRS software was established in 1993, and originally named EPROBITI Information Technology Limited. TRS is the initiator and the most aggressive developer of Chinese Full-Text Retrieval Technology. It is widely recognized that TRS has proprietary worldwide; it is on the leading edge in technologies and software products and in the fields of information retrieval, content management, and text mining. TRS has branches in Shanghai, Guangzhou, Chengdu, Nanjing and Hangzhou to offer local technical consulting and supporting services for customers. It has over 2,000 famous enterprise level customers in the great China region, covering government, news and media, public institutions, value added information service institutions, education and science research institutions, telecommunications, business, and many more sectors.

4.5 Electronic Thesis and Dissertations (ETDs) in the Republic of Zambia

Historically, Zambia first became connected to the Internet in 1994 through a slow leased line to South Africa with just about 250 users, many of whom were academicians and medical staff. The number of internet users in Zambia was estimated at 50,000 in December, 2004 [42] There are three (3) Internet Service Providers in Zambia which are Zamnet (the first to run internet in the country and run by the University of Zambia), Copper Net, (run by Zambia Consolidated Copper Mines [ZCCM]) and Africa Online (a recent addition to the Zambian ISP market). [43]

As mentioned above in Chapter Three (3), the prevailing ETDs situation in the country is not encouraging because it will just be starting later in 2010 through this project. Despite the unimpressive picture, it is worthwhile to mention here that during data collection there was an experimental ETDs research that had just been carried out at the University of Zambia, in the School of Natural Sciences and in the department of Computer Studies by Mr. Mayumbo Nyirenda. Mr. Nyirenda is a lecturer in that department. In that study Mr. Nyirenda experimented with his then graduating computer studies students as to whether it was possible for those students to submit their graduating theses in electronic format. The study was successful as all those students submitted their theses in electronic format. After that successful study Mr. Nyirenda started to work on another ETDs project with the Ministry of Health in Lusaka.

The above results were encouraging and gave a boost to this study. When Mr. Nyirenda was approached to be a member and part of the implementation team of the 2010 NDLTD-UNZA Library ETDs Project, he agreed.

Other Zambian ETDs that are on record include Zulu, Dackson Nkonje, etd 0927008-042111, Master of Science. "Genetic Characterization of Zambian Native Cattle Breeds", Mweemba, Prudencia, PhD. "Quality of Life among Rural and Urban Zambian Men and Women with HIV/AIDS." Riutta, Satu "Empowering the Poor? Civic Education and Local Level Participation in Rural Tanzania and Zambia" and then we have Chimfwembe, Richard, "The Roman Catholic Church and the United Church of Zambia Challenged by HIV and AIDS, which results in Creating Poverty

among Zambian people." The last but not the least is this author's paper presented online to the 12th NDLTD ETD 2009 Annual Conference, 10th to 13th June, 2009 at the Pittsburgh University, Pennsylvania, United States of America. [44]

In summary the above mentioned is the prevailing ETDs situation in Zambia. It is our hope that this study will provide the required information and knowledge for the establishment of an Electronic Theses and Dissertations project or even an Institutional Repository (IR) at the University of Zambia Library's Special Collections Division, Lusaka, Zambia.

4.6 Why the University of Zambia should move towards Electronic Theses and Dissertations (ETDs)

As mentioned above in Chapters 3 and 4, there are many reasons for the University of Zambia to move towards ETDs. To begin with, we notice that as compared to print theses and dissertations, ETDs provide supreme quality of information and variety of resources to users, especially researchers. When it comes to the issue of archival storage, ETDs do have the capacity of establishing centralized metadata thereby ensuring multiple referencing, quality preservation, and wider global participation. [45] In fact, many universities help a lot of their students and scholars by making available to other scholars digitized or electronic versions of the produced graduate thesis and dissertations that are produced.

ETDs also reduce the time and costs involved in procuring copies of theses and dissertations needed by researchers. In addition, to archive ETDs electronically can help to alleviate some of those problems associated with storage. And making

full-text versions available either on the Web or as E-mail attachments makes access almost immediate. Electronic versions of ETDs on disks, CD-ROM, or other digital electronic media are cheaper as well. In fact, ETDs are very easy to publish by universities or individual scholars on the World Wide Web and once they are published on the web it becomes easy for anyone to access them as full-texts. [46]

With the rapid development of the information industry, ETDs have become a common trend of the theses and dissertations. Thus ETDs building projects are now appearing everywhere and indeed at every university. ETDs are conducive to better collection and preservation. ETDs promote the sharing and spread of knowledge and technology. ETDs save the cost from the long term point of view. ETDs accelerate scientific research levels and improve communication among researchers. And for ETDs researchers save time and money in finding related information. Thus, for a single retrieval, they can get more information about different authors. That information is comprehensive and continuous; it also motivates researchers and avoids duplication of work. [47]

In summary, the importance of ETDs and of course the NDLTD has been widely realized by a lot of universities world over in recent years. This study will introduce the idea of ETDs in Zambia and then a ETDs project would be established in the Special Collections of the University of Zambia Library. Once a ETDs project is established, UNZA Library will enjoy a lot of benefits resulting from that action. Moreover, UNZA Library will be among those universities that would extend the value and use of digital libraries and make a contribution to the advances in ICTs. [48]

CHAPTER 5 STUDY DESIGN AND METHODOLOGY

5.1 Study Design

The study was conducted in some libraries of Lusaka, Kabwe, Kitwe, and Kalulushi. And by use of a self administered questionnaire and sometimes personal interviews with some of the respondents, information on Electronic Theses and Dissertations (ETDs) and the Networked Digital Library of Theses (NDLTD) was collected.

5.2 Study Methodology

The study utilized multiple data collection methods in order to obtain both qualitative and quantitative data. Thus the following data collection methods were used:

5.2.1. Secondary Data:

The study reviewed literature and documentation on Electronic Theses and Dissertations (ETDs), the Networked Digital Library of Theses and Dissertations (NDLTD), digitalization, digital or virtual libraries, Information and Communication Technologies (ICTs), Information Society, digital resources, bibliometrics and many others.

5.2.2 Questionnaire and Interviews:

As mentioned above that both a self administered questionnaire and at times interviews were used to obtain data from respondents. The respondents included representatives from all the universities' administrations, deans of some faculties,

lecturers (teaching staff), and researchers, staff from the Directorate of Research and Graduate Studies, Library Department, Computer Studies Department, Computer Centre, some librarians from Zambian Libraries Consortium (ZALICO). Information was also collected from libraries like the British Council, American Center, the National Council for Scientific Research, Mount Makulu Agriculture Center and university libraries of Copper belt, Mulungushi, Copperstone, Kalulushi Catholic, Lusaka, Cavedish and Zambia Open.

CHAPTER 6 DATA ANALYSIS AND INTERPRETATION

6.1 Findings and Interpretation

After data was collected, we used Statistical Package for Social Science (SPSS) to analyze and interpret our collected data. SPSS gave us frequency tables, histograms, and bar and pie charts. Out of all the statistics we chose frequency tables to interpret our findings because of their simplicity and clarity.

6.1.2 A Summary of Frequency Tables

1. **Tables 1 to 4** are about the characteristics of the respondents

2. **Tables 5 to 8** are about knowledge about the Networked Digital Library of Theses and Dissertations (NDLTD), Electronic Theses and Dissertations (ETDs) and Information and Communication Technologies (ICTs) policy related matters

3. **Tables 9 to 13** are about supporting the idea and the establishment of Electronic Theses and Dissertations (ETDs) and respondents' preparedness and willingness to

actively participate in the Electronic Theses and Dissertations (ETDs) project at their university or organization

4. **Tables 14 to 25** are about benefits that would apply to the hosting university or organization and to Zambia as a country.

Tables1 – 4 Characteristics of respondents

SEX

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	35	31.5	31.5	31.5
	Male	76	68.5	68.5	100.0
	Total	111	100.0	100.0	

From **Table 1.**In the research we had 76 (68.5%) male respondents and they were 35 female respondents whose representation was 31.5% of the total sample. The research was gender sensitive though not balanced.

Table 2 Designation of respondents

POSITION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Registrar	10	9.0	9.0	9.0
	V Chancellor	1	.9	.9	9.9
	Librarian	50	45.0	45.0	55.0
	Lecturer	33	29.7	29.7	84.7
	Researcher	3	2.7	2.7	87.4
	Asst.Librarian	11	9.9	9.9	97.3
	G.Student	3	2.7	2.7	100.0
	Total	111	100.0	100.0	

Table 3 Province of respondents

PROVINCE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Lusaka	88	79.3	79.3	79.3
	Cop/belt	20	18.0	18.0	97.3
	Central	3	2.7	2.7	100.0
	Total	111	100.0	100.0	

Table 4 City of respondents

CITY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Lusaka	88	79.3	79.3	79.3
	Kabwe	3	2.7	2.7	82.0
	Kitwe	18	16.2	16.2	98.2
	Kalulushi	2	1.8	1.8	100.0
	Total	111	100.0	100.0	

Table 5 On knowledge about the Networked Digital Library of Theses and Dissertations (NDLTD)

KNOWLEDGE ABOUT NDLTD

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	38	34.2	34.2	34.2
	No	73	65.8	65.8	100.0
	Total	111	100.0	100.0	

Table 5 On knowledge about the Networked Digital Library of Theses and Dissertations we had 38 (34.2%) "Yes". The response meant that there was little or scant knowledge about the National Digital Library of Theses and Dissertations (NDLTD). That could have been among the reasons that contributed to not having of an Electronic Theses and Dissertations at the University of Zambia. In that regard, therefore, it meant that there was great need to spread and market the activities of NDLTD in the universities in the country and in research and public institutions which were likely to become members of NDLTD.

Table 6 On knowledge about Electronic Theses and Dissertations (ETDs)

KNOWLEDGE ABOUT ETDS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	57	51.4	51.4	51.4
	No	54	48.6	48.6	100.0
	Total	111	100.0	100.0	

Table 6 The **yes** response on knowledge about Electronic Theses and Dissertations, more than half the sample, indicated 57 (51.4%) knew about ETDs. The

reason was that the majority of the respondents were lecturers (teaching staff and researchers) who obtained their advanced training from universities outside Zambia where ETDs were available. As was mentioned in our introduction, Zambia was the only country in Southern Africa that did not have an ETD of any kind. Since 51.4% of the respondents knew about ETDs, the authorities at UNZA could have done better to provide the services of ETDs to its staff and students.

Table 7 On whether an Electronic Theses and Dissertations existed at the respondent's university or organization

HAVE ETDS AT UNIVERSITY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	2.7	2.7	2.7
	No	107	96.4	96.4	99.1
	Don't know	1	.9	.9	100.0
	Total	111	100.0	100.0	

Table 7 In the table 107 (96.4%) responded that there were no ETDs at the University of Zambia and in the country as a whole. Since we did not have any ETDs at UNZA, we thought that was a justification enough to have one. And the 3 (2.7%) responses that said **yes** came from Computer Studies where a pilot ETDs project supervised by Mr. Mayumbo Nyirenda was going on at the time our research was being conducted. That ETDs project was a success and we learned something from it as it gave us a lot of insights. Mr. Mayumbo, the manager of the project, agreed to be part of the Implementing Team.

Table 8 On whether there was an Information and Communications Technologies (ICTs) policy at the respondent's university or organization

HAVE ICTS POLICY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	68	61.3	61.3	61.3
	No	43	38.7	38.7	100.0
	Total	111	100.0	100.0	

Table 8 There was a country policy on ICTs from which individual institutions drew their own respective policies. And for the University of Zambia at the time of our research, the Directorate of Research and Graduate Studies had passed a ruling through its Senate (the highest policy making body in the university) that all Masters and PhD graduating students in 2009/10 Academic Year **must** submit electronic copies of their theses and dissertations apart from the usual print type.

Table 9 On whether respondents liked to have and supported the introduction of an Electronic Theses and Dissertations (ETDs) at their university or organization

SUPPORT INTRODUCTION OF ETDS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	107	96.4	96.4	96.4
	No	4	3.6	3.6	100.0
	Total	111	100.0	100.0	

Table 9 On whether the respondents would like to have and support the introduction of an Electronic Theses and Dissertations (ETDs) we had 107 (96.4%) **yes**. That overwhelming response meant that the majority of the respondents knew about ETDs and were ready for and looked forward to its establishment at the University of Zambia as well as at other universities and research institutions in Zambia.

Tables10 - 12 Type and how much support respondents would render once an Electronic Theses and Dissertations (ETDs) was established in their university or institution.

FINANCIAL SUPPORT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	4	3.6	3.6	3.6
	No	107	96.4	96.4	100.0
	Total	111	100.0	100.0	

Table10. On financial support, we wanted to know whether the respondents would to able to afford it when requested to assist financially. The results were clear enough that the majority of the respondents would not lend support. Since financial support was crucial, that was one of the reasons we included Zambian Libraries Consortium (ZALICO) institutional members so that when financial matters arose they would be handled in a manner similar to the way Programme for the Enhancement of Research Information (PERI) subscription fees are handled.

Table11 On technical support

TECHNICAL SUPPORT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	54	48.6	48.6	48.6
	No	57	51.4	51.4	100.0
	Total	111	100.0	100.0	

Table11 On technical support the response was 54 (48.6%). We got that kind of response because some institutions where our research was conducted did not have the needed equipment, infrastructure and internet connectivity. The "Yes" response was from all the universities in the country.

Table12 Staff support

STAFF SUPPORT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	59	53.2	53.2	53.2
	No	52	46.8	46.8	100.0
	Total	111	100.0	100.0	

Table12 Concerning staff support we had 59 (53.2%) responses. Like in Table 9, most of the respondents were from the universities since they had computer facilities and were computer literate. They offered their computer skills and were ready to participate in the establishment of a ETDs project in the Special Collections of the University of Zambia Library.

Table13 On willingness to participate in any assigned role once an Electronic Theses and Dissertations (ETDs) project was introduced in the respondent's university or institution

WILLING TO PARTICIPATE IN ETDS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	108	97.3	97.3	97.3
	No	3	2.7	2.7	100.0
	Total	111	100.0	100.0	

Table13. On willingness to participate we had 108 (97.3%). The response was overwhelming and was a direct response to the main objective of our research. The result also meant that the majority of the respondents welcomed the idea of ETDs in all the universities and in research institutions such as the National Council for Scientific Research and Mount Makulu Agriculture Research Center.

The list of benefits on Electronic Theses and Dissertations (ETDs) was designed to solicit general information on ETDs from respondents that had some familiarity with and had used Electronic Theses and Dissertations (ETDs) before. From **Tables 14 to 25** respondents ticked the benefit/s that applied to their situations.

Table14 On the benefit of moving respondents' university or institution into digital era

DIGITAL BENEFITS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	99	89.2	89.2	89.2
	No	12	10.8	10.8	100.0
	Total	111	100.0	100.0	

Table14 On digital benefits we had 99 (89.2%) "Yes" response. Through that benefit it meant that the University of Zambia Library and of course elsewhere in the country where ETDs would be established would make a move towards digital libraries development.

Table 15 Bringing together the personnel and infrastructure required for other digital library projects

INFRASTRUCTURE BENEFITS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	69	62.2	62.2	62.2
	No	42	37.8	37.8	100.0
	Total	111	100.0	100.0	

Table15. Over the benefit of bringing together the personnel and infrastructure required for other digital library projects the response was 99 (89.2%) which meant that a foundation would be laid on which future digitalization projects would be based. In addition, financial and other precious resources would be saved as there would be no need to invest again into the digital infrastructure. The benefit was a direct one to the University of Zambia and the University of Zambia Library.

Table16 On quality of university students' intellectual products being reflected internationally

QUALITY OF STU/UNIV

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	89	80.2	80.2	80.2
	No	22	19.8	19.8	100.0
	Total	111	100.0	100.0	

Table16 On the quality of the University's students' intellectual products being reflected internationally there were 89 (80.2%). The benefit was directed to students as their newly acquired computer skills would be reflected in their research work (theses and dissertations) internationally. That high quality work of students would attract many foreign international students who would want to attain their university education from the University of Zambia because of its high level standing in the world.

Table 17 Students would easily learn from each others' work

STUDENTS LEARN FROM OTHERS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	87	78.4	78.4	78.4
	No	24	21.6	21.6	100.0
	Total	111	100.0	100.0	

Table 17 Over the issue of students learning from each other's work in the world, we had 87 (78.4%). That was a direct benefit to students as they would share and exchange information about their research through e-mails, downloads, chats, tele-conferencing etc.

Table 18 Over results of research and programs being widely known

PROGRAMS ARE WIDELY KNOWN

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	60	54.1	54.1	54.1
	No	51	45.9	45.9	100.0
	Total	111	100.0	100.0	

Table 18 Over results of research and programs being widely known we had 60 (54.1%). The benefit was directed to the Directorate of Research and Graduate Studies as it would make the University of Zambia popular since students there would be known through submitting their theses and dissertations in electronic formats.

Table19 On students easily using bibliographical reviews

BIBLIOGRAPHICAL REVIEWS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	71	64.0	64.0	64.0
	No	40	36.0	36.0	100.0
	Total	111	100.0	100.0	

Table19 On the benefit that students would easily use bibliographical reviews, it would mean that students at the University of Zambia and elsewhere where ETDs would be established in the country would not have difficulties in making cross references in their research. That is of vital significance in all research. Much as was happening at UNZA, there could still be significantly more once an ETD was established.

Table 20 On students easily sharing methodologies with other scholars

SHARE METHODOLOGIES

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	83	74.8	74.8	74.8
	No	28	25.2	25.2	100.0
	Total	111	100.0	100.0	

Table 20 On the benefit that students would share methodologies used in their research we had 83 (74.8%) "Yes". That would be of great benefit to those students who would realize that the research they would have been doing was done before and probably with the same methodology. In that case those students would adopt either the same methodology or a different one. Time wasting would be reduced.

Table 21 On students yielding easier and faster access to information

ACCESS TO INFORMATION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	86	77.5	77.5	77.5
	No	25	22.5	22.5	100.0
	Total	111	100.0	100.0	

Table 21 On students yielding easier and faster information from Electronic Theses and Dissertations (ETDs) we had 86 (77.5%) "Yes". When ETDs were in place students would easily access vast amounts of the needed information anytime and from anywhere.

Table 22 On Electronic Theses and Dissertations holding information that helps to avoid duplication of efforts

AVOID DUPLICATION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	83	74.8	74.8	74.8
	No	28	25.2	25.2	100.0
	Total	111	100.0	100.0	

Table 22 Over Electronic Theses and Dissertations holding information that helps to avoid duplication of efforts we had 83 (74.8%) **yes.** With ETDs in place students would be able to know what was happening in their respective fields. As a result, duplication of research could be easily avoided.

Table 23 On Electronic Theses and Dissertations becoming part of the assets and history of the respondent's university or institution

ETDS ASSETS OF UNZA

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	74	66.7	66.7	66.7
	No	37	33.3	33.3	100.0
	Total	111	100.0	100.0	

Table 23 On Electronic Theses and Dissertations would be part of the assets and history of the respondent's university or institution 74 (66.7%) "Yes". That benefit was directed to the University of Zambia Library. To acquire equipment for Information and Communications Technologies (ICTs) is not that easy, especially in countries like Zambia and other developing countries.

Table 24 On libraries sharing with others digital library information and knowledge

DIGITAL LIBRARIES

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	81	73.0	73.0	73.0
	No	30	27.0	27.0	100.0
	Total	111	100.0	100.0	

Table 24 on the benefit that the University of Zambia Library would share knowledge on digital libraries with others we had 81 (73%) "Yes". In the 21st Century the development of digital libraries was a hot issue in the library and information profession because modern libraries were no longer only having printed information materials in their collections but also materials that were accessed electronically. So by establishing an ETDs project at UNZA it would mean that UNZA Library had taken a step forward in the development of digital libraries.

Table 25 On Electronic Theses and Dissertations requiring less library storage space

COVER STORAGE SPACE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	92	82.9	82.9	82.9
	No	19	17.1	17.1	100.0
	Total	111	100.0	100.0	

Table 25 on Electronic Theses and Dissertations (ETDs) requiring less storage space we had 92 (82.9%) **yes**. That benefit was directed to UNZA Library as it had expanded in recent years and was experiencing space problems for both reading and storage of its information materials

6.2 Conclusion

Our study found out that the University of Zambia Library does not have an Electronic Theses and Dissertations (ETDs) because there was no person to initiate the process and that the institution does not have sufficient information on ETDs

projects and the Networked Digital Library of Theses and Dissertations as an organization, the very organization that could assist in many areas to have an ETDs established in the Special Collections of the University of Zambia Library.

The study also revealed that lecturers had enough knowledge and information about ETDs. Thus 51.4% knew about ETDs, 96.4% said they would support the introduction of ETDs, 53.2% said they would avail themselves as support staff, 61.3% had ICTs Policy in their work organization and 97.3% said they were willing and ready to support and participate in the various roles of ETDs project.

In summary and based on the study findings and interpretations we concluded that yes, an Electronic Theses and Dissertations will be established at the Special Collections of the University of Zambia Main Library with the help and in consultation with the Networked Digital Library of Theses and Dissertations (NDLTD), the pioneers in this world wide ETDs project to which as an organization NDLTD has continued to render all the necessary implementation assistance to any yet all new prospective members. The University of Zambia in this case will not be treated differently it will surely be helped by NDLTD to have a ETDs established in the Special Collections.

6.3 Recommendations

Having achieved our objective of the study, we wish to recommend the following:

1. That the University of Zambia immediately becomes a signatory member to the Networked Digital Library of Theses and Dissertations

2. That the University of Zambia Library starts the process of establishing an Electronic Theses and Dissertations (ETDs) project at the University of Zambia

3. That this study's findings (knowledge and information) on ETDs and digital libraries should be shared with Copper belt, Mulungushi, Kalulushi Catholic, Zambia Open, Lusaka, Cavendish, Copper stone, universities and the country's research institutions like National Council for Scientific Research, Mount Makulu Agriculture Research Center etc

4. The idea and gospel of Electronic Theses and Dissertations (ETDs) in Zambia should spread to Government Ministries of Health, Agriculture, Education, Commerce etc

6.4 Limitations of the Study

Our study had one objective which was to find out why there was not any kind of an Electronic Theses and Dissertations (ETDs) in Zambia. That being the case we had to limit our scope and depth of the study. Thus we had to restrict the collection of information to only that which had some aspects of Electronic Theses and Dissertations (ETDs) and the Networked Digital Library of Theses and Dissertations (NDLTD). We could not go beyond the objective of the study.

Secondly, time was short. I had about one (1) month in which to conclude my data collection. So I had to limit my sample to 150 respondents yet I feel could have had a larger sample especially for such important national project.

6.5 Challenges Encountered During the Study

The main problems I encountered were as a result of lack of funding and time. Funding, it was very difficult for me in the month of July, 2009 to raise funds to enable me travel home, to Zambia where I carried out my research. And while in Zambia, I travelled to different provinces and cities to collect data and information. That too was another problem because it was costly for me to afford. Lastly, were hotel bills, I had difficulties to settle them.

6.6 Achievements of the study

Our study achieved its objective. That is we found out that the reason why there is not Electronic Theses and Dissertations (ETDs) at the University of Zambia is because there is no person to start the process and that there was little   or no information available about the Networked Digital Library of Theses and Dissertations (NDLTD). This is a pioneer organization in ETDs that assisted many universities establish their ETDs and will help the University of Zambia Library in that regard.

The study brought to light some salient issues about ETDs. Thus after research, we found that 51.4% of the respondents knew about ETDs, 96.4% would support the introduction of ETDs, 53.2% would avail themselves as support staff and 97.3% were willing and ready to support and participate in the various roles of ETDs project.

Lastly, the study contributed to the body of knowledge on ETDs, library digitalization and ICTs.

6.7 Suggestions

We suggest that both as a university and country we take a proactive position on this important national project. Thus we should start the process to establish an ETD in the Special Collections of the University of Zambia Library. We should also spread ETDs gospel to other universities, research institutions and government ministries.

Acknowledgements

I wish to thank the Chinese Scholarship Council and the Zambian government for awarding me scholarship and bursaries respectively. I thank the University of Zambia, the University of Zambia Library, and the Staff Development Office for facilitating and granting me paid study leave.

I would like to thank Professors Li Rui Qing and Xu Kuan for all of the help and knowledge that they have given me. They are pillars of wisdom in the Mass Media Department of the Northeast Normal University. At the University of Zambia I thank Dr Augustus K. Kapungwe, Dr Vitalicy Chifwepa, University Librarian, Dr Akakandelwa, Akakandelwa, Mr. Davies Mwemba Chikalanga, Mr. Fabian K. Kakana, and Mr. Mayumbo Nyirenda.

I thank Professor Edward Fox, John Hagen, Heidi Cedi, and Professor Hussein Suleman, all of the Networked Digital Library of Theses and Dissertations for their tireless assistance in this study from its beginning as a paper to be presented at the

ETD 2009 Conference on the 10th to 13th of June, 2009 at the University of Pittsburgh, Pittsburgh, Pennsylvania, United States of America.

I thank my lovely beautiful wife Josephine Zulu and all my lovely children, Shozipi, Henry, Peter, Auguste Comte and Mercy for all the support that they gave me and the endurance they went through during my absence from home.

Lastly, I thank all my Chinese and International Foreign Students friends at the Northeast Normal University Dormitory building. Guys are great and made all my three years school life to be short, interesting and exciting. Praise be to God and may He abundantly bless you all.

Dedication

I dedicate this study to my father, Mr. Ziyalula Zuze Zulu and my mother, Mrs. Enala Olipa Soko for their everlasting love.

References

[1], [2], [3], [4], [5], [6] http://www.state.gov/r/pa/ei/bgn/2359

[7] Lockwood Commission. Report on Development of the University in Northern Rhodesia. 1963, Lusaka, Government Printers

[8], [9] http://www.unza.zm/

[10] University of Zambia Annual Report. 2005, Lusaka, UNZA, Printer.

[11] Chapter 17"Women on ICT Policy Making in Uganda" by Goretti Z. Amuriat and Dr Dorothy Okello also Available on http://www.idrc.ca/fr/ev-93066-201-1-DO_TOPIC.html

[12], [13], [14] Pearson, I (2004) The future of everyday life in 2010, London, British Telecommunications Plc. Available on www.bt.com/insights/pearson/everyday.html

[15] Peters, D. Pickover M. Insights of an African model for Digital Library Development. D-Lib Magazine Vol. 7 No 11(2001) Available on www.dlib.org/dlib/november01/peters/11peter.html

[16] Librarianship and Information Work Worldwide 1996/97. (1997) edited by Maurice Line, Graham Mackenzie and John Feather. London, Bowker Saur

[17], [18], [19], [20], [21], [22], [23], [24] http://www.ndltd.org/

[25], [26], [48] Suleman, Hussein, Atkins, A., Goncalves, M., France, R and Fox, Edwards (2001) Networked Digital Library of Theses and Dissertations: Bridging the gaps for global access. Part 1: mission and progress. Available on www.dlib.org/dlib/september01/suleman/09suleman-pt1.html

[27], [28], [29], [30], [31], [46] Walker Janice R and Christian R. Weisser," Excerpted: Electronic Theses and Dissertations: Digitizing Scholarship for its Own Sake." Vol. 3, no. 2, December, 1997 Available http://dx.doi.org/10.3998/3336451.0003.209

 [32], [33] Fox, Edward A., et al. 1997 "Networked Digital Library of Theses and Dissertations: An International Effort Unlocking University Resources" D-Lib Magazine (September) Available at http://www.dlib.org/dlib.org/dlib/september97/theses/09fox.html(10October)

[34], [37], [38] Yu Zhenglu and Pan Yuntao "ETD building the nutrition for researchers" 2006 Information Methods Research Center, Institute of Scientific & Technical Information of China, Beijing, P. R. China. Available on http://www.ifla.org/IV/ifla72/index.htm

[35], [36] Yang Zhao and Airong Jiang "Electronic Thesis and Dissertation System Development in China" 2008 NDLTD, Lexington, Kentucky, USA Available on http://www.uky.edu/ETD/ETD2004/zhaoyang/etd2004.ppt

[39] http://en.wikipedia.org

[40] CERNIC, CERNET Publication 1998-2000 Available on http://www.edu.cn/20010101/21852.shtml

[41] Northeast Normal University Library Guide 2009/2010. 2009 NENU, Changchun, P. R. China

[42], [43] Maseko, Raphael. The Performance of the Internet in Zambia. A Paper Presented at Computer Society of Zambia/E-brain Public Forum on 31st March, 2005 at Long Acres Lodge, Lusaka. 2004, ZAMNET Communication Systems Ltd.

[44] Zulu, Henry Panganani (2009) Digitalization of Masters Theses and PhD Dissertations at the University of Zambia. http://conferences.library.pitt.edu/ocs/viewabstract.php?id=748&cf=7

[45] Jadhav, Mahendra N and Niranjana J. Bamane. 1999 "Electronic Theses and Dissertations (ETD): An Initiative at Central Library."Indian Institute of Technology, Bombay

[47] Yi Jin. The development of the China Networked Digital Library of Theses and Dissertations. Online Information Review. Bradford: 2004. Vol. 28, Issue 5; page 367

Bibliography

Adams, R. (1990) Communications and delivery systems for librarians. Aldersht: Gower

Albritton, R. L. and Shaughnessey, T. W. (1990) Developing leadership skills: a source book for librarians. Englewood: Libraries Unlimited.

Basic Business Research Methods. http://managementhelp.org/research/research.htm

Babbie, Earl (2007). The Practice of Social Research.11th ed. Beijing: Tsinghua University Press.

Busha and Harter (1980). Research Methods in Librarianship: Techniques and Interpretation. New York: Academic Press.

Chifwepa, V. (2003). The Use of the Intranet and Internet by Teaching Staff of the University of Zambia. African Journal of Library, Archives and Information Science. Vol. 13 No2. pp. 119 – 132.

Chisenga, J. (2006). The Development and Use of Digital Libraries, Institutional Digital Repositories and Open Access Archives for Research and National Development in Africa: Opportunities and Challenges. FAO Regional Office, Ghana. Paper presented at the Workshop on Building African Capacity to Implement the Outcomes of the World Summit on the Information Society (WSIS) in the Sphere of Libraries and Access to Information and Knowledge. Tuesday, 28 March 2006.

Chisenga, J. A Study of University Libraries Homepages in Sub-Saharan Africa. Libri, Vol. 48. No1. (1998). pp 45 – 55.

DOT Force (2001). Digital Opportunities for all: Meeting the challenge. Report of the Digital Opportunity Task Force including the Genoa Plan of Action. Available at www.dotforce.org/reports/DOT_Force_Report_V_5.html (accessed on 31 July, 2002)

Electronic Theses and Dissertations: a sourcebook for Educators, Students and Librarians. Edited by Edward, Fox, Shahrooz, Feizabadi, Joseph M. Moxley and Christian R. Weisser

Felix, N. Ubogu. Spreading the ETD Gospel: A Southern Africa Perspective. The International Information & Library Review. Vol.33 Issues 2 – 3(June 2001). pp. 249 –259.

Hartwig and Dearing (1979). Exploratory Data Analysis. Beverly Hills, C.A. Sage Publications. http://en.wikipedia.org/wiki/library_Science

http://www.bgsu.edu/colleges/gradcol/etd/page25419.html

Katzer, Cook (1998). Evaluating Information: A guide for Users of Social Science Research.4th Ed. New York: Mc Graw- Hill Inc.

Law, D. Nicholson, D (2001). Digital Scotland, the relevance of library research and Glasgow digital library project program, Vol. 35. No1. pp. 1 – 14.

Leeves, J. (1990) Library systems: a buyer's guide, 2nd edition. Aldershot: Gower.

Librarianship and Information Work Worldwide 1991. Edited by Maurice Line, Graham Mackenzie and Ray Prytherch. London, Bowker-Saur, 1991

Mitchell, W. Bede and Mary Reichel. "Research. Publish or Perish: A Dilemma for Academic Librarians". College and Libraries Research.Vol.60 No.3. (1999). Pages. 232-244.

Muswazi, P. "Digital Library and Information Services in Southern African". Information Development. Vol. 16 No. 2 (2000). pp 75 – 81.

Ojedokun, A. A. Prospects of Digital Libraries in Africa. African Journal of Library, Archives and Information Science, Vol. 10 No. 1 (2000). pp 13 – 21.

Pemberton, J. Michael and Ann E. Prentice (Ed). Information Science: the Interdisciplinary Context. New York, Neal-Schuman Publishers, Inc.

Prescott, A. (1996) The digital library in theory and practice: a historian's view. In: Reconnecting science and humanities in digital libraries. Conference held at University of Kentucky. http://www.uky.edu/%7Ekiernan/DL/andrew2.html

Pyati, Ajit K. Whose vision of an Information Society?

Richard, S. (1989) Management information systems in academic libraries. British Journal of Academic librarianship, 4, 49-60

Rizzo, J. R. (1980) Management for librarians: fundamentals and issues. London: Aldwych Press

Ruohtula, Samppa. Wireless Communications in the Information Society. (1999) Helsinki, Helsinki University of Technology

http://www.firstmonday.org/issues/issue10_5/pyati/index.html.

Tedd, L. (1997). An Introduction to Computer-based Library Systems. London: Hyden.

Underwood, P. G. (1990) Managing change in libraries and information services: systems approach. London: Bingley.

University of Zambia, Relevance, Excellence and Accountability: Strategic Plan 1999-2003 University of Zambia Draft Document. (1999), Lusaka, UNZA Printers

Wiersma, William and Stephen G. Jurs (2004). Research Methods in Education: An Introduction.11th ed. Beijing, Pearson Education Asia Ltd and China Light Industry Press.

Williams, Frederick. Reasoning with Statistics: How to read Quantitave Research. 4th edition, New York: Harcourt Brace, Jovanovich

Women of Uganda Network. "Abuse of ICTs: a major cause of domestic violence." http://www.wougnet.org/cms/content/view/388/1/

Wu, Jianzhong. (2003) New Perspectives on the Library of the 21st Century. Shanghai Scientific and Technological Literature Publishing House

APPENDICES

Appendix 1

Dear Respondent,

REF: HENRY PANGANANI ZULU (亨利 旁格纳尼 祖鲁) 07113006

The above named is a candidate in a Masters program in Information Science degree at Northeast Normal University, Changchun, Jilin Province in the Peoples' Republic of China.

Currently, he is in Zambia to carry out his research **Electronic Theses and Dissertations (ETDs): Digitization of Scholarly Works at the Special Collections of University of Zambia Library, Lusaka, Zambia** as part of the requirement for the award of Master's degree in Information Science. We would highly appreciate any kind of help that you would render to him.

As a respondent you were purposefully picked to respond to the questionnaire and the information that would be generated from you would help in compiling the study/research findings. We would be very grateful if you could attempt to answer all the questions to the best of your knowledge.

Please be rest assured that the information that would be collected through the questionnaire, will be treated with confidential and is purely for academic purposes.

Thank you in advance,

Appendix 2

INTERVIEW SCHEDULE

EXPLANATION TO THE INTERVIEWEE

This Questionnaire is on Electronic Theses and Dissertations, a study/research which is being carried out by a Postgraduate student of the Northeast Normal University, Changchun, Jilin Province in the Peoples' Republic of China. It is intended to assist in collecting data/information on Electronic Theses and Dissertations project, that would be implemented later in the year 2010 at the Special Collections of the University of Zambia Library, Lusaka, Zambia. Please could you answer the questions carefully and honestly? The Questionnaire is absolutely anonymous. And the information that you will give will be treated with maximum confidentiality and shall only be used for academic purposes.

SECTION A: BACKGROUND INFORMATION

TICK WHERE APPLICABLE AND FILL IN WHERE NECESSARY

1. Respondent/Name…………………………………………………………………

    Position ……………………. Date………………………………..

    Address………………………………………………………………………

… Province………………………………………………………………….

    City………………………………………………………………….

    Telephone…………………………………………..

    Date of Birth………………………………………....

2. Sex: Female ☐   Male   ☐

3.　　Are you currently,

1. Married ☐　　　　　2. Separated　　　☐

3. Widowed ☐　　　　　4. Single　　　☐

5. Divorced ☐

SECTION B: KNOWLEDGE ABOUT NETWORKED DIGITAL LIBRARY OF THESES AND DISSERTATIONS (NDLTD)

4.　　Do you know the Networked Digital Library of Theses and Dissertations (NDLTD?)

　Yes　☐　No ☐

SECTION C: KNOWLEDGE ABOUT ELECTRONIC THESES AND DISSERTATIONS

5. Do you know an Electronic Theses and Dissertation s (ETDs)?

　Yes ☐　　　　No ☐

6.　　Do you have an Electronic Theses and Dissertations at your

　Institution/University?

　Yes ☐　　　NO ☐

If Yes since when………………………………………………………

If No why..

7.　　At your Institution/University do you have an Information and Communication Technologies (ICTs) policy?

Yes 　□　　　　　　　No 　□

8.　　Would you like to have an Electronic Theses and Dissertations at you Institution/University?

Yes 　□　　　　　No 　□

9.　　Would you support the introduction of an ETD at your University?

Yes 　□　　　　　No 　□

10.　　If an Electronic Theses and Dissertations program was introduced at your Institution/University what kind of support would you render in your capacity?

　　　a.　Financial

　　　b.　Moral

　　　c.　Material

　　　d.　Technical

　　　e.　Staff

　　　f. Other / Specify……………………………………………………

11. If an Electronic Theses Dissertation was introduced at your Institution/University what role would you play?

Specify………………………………………………………………

12. If an Electronic Theses and Dissertations were introduced in your Institution/University are you willing to participate in it?

Yes ☐   ☐ No

SECTION D: BENEFITS OF AND ELECTRONIC THESES AND DISSERTATIONS

Here is a list of some of the benefits of an Electronic Theses and Dissertations.

Tick what would apply to your University /Institution

Benefits

1. Move Zambia in to digital era

2. Move your Institution/University into digital era

3. Bring together the personnel and infrastructure required for other digital library projects

4. Quality of your Institution/University's student's intellectual products would be reflected internationally

5. Students would easily learn from each other's work

6. Results of programs are widely known

7. Students would easily use bibliographical reviews

8. Students would easily share methodologies used by their researches

9. ETDs yields easier and faster access to information

10. ETDs hold information that will help avoid duplication of efforts

11. ETDs would be part of the assets and history of the University

12. Our UNZA Library will share knowledge in digital libraries

13. ETDs enables Intellectuals to electronically publish their work

14. Once an ETDs is implemented other digital libraries effort in UNZA would bloom

15. ETDs require less library storage space

THANK YOU VERY MUCH FOR YOUR TIME AND HELP

谢谢！