

**UNDERUTILISATION OF INTERNET FACILITIES AT UNIVERSITIES: A
CASE STUDY OF JOMO KENYATTA MEMORIAL LIBRARY (JKML),
UNIVERSITY OF NAIROBI AND UNITED STATES INTERNATIONAL
UNIVERSITY AFRICA (USIUA) LIBRARY**

BY

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**A dissertation submitted in partial fulfillment of the requirements for the award
of the Degree of Master of Science in Information Science of Makerere
University.**

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JUNE 2000



DECLARATION

I, Njiraine, Dorothy Muthoni, hereby declare that to the best of my knowledge, this is my original work and that it has never been submitted to any University or Institution for the award of any qualification. Where citations have been made, references have been indicated.

SIGNED: _____



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31/07/2000

STATEMENT OF ORIGINALITY

The conception, research, organization, and writing of this dissertation are entirely that of the candidate, Dorothy M. Njiraine, The research has been carried out at the East African School of Library and Information Science (EASLIS), Makerere University, under the supervision of Mr. I M N. Kigongo-Bukenya and Dr. S A H. Abidi.

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DEDICATION

To Dad and Mum, Mr. and Mrs. J.J. Kahuria, a foundation you set that made me reach this far.

To my loving husband, Mr. Nelson Njiraine and our two lovely daughters, Sharon Wairimu and Mary Mumbi, for their overwhelming love, perseverance and support that turned this dissertation and the entire course a real success.

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TO YOU ALL THANK YOU AND MAY GOD BLESS YOU.

ABSTRACT

This dissertation is based on a study carried out at Jomo Kenyatta Memorial Library, University of Nairobi, and United States International University-Africa. The main aim of the study was to establish how internet facilities could be utilized effectively.

Specific objectives of the study were to: identify the present internet facilities; identify the present and potential internet users; establish whether or not the internet facilities are optimally used.

The study was mainly qualitative though it had quantitative elements. Purposive sampling was applied because only some key respondents had the required data and they were identified by applying snowballing strategy. Instruments used included questionnaires, focus group guide and observation guide.

Lecturers and students were the targeted sample as they are the foundation to Research and Development in this technological global village. Use of internet facilities is very vital to achieve high standards in academics.

Major findings includes:

- Sensitization of users especially at the University of Nairobi was very poor.
- Very few lecturers and postgraduate students visited the Internet Café.
- The computers for use were very few taking into consideration that there were six computers that served a population of about 15 000 lecturers and students.

LIST OF ABBREVIATIONS

Major recommendations are:

- Creating awareness of the presence of the internet facilities should be taken seriously to improve the learning environment at universities.
- Increase the number of computers to give users high chances of internet accessibility
- Make internet accessibility easier by reducing the fees charged to users.

LIST OF ABBREVIATIONS

AAAS	Advancement of American Association of Science
AFLIB-L	African Librarian List-serve
BA	Bachelor of Arts
BSc	Bachelor of Science
CD-ROM	Compact Disc Read Only Memory
E-MAIL	Electronic Mail
FTP	File Transfer Protocol
GIF	Graphic Image File
HTML	Hypertext Mark-up Language
IP	Internet Protocol
ISP	Internet Service Provider
JKML	Jomo Kenyatta Memorial Library
MA	Master of Arts
MBA	Master of Business Administration
MIMA	Master of International Business Administration
SED	Short English Dictionary
TCP	Transmission Control Protocol
UON	University of Nairobi
USIU-A	United States International University-Africa
WAN	Wide Area Network
WWW	World Wide Web

CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND TO THE STUDY

The origin of internet can be traced back to the late 1960s, out of an effort to connect together a United State Defense Department Network called the ARPANET (Whitehead & Maran, 1997:10). An experiment was performed in 1968 by Information Processing Techniques Office (IPTO) to connect computers over a shared network ARPANET. Original purpose was to command and control information during a nuclear 'event' but it later became a straight research project without specific application Lynch (1993:5). By 1980s most people accessing internet were scientists and researchers, and by mid 1990s over 30 million people had access to internet, with most big companies creating their own sites on the World Wide Web (WWW) (Whitehead & Maran, 1997:11).

What is internet? There are many explanations and definitions of internet. Whitehead & Maran (1997:4) explain internet as being made up of thousands of connected networks around the world. These networks allow computers to exchange information. This information could be services such as electronic mail, file transfer protocol, database access and more others. Internet is also viewed as a co-operatively run global collection of computer networks with a common addressing scheme (Kennedy, 1999:446).

Internet is found all over the world with millions of users. There are so many services offered by internet such as:

- Electronic Mail (e-mail)
- Programs (e.g. word processing, spreadsheets, games.)
- Information (academic papers, newspapers.)
- Entertainment
- Discussion groups
- Online shopping

1.1.1 University of Nairobi : Jomo Kenyatta Memorial Library

The University of Nairobi has a six-year Library System Development plan 1994/95 – 1999/2000. The mission of the development plan is to acquire, organise disseminate information and provide essential service to research. In addition to that, one of the library's goals and objectives is to organise the acquired information resources according to international standards in order to ensure the efficient and effective use of the same.

The setting up of a computer co-ordinating unit located in the Jomo Kenyatta Memorial Library (JKML) was an outcome of the development plan. The unit was to serve the needs of the entire university community in the context of information accessibility and dissemination. There was lack of software to support the unit hence the management decided to set up an Internet Cafe, which was connected directly through DIALOG, an international database.

The internet cafe has a manual consisting of services available and charges for both staff and students. Services being offered include e-mail services, internet access, word processing and CD-ROM. The e-mail is connected through African Librarian

List-serve (AFLIB-L). AFLIB-L is an e-mail network based in Pretoria, South Africa. AFLIB-L connects all libraries in Africa, which are already connected. Accessibility becomes easy for African documents that are difficult from other sources.

The most pressing issue for African universities and research institutes was how to ensure affordable internet access and to persuade the university administrators that it be given a high priority (AAAS 1996:foreword).

1.1.2 United States International University-Africa (USIU-A)

The United States International University - A (USIU-A) is a private university in Nairobi, with its headquarters in San Diego, United States. It has three campus locations:

- San Diego, United States
- Mexico city, Mexico
- Nairobi, Kenya

The University has a student population of about 1800 both undergraduates and postgraduates. The following courses are offered:

- Business Administration (B.S)
- Information Systems and Technology (B.S)
- Hotel and Restaurant Management (B.S.)
- International Business Administration (B.S)
- Tourism Management (B.S)
- International Relations (B.A)

- Journalism (B.A.)
- Psychology (B.A.)

Masters program include:

- Counseling psychology (M.A.)
- Business Administration (M.B.A.)
- International Business Administration (M.I.B.A.)
- Management and Organizational Development (M.S.)

Computer facilities are both for administrative and reading purposes. USIU is linked through fax, e-mail and internet telecommunications in addition to postal and courier services.

Internet facilities are available to both students and staff at their internet café popularly known as computer labs. There are two computer labs, A and B. Lab A has 24 computers while B has 18. In addition to the above there is also a teaching lab, which has 18 computers.

The library has a stock of 60,000 books and 2,000 periodical titles. Automation and internet were introduced to improve the delivery of library services and respond to the rapidly changing technological environment.

1.2 RESEARCH PROBLEM

The Shorter Oxford English Dictionary defines the word “utilise” as to “make useful”.

It was observed that the internet is not optimally used. This means that the academic staff and students are not extending much effort consulting the internet for their own academic advantage. This trend has led to wastage of funds injected to the project. The students on the other hand are getting a raw deal as far as their academic standards are concerned. It is therefore necessary to establish reasons as to why these facilities are infrequently used.

1.3 AIM OF THE STUDY

The study aims at improving effective utilisation of internet facilities at the universities.

1.4 OBJECTIVES

The study's objectives are:

- to establish present internet facilities
- to identify the present and potential users
- to establish whether or not the internet facilities are optimally used.

1.5 CONCEPTUAL FRAMEWORK

The key concepts in the study are:

- utilisation
- universities
- internet facilities
- students
- lecturers
- professional staff.

The definition of concepts have been derived from the Shorter English Dictionary (S.E.D) on Historical Principles and Harrods Librarians Glossary (H.L.G.). Utilisation is defined as to make useful. Utilisation is being used as a dependent variable in the study. The relationship between it and other variables will follow later in the study (S.E.D., 1973: 2327).

University is defined as “such persons associated together as a society or corporate body, having the power of conferring degrees and other privileges and forming and institutions for the promotion of education in the higher branches of learning”(S.E.D, 1973:2327).

Internet facilities encompass a large computer network formed out of some thousands of inter-connected networks which support a whole range of services such as e-mail, File Transfer Protocol, internet surfing and many others (Yumba, 1997:164).

A student according to the Shorter Oxford English Dictionary is a person who is undergoing a course of study and instruction at a university or other place of higher education or technical training. In this study students will include both the undergraduates and postgraduates of both universities (S.E.D, 1973:2049).

Lecturer is referred to as one who gives a lecture, one who is appointed to deliver a course of lectures in a university or college especially as subordinate to a professor. (S.E.D, 1973:1123).

Professional staff – a member of the professional staff performing work of a nature requiring training and skill in the theoretical or scientific parts of library work as distinct from the merely mechanical parts (H.L.G,1995:517).

Figure 1: The Conceptual Framework of the Present Under-utilisation of Internet Facilities at the Universities

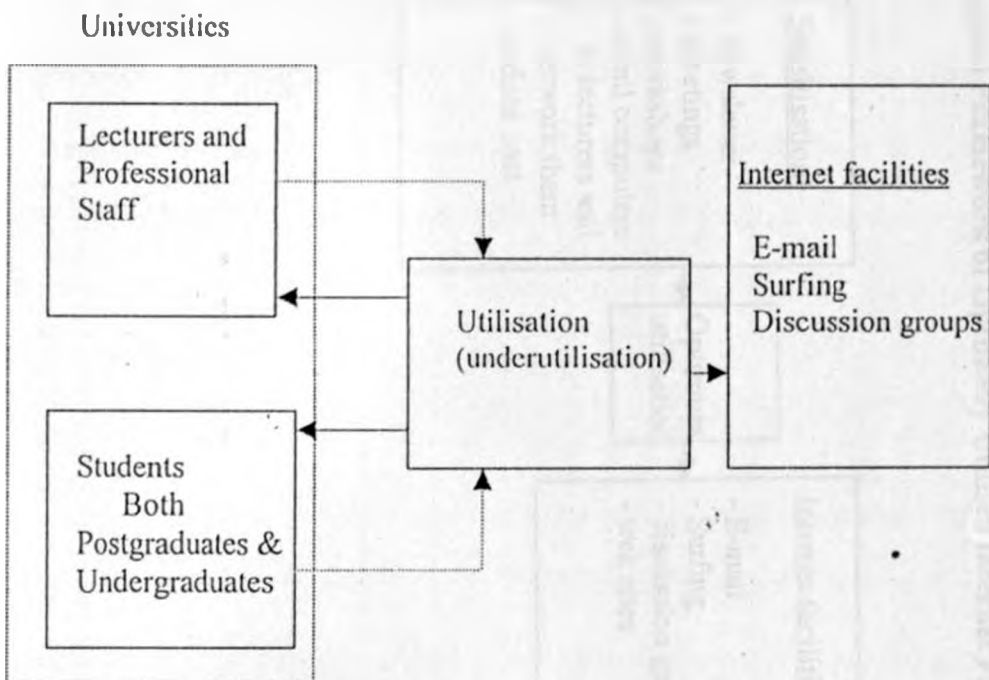
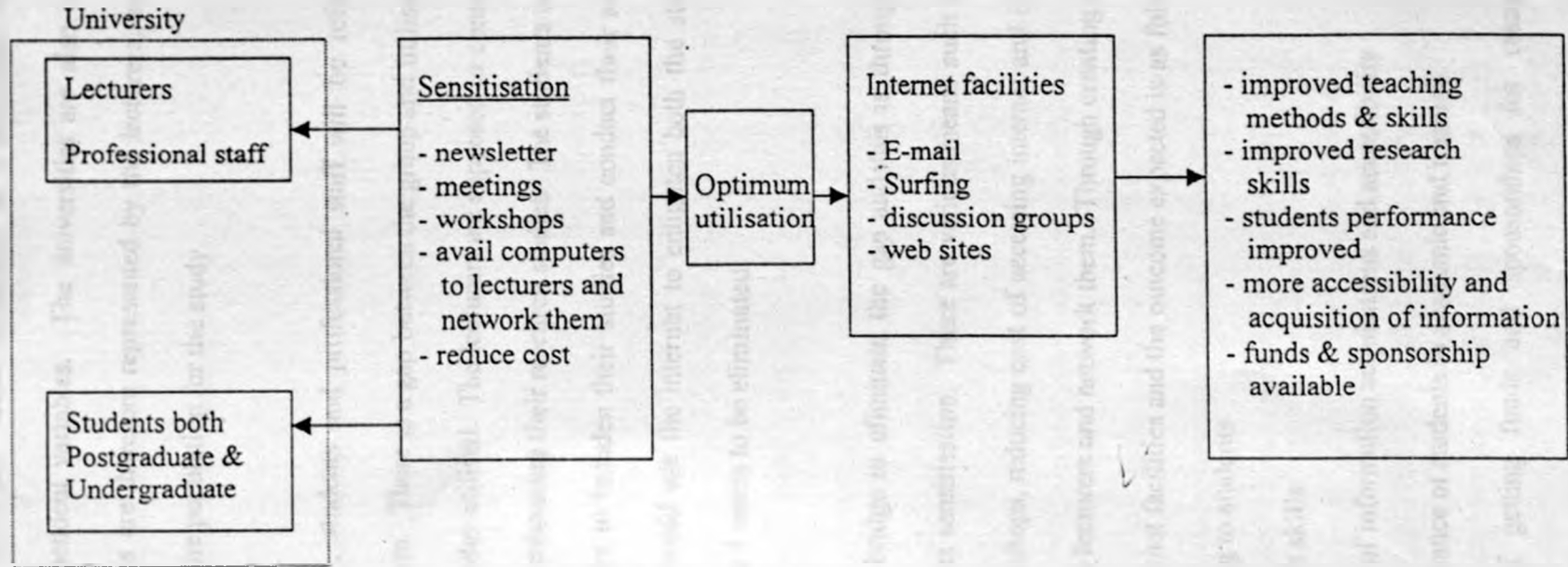


Figure 2: The Expected Conceptual Framework of Optimally Utilised Internet Facilities at Universities



The key variables in the study are “under-utilisation” as a dependent variable and internet facilities as independent variables. The universities are also independent variables. The universities are therefore represented by the lecturers, students and professional staff who are the population for the study.

In Figure 1, the lecturers, students and professional staff will be referred to as “groups” to simplify the term. There is a gap between the group and utilisation hence the internet facilities are under-utilised. The lecturers are supposed to consult internet for improved teaching and enhancing their research studies. The students on the other hand should consult internet to broaden their studies and conduct their assignments and research. The staff should use the internet to enlighten both the students and lecturers. The gap in Figure 1 needs to be eliminated.

Figure 2 gives a possible bridge to eliminate the gap and this is through creating awareness also referred to as sensitisation. There are various means such as through newsletters, meetings, workshops, reducing cost of accessing internet and if funds are available avail computers to lecturers and network them. Through creating awareness there is optimum use of internet facilities and the outcome expected is as follows:

- Improved teaching to students
- Improved research skills
- Widened horizon of information acquisitions and accessibility
- Improved performance of students in academic and research
- High chances of getting funds and sponsorships for researches in developing countries

1.6 DEFINITION OF TERMS

The following concepts are some of the key terms found in this study, other terms have been included for the benefit of the users.

Bandwidth: It is a term used to describe internet connection capacity. It affects the speed at which one can download material from the net. Normally a high bandwidth connection can carry more data at the same time than a low bandwidth connects. Bandwidth is expressed in bits per second (BPS).

Browser: This is a program, such as Netscape or internet explorer that allows one to download and display web documents.

Download: Retrieve a file from a host computer.

Electronic Mail (e-mail): This is a computer mediated communication system, in which messages in electronic form are exchanged between computers linked in some way, normally through a terrestrial public telephone network. The sending and receiving computers use a suite of computer based tools (programs or protocols) to compose, edit, modify, forward, store, retrieve or otherwise manipulate messages. The e-mail is becoming the most commonly used form of communication in African academic environments. It is providing timely, environment and inexpensive access to colleagues outside the continent.

File: Anything stored on a computer such as program, image, or a document.

File Transfer Protocol (FTP): This is a protocol that defines how to transfer files from one computer to another.

GIF: Graphic Image Format is a compressed graphics format commonly used on the net.

Hypertext: Documents that contain links to other documents – selecting a line automatically displays the second document.

Hypertext Mark up Language (HTML): The language in which worldwide web documents are written.

Internet: This is a network of both public and private lines and microwave links. It is worldwide network of millions of computers linked together by telephone lines worldwide.

Internet Protocol (IP): Rules are called protocols IP take care of addressing or making sure that the users know what to do with data if it arrives. It defines the most basic and universal set of internet data transport services.

Internet Service Provider (ISP): An organisation that allows computer users to chat in and use their internet connection for a fee. ISP provide an internet connection along with an e-mail address and sometimes a web browser. African Online is an example of an ISP.

Packet: A bundle of data on the internet data is broken up into small chunks called packets, each packet traverses the network independently packet sizes vary from about 40 to 34000 bytes, depending on network hardware and media, but they are normally less than 15000 bytes long.

Protocol: This is how computers will act when talking to each other. Protocol defines range from how bits are placed on a wire to the format of an electronic mail message. Standard protocols allow computers from different manufacturers to communicate. The computers can use completely different software provided that the programs vary on both ends agree or what the data means.

Router: A system that transfers data between two networks that use the same protocols. Can also be referred to as the traffic cops of the internet monitoring the flow of packet around the system.

Search Engines: These look for each and every keyword and try to give a feedback. In other words they create indexes which organise information on the www according to particular and unique methods.

- Server:** The computer on which the server software runs it's a host computer that sends web page information to other computers. They are (web servers) powerful than the average desktop computers.
- Surf:** To skip from page to page searching for information on the web by following links.
- Transmission Control Protocol (TCP):** Is a protocol implemented by internet hosts which makes use of IP services and provides a reliable bi-directional byte stream over unreliable diagram network service.
- Worldwide web (www):** It is an open system unifying in boundless, seamless world mankind electronic information resources as part of a complex interrelated structures as human technology, human information interaction aimed at information retrieval and sharing, in the context of modern computer network communications. In simpler terms it is the inter-linking of sites, ideas, libraries, companies and cultures.
- UNIX:** A popular operating system that was very important in the development of the internet.
- URL:** Uniform Resource Locator - the addressing system for the web.
- USENET:** It is an informal group of systems that exchange news. News is essentially similar to bulletin boards on other networks.

1.7 SCOPE

1.7.1 Geographical scope

The study will be limited to two university libraries. These are the University of Nairobi Main Library called Jomo Kenyatta Memorial Library (JKML) and United States International University-Africa (USIU-A) Library. The former is a public university while the latter is a private university.

1.7.2 Conceptual scope

Under-utilisation in the study will be highlighted from various perspectives.

- Under-utilisation of internet facilities. The major area of focus is what internet applications are used by the users. To most users internet means e-mail, others ability to play games, less usage on other applications such as chatting box and internet surfing.
- Under-utilisation is also viewed in terms of people who use it. Basically the teaching community and the students are expected to make maximum use of internet, but that is not the case. The academics should be greatly involved to improve on their teaching and research purposes. How many lecturers have their sites on the world-wide web (WWW)?

1.8 SIGNIFICANCE OF THE STUDY

The research being carried out is expected to benefit the following:

- Students, both the undergraduates and postgraduates by making them aware of the need and advantage of internet to their academic studies and the world around them.

- Administrators/policy-makers, by taking internet facilities as a priority and set aside funds to run and maintain the project.
- Various learning institutions such as universities and national polytechnics and other colleges - will apply the benefits of internet to their academic settings and also take caution to unnecessary problems that may be discovered from the findings.

1.9 JUSTIFICATION OF THE STUDY

The study will:

- Create awareness to the parties involved, that is the lecturers, students, and other staff would know of internet and use it accordingly.
- Act as a blueprint to administrators and policy-makers in their respective undertakings concerning utilisation of internet facilities and all attributes regarding the study.
- Enlighten the present and potential internet users about the availability of various internet facilities, such as web-sites, surfing, discussion groups, and more others
- Make it possible to know the current internet users and enable the internet providers and producers plan for them in terms of space and adding more facilities like the computers, printers, and others.
- Help to identify problems encountered by the users and other probable reasons as to why they do not use, or the improvements they would like to be made in the internet usage.

1.10 BRIEF METHODOLOGY

The researcher adopted qualitative research in the study. Though there is no purely qualitative research, a larger part was qualitative. This is because of the nature of the study. The study conducted sought to find out reasons as to why internet facilities are not optimally utilised at universities. This kind of research relies mostly on peoples opinions and feelings, which can not be statistically quantified. Therefore quantitative approach was not an ideal one for this study.

The researcher used questionnaires, focus groups, interviews, and observation to collect data which when used together are best for a qualitative study and they complement each other.

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1.11 MAJOR FINDINGS

Major findings from the study are that:-

- Internet facilities have not been utilised properly due to lack of knowledge and awareness among the members of the university community.
- Lack of enough computers to serve the intended university community.
- Few lecturers and postgraduate students visit the internet café.

1.12 LIMITATIONS

1.12.1 Mobility

The distance between the two universities where the study was conducted was considerable, making accessibility a handicap to the researcher.

1.12.2 Financial constraints

The researcher is self sponsored therefore the whole expenditure of research proved strenuous financially.

1.12.3 Non-cooperation

The researcher experienced limited cooperation from the respondents especially the lecturers from University of Nairobi, who did not want to participate in the study. The reasons have been outlined in chapter three.

1.13 RESEARCH QUESTIONS

The study was guided by the following research questions:

- What are the present internet facilities?
- Who are the present and potential internet users?
- Whether or not is internet optimally utilised?

CHAPTER TWO

LITERATURE REVIEW

There have been various authors who have written on internet facilities but taken a different approach from that of the researcher. Most related materials touch on the origin, uses, benefits, and problems of internet. The researcher clearly seeks to find out why even after this advent, it is not optimally used especially by lecturers and students as it should.

Hartvany (1996:246) discusses the idea of worldwide library. The paper stresses on the outcome of internet facilities thus leaving a gap of why even after the introduction and installation of internet, it is not utilised as it should. The paper does not give the present and potential internet facilities and users (the objectives this study deals with). The paper does not use any scientific procedures to base its claims. The author gives his ideas that development of world wide library is through collaboration between

- information providers
- technology companies
- hardware and software vendors
- distributors
- information professionals
- the information users

All these will expand access to the existing content, create new content and build excellent navigation tools to organise the library.

On availability through increased content, the author argues that this kind of collaboration brings more value to our contribution than competition and has enabled an expansion in information availability. This is by producing and distributing the electronic databases to the library community.

On availability through better organization, he brings about the role of the information professionals as that of information navigators. This means that the professionals will organize the millions of sources in the library and make available millions of navigation tools or sample searches for information users globally.

Availability through preservation will enhance and make it the responsibility for preserving information available in electronic formats and making it available in the future.

He also mentions the information available through improved technology. He makes it clear that the continued development of technology and standards will result in the technologies and content of the worldwide library being integrated.

The Electronic Journal in the worldwide library will only be successful if the following will be available and possible. These are content, access, navigation, technologies and standards. The Electronic Journal will be flexible. This means that its contents will change frequently incorporating text, video, sound, motion and other features. The creation of content will require peer review, as does journal publishing today.

He concludes that Electronic Journal will be part of worldwide library and one of the sources that the information navigators will use from the many others available. Collaboration is the ultimate goal to make the whole dream be realized.

Chisenga (1977:105) examines the introduction and use of e-mail at the National University of Lesotho. The paper tackles only one of the various internet facilities, that is e-mail and does not take the approach of the researcher.

A questionnaire survey and personal interview were conducted to find out the extent and purpose of e-mail use on campus. This was done through a list of 60 teaching, research, library and documentation staff working in departments that had e-mail facilities. Questionnaires were distributed to five faculties, two institutes and the university via internal postal system.

Response rate was 88.33% (53 questionnaires) with 35.85% (19) respondents indicating they were not using e-mail. This leaves 64.15% (34) respondents for data analysis and discussion.

Uses of e-mail were outlined as

- day to day activities 58.82%,
- exchanging research ideas 44.12%,
- arranging meetings/conferences 32.35%,
- exchange computer files 17.65%,
- receiving technical advice 14.71%,
- discussion groups (listserve) 11.76%,
- managing projects 8.83%.

- and co-authoring papers/books 2.94%.

Benefits of using e-mail included: improved personal communication with colleagues in Europe and USA, reduced time for sending and receiving the requested information, ability to send computer files using e-mail is also a major benefit.

On problems encountered with e-mail, the following were listed: frequent telephone breakdown, limited time provided to users, inadequate technical support and absence of user manuals for the users.

The respondents suggested full internet connection, appropriate training, installation of a campus wide area network (WAN), improved power supply, and production of an internet e-mail directory.

The researcher concluded by highlighting the urgency of intensifying the use of e-mail at the university. Facilities like information retrieval, exchange of research information and results should be fully exploited. Full internet sources should be considered.

Another research carried out on internet was by Ojo-Igbinoba (1997:91-103). He gives a historical development of internet and discusses the mode for its implementation in Nigeria, being as users and providers. Also advocated is the need for internet in libraries considering its versatility in information provision and dissemination. The paper focuses on internet in Nigeria and advises developing countries to put their acts together and get linked up to internet. The role of

librarians and other information professionals in the use of internet is also discussed. The paper is based on secondary sources of information. The paper leaves a gap the researcher has to fill by carrying out the study which is based on finding out the under-utilization of these internet facilities.

Yumba (1997:164) has written a brief paper which focuses at the potentials offered by internet and gives various reasons as to why libraries, information centres and research institutions in Africa should have internet connectivity. It also highlights constraints to accessing internet in an African setting. The paper sets out strong points but no research was carried out as evidence to support it.

The examination of key aspects of the operative, functions and characteristics of the worldwide web (WWW) and its place on the global information network, that is the internet from a general historical-theoretical and then from a concrete practical application perspective is highlighted by Horton and Ilceheva (1995: 99-108).

The paper gives a detailed procedure on how to study WWW from the point of view of information storage and retrieval strategies. This is by learning how to produce hypertext document in Hypertext Mark up language (HTML.). The project was started on an experimental basis at WWW server at Pietermaritzburg campus, University of Natal. This marked the birth of a campus information system connected to the internet to include information on all faculties and departments. The first phase of the project's main objectives was to make the relevant data

accessible to prospective students and researchers locally and internationally, which contradicts this study's main objective.

A set of documents in HTML was created, tested and installed. These contain various facts about the university's department of information studies. The information is organised by 31 files whereby 19 are in HTML (13 kilobytes) 11 are gif-files of images (17 kilobytes) and 1 is a map file.

- Information contained above include:
- introduction to the department
- location and contact addresses
- sources
- eligibility and duration
- curricula
- assessment
- staff
- staff pages

The paper concludes by outlining the importance of internet as well as its constraints. A call is also made to the developing nations not to ignore the dire importance of internet and funds should be availed to invest in the service. There is also an urgent need now for an information policy program to plan and coordinate major efforts to this end.

Peritz, et al (1997:508) carried a study examining and comparing the use of the internet among various sectors of the faculty. Parameters considered, include:

- The field and research interests of the faculty members,
- Formal training on the use of the internet,
- Self-instruction in the use of the internet,
- General use and knowledge of computers and
- Perceived need for the information this network can provide.

The questionnaire consisting of 26 questions closed ended was sent to 778 faculty members. The return rate was of 59.4% being 462 questionnaires.

The following is a breakdown of faculty response rate:

<u>Faculty</u>	<u>Sent</u>	<u>Return (%)</u>
Humanities	229	54.6
Social Sciences	152	53.3
Law, Social work, Library	43	62.8
Agriculture	92	72.8
Science, Dental Medicine	262	61.8
Total	778	59.4

COMPUTER USE (511)

Thirty nine respondents out of 462 reported non-use of computers. The percentage was higher in Humanities with 11.6% and lower in Sciences and Agriculture with 5.2%.

INTERNET USE (511)

Three hundred and seventy one out of 462 respondents used internet. The breakdown of internet users by faculty was as follows:

<u>Faculty</u>	<u>Respondents</u>	<u>Users (%)</u>
Humanities	125	62.4
Social Sciences	81	86.4
Law, Social work, Library	27	59.3
Agriculture	67	89.6
Science, Dental Medicine	162	90.7
Total	462	80.3

E-MAIL (512)

Out of the 371 internet users, 362 use e-mail. This outcome showed that not all internet users use e-mail.

OTHER INTERNET USERS (513)

<u>Type of source</u>	<u>Users (%)</u>
Discussion group	45
File Transfer (HP, telnet)	48
Search Interfaces (gopher, www mosaic)	35
Others	7.5

Another study focused on how satisfied Australian academics were when they use the internet to search for information (Bruce 1998: 541-556). An invitation to

participate in this research was distributed to 200 e-mail addresses which, were randomly selected from a list consolidated from e-mail directories of 5 universities, in the State of New South Wales (which contained 6626 addresses). A message was distributed to the 200 addresses instructing that non-academic staff should ignore the message. The message also indicated to academic staff that the research would focus on "Use of internet information resources for information seeking" and that during the interview each academic would be asked to describe two occasions in which he/she had used internet resources to search for information. Thirty seven academics responded to the message indicating that they would be willing to be interviewed. Those respondents teach and research in the following disciplines:

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- Economics
- Meteorology
- Marketing
- Nursing
- Law
- Mathematics
- Information Studies
- education
- Information technology
- Engineering
- accounting
- Wine Science
- Psychology
- Agriculture
- Sociology
- Industrial Design

Structured interview was conducted to collect data and was done in 3 parts. The first consisted of an exercise in which each respondent was asked to give his/her impression of the length of a set using the modalities of numeric estimation and force of hand grip (Bruce, 1998: 547).

The second part of the interview sought out from each subject on the frequency of using the internet for information seeking and whether they ever attended an internet training course or courses.

In the third part of the interview, each subject was asked to describe two incidents in information seeking on the internet, paying particular attention to

- Identifying the problem
- Internet resources
- Search strategies
- Outcomes

The significance of a relationship between satisfaction with information seeking on the internet and valuables such as frequency of use, internet training and expectation of success was tested by a series of will hypotheses. The study discovered that the majority of Australian academics who use the internet regard themselves as infrequent users in regard to information seeking.

The research on factors that influence the use of electronic networks by Science and Engineering at small institutions was also carried out (Liebscher et al, 1997: 497 – 507).

The sample constituted of six small universities/colleges in the Southeastern U.S. The selection was based on the following:

- Size of student body (4000 undergraduate students)
- Existence of internet connection
- Extent of campus computing and network infrastructure

- Extent of the Science to Engineering programs

Three hundred and seventy one faculty members from the selected institutions were sent detailed questionnaires that probed to use and non-use patterns.

Follow-up site visits were also made to all campuses so as to interview a small sub-sample of faculty and administrators. Two hundred and sixteen questionnaires were returned complete and usable (59%). Response rates ranged from 55% to 65% from individual institutions. The breakdown of academic rank was as follows:

- | | |
|-------------------------|-------|
| • Instructors/Lecturers | 9.9% |
| • Assistant Professors | 39.6% |
| • Associate Professors | 21.7% |
| • Full Professors | 26.4% |
| • Miscellaneous | 2.4% |

Respondents hailed from the following disciplines with %

- | | |
|-----------------------------|-----|
| • Biological Sciences | 14% |
| • Engineering | 12% |
| • Health Sciences | 11% |
| • Math/Computer Science | 25% |
| • Physical & Earth Sciences | 23% |
| • Social Sciences | 25% |
| • Others | 2% |

Non-users outlined their reasons for not using the internet as

- Nothing much of interest for them

- Using internet was too much of a problem
- Other colleagues kept them informed of information of interest to them

NETWORK USE

The study classified respondents into three groups

Groups	use (%)
• Network users	65
• Non-users	31
• Non-adopters	4

Number of sources used

The study concentrated on network users and the following are services used by the respondents

<u>Service</u>	<u>Use (%)</u>
• E-mail only	19
• All five Services	14
• E-mail, access remote databases, file transfer	13
• E-mail, electronic discussion group, access remote data bases, file transfer	13
• E-mail, access remote databases	10

Frequency of Use

Fifty two percent of the users reputed use of some network service at least once a day. The study conducted that given that a network connection is availed a majority of network users from Science and Engineering faculties would make use of it. Electronic mail had a higher percentage of usage (Liebscher, 1997:505).

Connection to internet is a vital communication tool for the faculty members daily undertakings. No researcher so far has carried out a study seeking to find out why academics and students shy away from the internet. This will be an eye opener so that ways and means are found to improve the current situation.

A research study was conducted to investigate the reasons why academics and students shy away from the internet. The study was carried out in a tertiary institution in Lagos State. The study was carried out in a tertiary institution in Lagos State. The study was carried out in a tertiary institution in Lagos State. The study was carried out in a tertiary institution in Lagos State.

- 1. Lack of internet access
- 2. Poor internet speed
- 3. Lack of internet skills
- 4. High cost of internet
- 5. Limited bandwidth
- 6. Poor quality of service
- 7. Lack of support

METHODOLOGY

The study was carried out in a tertiary institution in Lagos State. The study was carried out in a tertiary institution in Lagos State. The study was carried out in a tertiary institution in Lagos State. The study was carried out in a tertiary institution in Lagos State.

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

A pilot study was first conducted. Five questionnaires were distributed: two to lecturers, one to a professional librarian, one to Internet Café staff and one to a student. Three questionnaires were returned. The pilot project version of the questionnaire was revised and corrected. The questionnaire consisted of 19 questions, of which 17 were open-ended and two were closed ended questions. This chapter outlines the methods and techniques used by the researcher to collect data. The chapter discusses the following in details:-

- Research design
- Area of study
- Sampling strategies
- Methods
- Data analysis
- Presentation and interpretation of data
- Limitations

3.2 RESEARCH DESIGN

The study carried out was mainly qualitative though had quantitative elements, which are expressed in percentages in Chapter Four.

The researcher opted for four types of methods: the Questionnaire, the Focus Group, Observation and Interviews. These methods combined would get to unearth

the core problem the research sought. That was to find out the reasons why the university community (lecturers & students), did not use the available internet facilities optimally. These methods were also cost effective taking into consideration that the researcher was self-sponsored.

3.2.1 Applied Research

Applied research is oriented towards finding solutions to specific behaviour or societal problems (Wabulya, 1998: 9). Applied research is also referred to as action, policy, or evaluation research, and it is conducted to discover new knowledge that can be utilized in real world situation (Busha & Harter, 1980: 8).

Besides, applied research is the basic research also known as pure or academic research. Basic research can be explanatory, and descriptive in nature and is undertaken to generate new knowledge, but it is meant to explain the world as it is and not change it (Wabulya, 1998: 9).

The study therefore aimed at discovering the reasons behind under-utilization of internet facilities at Kenyan Universities and to find solutions to better utilisation of Internet facilities.

3.2.2 Qualitative Research

The research was qualitative. Qualitative research seeks to describe and analyse the values, rituals, symbols, belief and emotions of people and their groups (Nachmias & Nachmias, 1996:281). This type of research was opted for because it seeks to find out reasons behind the problem of the study – under-utilisation of

internet facilities. People's options and views on the other hand cannot be quantified. Additionally, in seeking solutions to problems, qualitative methodology allows the research to "get close to the data", hence developing the analytical, conceptual and categorical components of explanation from the data itself (Weingand, 1993: 19).

The researcher therefore, sought to find out views, attitudes, and opinions of lecturers, students, and library staff as to why internet facilities are not optimally used and what can be done to improve the situation.

3.2.3 Grounded Theory

Grounded theory approach is a qualitative research method that uses a systematic set of procedures to develop an inductive derived grounded theory about a phenomenon (Strauss & Corbin, 1990: 24). The research findings constituted a theoretical formulation of reality under investigation, rather than constituting of a set of numbers, or a group of loosely related themes. Grounded theory aims at building theory that corresponds and illuminates under-utilisation of internet facilities. Grounded theory can also be defined as the discovery of theory from systematically obtained data from social research (Weingand, 1993:21). The formation of theory is allowed to evolve, opening up avenues of possibilities and the unexpected, hence no limitation to the researcher. Responses from open-ended questionnaires and from focus group interview are usually diverse, not uniform, thus the researcher has to take each and every individual response for the final findings. The researcher therefore expected theory(ies) to emanate from the findings of the study.

The research questions that guided the study were:-

- What are the present internet facilities?
- Who are the present and potential internet users?
- Why is internet not maximally used?

The type of data collected differs from that applied in empirical designs. This is because the perspectives and opinions of different individuals are gathered, reported and synthesized. Direct quotations are likely to be included in the reporting process (Weingand, 1996:22).

3.3 AREA OF STUDY

The study was conducted at Jomo Kenyatta Memorial Library, the main library of University of Nairobi and at the United States International University-A (USIU-A), both in Nairobi, which have been discussed in detail in chapter one.

3.4 DESCRIPTION OF POPULATION

The researcher targeted mainly two types of groups whereby the data was extracted from academic staff or lecturers and students. The third group included the professional librarians who have information studies in library as their background.

The academic staff were the lecturers at different cadres, that is, at lecturer level, senior lecturer, Associate and Professor levels.

The students targeted were both undergraduates and postgraduates undertaking masters' degree and postgraduate diploma in different fields.

3.5 SAMPLING STRATEGIES

The researcher selected a few numbers of samples from the targeted population. Three questionnaires were distributed to the lecturers and 17 questionnaires to students. The researcher chose a small number of lecturers to fill the questionnaires, because they were yet to participate in focus group interview which was to take place at both universities (did not but did at USIU-A). The researcher managed to meet five lecturers and a systems administrator.

The researcher managed to perform personal interview with three lecturers at U.O.N. and the head of internet café.

3.5.1 Purposive sampling

Purposive sampling was applied by the researcher. According to (Kothari, 1990: 73), purposive sampling is synonymous to deliberate sampling. The researcher has absolute power to select the sample size suitable for the study (Selltiz et al, 1959: 520). Nachmias & Nachmias (1996:184) reason that purposive sampling gives researchers a chance to select subjectively and a fair representation of the population. The researcher opted for purposive sampling because it meets the needs of the study and allows the researcher to a small sample size suitable for an in-depth investigation.

The intended sample consisted of the teaching staff, students and library staff. A total number of 40 was to be selected for both universities, 30 were to be served

with open-ended questionnaires. The remaining 10 were to be interviewed through focus interviewing method.

The above procedures however did not take place as anticipated. The researcher instead, had to change from one suitable strategy to another to suit the study appropriately. Personal interview was introduced at the eleventh hour, in-order to salvage the study from isolating the key subjects, the lecturers. The move was quite disappointing but the researcher managed to interview three lecturers, a professor in Geography Department, and two lecturers, one, based in Kikuyu campus and the other one in Economics Department.

3.5.2 Snowballing sampling strategy

Snowballing is synonymous with "chain referral sampling" (Bailey, 1994: 96). It is an approach for locating information-rich cases and is conducted in stages. The snowballing strategy relies on the researcher's ability to locate an initial set of respondents with the desired characteristics whereby the individuals are used as informants to identify others with the desired characteristics (Churchill, 1991: 1/2).

The researcher therefore confided with one reliable member of staff, a lecture who identified and approached the respondents. The respondents though not all acknowledged the invitation for the focus group discussion and participated positively.

The snowballing strategy was preferred due to its cost effectiveness in terms of time spent in locating the right respondents and also saves the researcher from embarrassing situations of being let down by the would be subjects.

3.6 METHODS

The researcher applied methodological triangulation to collect data. Methodological triangulation, also known as multiple methods, is a popular strategy whereby a researcher uses different types of methods as no single method can adequately solve any problem under study. The following instruments used in collecting data are discussed in detail.

3.7 INSTRUMENTS

3.7.1 Open-ended questionnaires

Open-ended questionnaires were preferred because they give the respondents freedom of expression. Only the personal data part was structured. The questionnaires consisted of 19 questions, 17 of them being open-ended. The questionnaires were standard for the targeted subjects.

Advantages of the open-ended questionnaires are:

- they may reveal findings that the investigator did not anticipate
- allow the respondents to answer adequately all the details they like
- allow more opportunity for creativity or self-expression by the respondents (Bailey, 1994:121).
- They are bias-free and answers in respondents own words

- It is a convenient way of approaching those respondents who are not easily approachable.

The open-ended questionnaires were distributed as follows:

- 7 lecturers
- 28 students

in both universities. This number totaled to 35 though only 30 had been targeted for the study. The change arose out of unforeseen obstacles such as most lecturers shying away by not responding to the questionnaires.

Each category of the lecturer was not represented, as it had been proposed and intended for the study. The case for students, both postgraduate and undergraduates, was different as they were very cooperative. Their response percentage was above 50, 66% for USIU and 85% for University of Nairobi.

Four assistant researchers assisted in distributing and collecting the questionnaires, two were stationed at each university.

3.7.2 Focus Group Interview Guide

The researcher managed to conduct only one focus group interview at USIU. The environment at the University, both for students and lecturers is very conducive. It is the University's policy to inform the entire community of its Information Technology status upon joining the institution through the campus prospectus manual. This preparation laid a strong and firm foundation for the positive and willing nature of those approached for data collection.

The main aim of conducting an interview was to enable the respondents to express their point of view fully in their own way (Finch, 1990:133). The interview complemented the questionnaire for a clearer picture of the real situation of the research outcome.

The researcher selected the focussed interview. This interview was to be performed with five key respondents from each university. They were to included the following:

- the university librarian
- the head of internet cafe
- one staff in the internet cafe
- one senior lecturer
- one students

Focussed interview takes place with respondents known to have been involved in a particular experience. In this case the selected respondents have experience in one way or another in the internet cafe. Focused interview proceeded on the basis of an interview guide specifying topics related to the research hypothesis or research questions. This kind of interview is focussed on subjects' experiences regarding the situations under study (Nachmias& Nachmias, 1996: 234). The focus group interview however took place at USIU only as the UON participants shied away.

The researcher managed to have five lecturers and a systems administrator for the interview.

The researcher preferred this mode of interview because it permits one to witness personal reactions, and specific emotions among others.

Bailey (1994: 174) outlines advantages of interviews as follows:

- Flexibility – the interviewer can repeat the question to the respondent and the like
- Response rate – interviews have a better response rate than questionnaires
- Control over environment – may be conducted as the respondent wishes
- Non-verbal behaviour – allows the interviewer to assess the validity of answers by observing
- Spontaneity – researcher can answer spontaneous answers
- Only the respondent alone can answer - meaning the respondent cannot cheat on other ideas
- Completeness – the researcher ensures that all questions are answered
- Time of interview – the researcher can record the exact time the interview took place
- Greater complexity of the questionnaire – more complex questions can be used and answered through the researcher clarity.

3.7.3 Observation Guide

Observation, otherwise referred to as 'man-watching', plays a vital role in qualitative research (Slater, 1990:133). The researcher seeks information by merely watching and not asking the subjects any question(s).

The researcher found observation helpful to the study because it compliments the other two discussed methods.

The researcher conducted the study as a participant observer. Bailey (1990: 242) refers to a participant observer as “a regular participant in the activities being observed”. Observation is preferred when one wants to study in detail the behaviour that occurs in some particular setting.

Two weeks were spent in the Internet Café of University of Nairobi only. The researcher could not carry out the procedure as expected, at USIU because it was examination time, and the data would not have been reliable for the report.

The following aspects, were under observation:-

- Who frequents the internet cafe?
- What facilities or services do they contact or make use of? Such facilities are:
 - E-mail
 - Internet surfing
 - Discussion groups
 - CD-ROM
 - Word processing
 - Faxing and others

The observer noted down all the findings observed.

The following are some of the advantages of observations:

- Non verbal behaviours – an observer on the scene can discern on-going behaviour as it occurs
- Natural environment – behaviour of the observed takes place in its natural environment.
- Longitudinal analysis – the observer is able to conduct the study in the subjects natural environment making it possible to prolong the time period of the study.

Observation contributed as a positive ingredient of complimentary agent to other mentioned instruments.

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3.7.4 Interview Guide

The researcher conducted personal interviews to three lecturers who accepted to participate in the study. The focus group guide and the open-ended questionnaire were used to guide the researcher in the procedure and noted down the deliberations.

3.8 QUALITY CONTROL

Unlike quantitative research where there are statistical tests to test validity and reliability, there are no straightforward tests of validity and reliability in a qualitative research. This is the reason why the researcher applied methodology triangulation. Multiple application of the three types of methods to collect data made it possible to achieve quality control.

Purposive sampling, which targeted the highly knowledgeable key respondents played also a major contributing factor as a measure of quality control in the study.

3.9 DATA ANALYSIS

Data analysis was conducted on individual questionnaires and analyzed exhaustively. Respondents' responses were each outlined and each response was assigned a code. Full details of analysis and discussions are found in chapter four. Data analysis was guided by research questions and the researcher used the following procedures recommended by Finch (1990: 140):-

- Initial familiarization with issues arising
- Compiling a list of key themes
- Systematically highlight all the data
- Coding the data's themes
- Refining the coded material
- Describing the emergent findings and interpreting data

3.9.1 Initial familiarization with issues arising

The researcher went through the transcripts to identify those sections that were relevant to the research questions and objectives.

3.9.2 Compiling a list of key themes

The data was classified under the central themes in relation to the research objectives and questions.

3.9.3 Systematic highlighting of data (thematic)

The major topics classified above became the basis of the index that was applied to all the data. The researcher used thematic analysis using highlighter. Thematic procedure categories related themes either by cutting-and-pasting technique or highlighter/pencil crayon method (Lubanga, 1998:54). This method is effectively used for focus groups or depth interview data. It can also be used for open-ended questionnaires and observations.

The data was systematically highlighted by underlining key quotations, explanations, insights and interpretations. The researcher indicated these in the margins.

3.9.4 Coding the data's themes

The highlighted themes represented codes. The researcher, after identifying themes and placing particular topics together coded them accordingly. Reasons to the preliminary coding scheme was done by writing the codes or chosen symbols representing the codes in the margins.

A coding scheme is a tool which flags specific themes or topics in the data to facilitate the counting, searching for sorting by the researcher in order to retrieve them (Lubanga, 1989:59). The codes may be numeric, alphabetic, or any other symbol.

3.9.5 Refining the coded material

The coded data was sorted as a foundation for developing a summary. Report sorting involved identification of variables and establishment of the relationship between them and organizing according to the objectives of the study.

3.9.6 Describing the emergent findings and interpreting of data

The sorted data was narrated, using direct quotations. The most important thing to the researcher was noting important issues, such as intensity. Intensity refers to the frequency of words, phrases or description used in discussions (Lubanga, 1998:55) or appear in questionnaires. The frequency may be interpreted as a 'measure of importance, attention or emphasis'. The researcher took keen note on such issues identify the researcher related concepts and include them in the report.

Linkages between different data were built, attached meanings and significance, imposed order, disconfirming cases and data irregularities. Interpretation from analysis involved discussions from the focus groups questionnaires and what was observed by the researcher. The researcher valued on the findings to seek answers, conclusion and make recommendations.

3.9.7 Presentation of findings

The research objectives and questions played a major role in discussing and interpreting the results, by classifying them accordingly under the subheadings:-

- the present internet facilities
- internet users
- problems with the internet

CHAPTER FOUR

PRESENTATION AND DISCUSSION OF FINDINGS

4.1 INTRODUCTION

This chapter presents findings from the study, which was undertaken through various methods. The methods included questionnaires, personal interviews, focus groups, and observation. The researcher used questionnaires, focus group, and observation guides as instruments, which were used to collect and analyse data. The findings are presented below.

Questionnaires were distributed to both universities: United States International University (USIU), and University of Nairobi (UON). Focus Group Interviews were conducted at USIU. Lack of willing participants at the UON, made the researcher turn to the only possible and best method at the time, the personal interview. Observation was undertaken at UON, but could not be undertaken at USIU because it was examination time.

4.2 UNIVERSITY OF NAIROBI

Twenty open-ended questionnaires comprising of 19 questions each, were distributed to students and lecturers. Seventeen questionnaires were returned making the return rate of 85%. Several questions were asked to the respondents.

4.1.2 Present Internet Facilities

Q.1. What do you understand by the term Information Communication Technology?

To understand more about internet facilities, one has to know what internet is. Two respondents answered no, and another, not fully conversant. The rest of the respondents gave the following responses:

- “It is the use of computers to send and receive messages as well as information”.
- “Methods of communication involving use of scientific/ electronic techniques”.
- “Techniques used to transfer information from point A to B”.
- “Use of computers, fax etc”.
- “Skills of disseminating information”.
- “Information sent and received through computers”
- “It is a kind of information communication technology used worldwide”.
- “Communication through the use of computers”.
- “Highly sophisticated technology system of communication”.
- “These are new mode and form e.g. computer of transferring/disseminating information”
- “Advanced science or skills in information and communication”
- “Transfer of information via computers, satellite, processing, conducting and receiving information through technologically improved systems”.
- “A modern form of communication through technology”.

The above responses represented 80% of those who had an idea of what internet is and those who really knew what internet was all about.

Q2. What type of ICT have you used?

The responses are summarized as follows:

<u>Service</u>	<u>Respondents</u>
e-mail	3
computers	2
internet	1
fax	1

Seven respondents consisting of 41.18% indicated that they had never used any type of information communication technology (ICT) as shown in the table below, which also is shown graphically by the pie chart after the table:

Table 1: Type of Internet Facility used (UON)

Type of ICT used	No. of Respondents	Percentage (%)
e-mail	3	17.65
Computers	2	11.76
Internet	1	5.88
Fax	1	5.88
None	7	41.18
No response	3	17.66
Total	17	100



Figure 3. Type of Internet Facility Used

Table 1 indicates that 41.17% of the respondents have used at least one type of Information Communication Technology, and a percentage of 58.83 have never used any type of the ICT. This may have been attributed to ignorance, lack of awareness of just technological phobia.

Q3. Do you have a computer?

Fifteen (15) respondents (88.24%) did not possess a computer, while two (2) respondents (11.76%) possessed a computer.

Table 2: Ownership status of computers (UON)

	No.	%
With computer	2	11.76
Without computer	15	88.25
Total	17	100

Q4. If yes, are you connected to internet?

The following were their responses:

- “Currently, I would not need one because of costs associated with it, but in the future, I would need one due to efficiency associated with it”.
- “There is not even a telephone line where I stay”.
- “Yes, because there is a lot of informative web-site which to surf”.
- “Yes, for my filing of documents, browsing of internet etc”.
- “Yes, to help me print and store necessary information”.
- “Yes, it makes works easier. I can be able to do my assignments at a fast rate”.
- “Yes, because I would love to be connected to the internet”.
- “Yes, for data processing information search on the internet”.
- “Yes, saves time in communication, easily accessible, efficient”.
- “Yes, I need one, first to familiarize myself with the basic concepts of computer operations - why because of poverty (lack of income) even I cannot afford the subsidized training. These to provide with computer. I will greatly appreciate and pray for interceding for Gods blessing even for generations to come”.
- “I need to know what is all this about”.
- “Yes, currently I am a postgraduate student and I have had to rely on other people to do my academic work which I find quite inconveniencing”.
- “Yes, because I would love to get lots of information from all over the world and get other services done e.g. typing and printing, calculations, etc”.
- “Yes, to improve the quality of processing delivering and storing of data”.

- “Yes, would facilitate my research work and enable me to do my typing. I would also be exposed to more information from other authorities elsewhere”.

Q5. If not, would you need one? Please explain.

The respondents left this question blank.

Q6. Are you interested in using internet?

The following were the responses outlined by the respondents.

- “Yes, I am because it is fast and cheap compared to other methods of receiving and sending information”.
- “Yes, to connect me to other parts of the world for any business transaction and to help me learn what developments occur outside Kenya”.
- “Yes, it is firm”.
- “Yes, for doing academic research and other types of information”.
- “Yes, easier to access information than books. More widely connected hence better choice faster way of accessing information”.

Ten other respondents (58.82) were interested in using internet, only that they did not elaborate since only the 'no' option required the respondents to give reasons. The total number of those interested in using internet is (88.24%). One respondent (5.88%) gave a "Not Applicable" answer while the other one (5.88%) did not respond to the question.

Q7. Are you aware of any internet facilities at the university?

Q8. If yes how did you learn about it?

The two questions were merged and the respondents gave the following answers:

- Five of the respondents (29.41%) – “Yes, through my friends”.
- Six (35.3%) - “Yes, through library notice board”.
- Two (11.76%) – “Yes, through advertisement”.
- One (5.88%) – “No, not applicable”.

Table 3 : Awareness of Internet facilities(UON)

	No	Percentage
Respondents aware of internet facilities	14	82.35
Respondents not aware of internet facilities at the university	3	17.65
Total	17	100

Q9. How equipped is the Internet Café?

The respondents said the following:

- “Well equipped”.
- “About 7 computers are connected to internet”.
- “Poorly”.
- “Not perfect”.
- “It has 9 computers”.
- “Not well equipped, we have less than 10 computers”.

- “Poor, computers are too few and there are no adequate peripheries - printers etc”.
- “Not fully equipped”.
- “5 computers”.
- “Not Applicable, was given by 2 respondents and two others, had no idea”.

Q 10. Are the computers adequate for use at the Café?

Twelve respondents (70.58%) answered no, one respondent (5.88%) yes, one (5.88%) had no idea and two (11.76%) Not Applicable.

Q 11. If you answered no in question 7, would you be interested in learning about the existence of an Internet Café at the university? Give reasons.

No respondent answered this part of the questionnaire.

4.2.2 Internet Users

To determine the present and potential internet users, five questions were posed.

The first question in this part, which was question 12.

How often do you use the internet?

The responses were as follows: -

- “At most twice a week”.
- “Twice”.
- “Twice a week”. (2 respondents)
- “Once a week” (2 respondents)
- “3 - 4 times a week”.

- “Not quite often”.
- “Everyday”.
- “Once in a while”.
- “Rarely”.
- “Sporadically”.
- “Not Applicable”.
- “Never used”. (2 respondents)
- “Not Applicable in the university”.

Two other respondents were non-committal, they either have never used internet or simply did not have any idea of what was required of them, or did not simply want to answer.

Q 13. For what reasons do you use the internet?

The following are the reasons outlined by the respondents for using the internet:

- “For research”.
- “Sending e-mail and surfing”.
- “Sending mails and receiving mails for literature materials”.
- “Mostly sending and receiving mail and sometimes search on the web”.
- Just for communicating with friends”.
- “To send and receive mails and acquire information of any kind”.
- “E-mail, information search, news”.
- “Sending and receiving mail”.
- “To get mail from friends”.
- “For academic information”.
- “Browsing of books”.

- “I shall after I have learnt how to use it”.
- “Not Applicable, by 3 respondents”.

Q 14. What other services does the internet provide?

Other services provided by internet as mentioned by the respondents were:-

- “Shopping and advertising services as well as electronic payment”.
- “Surfing the web”.
- “Jokes, greetings and general browsing”.
- “All services, it has information on practically everything”.
- “Entertainment and sport news”.
- “Games”
- “Information about products existing in the world”
- “E-mail”.
- “E-commerce”.
- “Sending and receiving e-mails”.
- “I do not know”.

Q15. Are the services of benefit to you? Please explain.

The responses to the above question were as follows: -

- “Only a few benefit because they are too expensive e.g. browsing for ½ hr. is KSH. 150”.
- “No, because I do not transact in any business”.
- “Yes, it is informative and more even cheap”.
- “Yes, I get to do my assignments faster, because of easy acquisition of materials and availability”.

- “No, because I do not surf”.
- “Yes, I get to learn more about the world”.
- “Yes, they give vital information”.
- “Yes, complement my studies”.
- “Have never benefited me”.
- “They would be”.

Q 16. What internet services do you use mostly?

The mostly used internet services by the respondents are presented in table below.

Table 4: Most commonly used Internet services(UON)

Services mostly used	No. of respondents	Percentage
e-mail	8	47.06
e-mail and surfing	2	11.76
Yahoo	1	5.
Not Applicable	3	17.65
Non-committal	3	17.65
TOTAL	17	100

4.2.3 Problems with the Internet

Q 17. What problems do you encounter when using the internet?

The following were the problems encountered by respondents when using the internet:

- “Failure to understand some commands”
- “Very inefficient browser –slow”.

- “Breakdown and mostly too slow and unable to open the inbox”.
- “Queuing”.
- “The computers in Jomo Kenyatta Memorial Library are slow, problems with servers”.
- “Viruses and they are slow sometimes the mails are returned”.
- “Congestion, taking too long to login”.
- “Accessing, operating”.
- “I have dared not use it”.
- “Never encountered since I have never used it”.
- “Not so much skilled. A question of being illiterate in computers”.
- “Not Applicable”. (by 3 respondents)

Q 18. How do these problems get solved?

The respondents listed the following regarding how the above mentioned problems are solved:

- “You tell me”.
- “Efficiency in servicing”.
- “Have own server at Jomo Kenyatta Memorial Library”.
- “Introduce more computers”.
- “Use the computers very early when there is no internet traffic, wait until the servers are okay, hope that the campus gets the latest software”.
- “Resort to external (outside campus) internet cafes”.
- “By waiting”

- “Need to be enlightened more on the issue, efficiency to reduce queuing/waiting for other users”.
- “I do not have any clue”.
- “I have no idea”.
- “I do not know”.
- “Not Applicable”. (By 2 respondents)

Q 19. What suggestions would you offer to the improvement of the usage of internet facilities at the university?

The respondents gave the following responses: -

- “More computers should be introduced”.
- “Increase the computers and there should be services also during the weekends, also the server is very slow indeed”.
- “More computers and make it free of charge”.
- “Get updated on the latest software (for faster access) , get more computers and printers (there is only one)”.
- “Improve the services by getting a faster connection (increase bandwidth) and increasing the number of computers in order to overcome the problem of long queues and increase the number of computers periphery c.g. printers”.
- “Increase the number of computers in the café, teach people how to use the computer”.
- “To make them cheaper in order for us students to access the internet easily without too much strain in our pockets”.

- “The prices should be slashed to reasonable levels for all students to afford”.
- “Make it more competitive, keep to the latest modernity/technologically”.
- “Offer free of charge in core units in degree programs”.
- “First I should learn how to use it, then give suggestions”.
- “Let all students get access to them easily”.
- “Should be many in number and fast and less expensive”.
- “Improve access, quality and diversity of sources”.

4.3 UNITED STATES INTERNATIONAL UNIVERSITY – AFRICA (USIU-A)

16 questionnaires were distributed at USIU, and 12 were returned making the return rate at 75%. Several questions were posed to the respondents, and are outlined below before every analysis.

4.3.1 Internet facilities

Q 1. What do you understand by the term Information Communication Technology?

The respondents gave the following responses as to what they understood by the term Information Communication Technology (I.C.T) :-

- “Communication through computers by using the internet”.
- “A way of sending information to end-users”.
- “Passing of information through using computer technology”.
- “Not much ---I assume technologies that assist communication”.
- “The technology that is aimed at distributing information”.

- “Computers”.
- “Facilities like internet, e-mail and so on (that is my understanding)”.
- “Knowledge and electronic gadgets used collectively (each complementing the other) in transmission, gathering, storage of information”.
- “Technology that allows information to be exchanged faster and with ease”.
- “Information access/disseminate devices”.
- “New technologies for managing data and information transfer”.

Q 2. What type of ICT have you used?

On the type of I.C.T they have ever used, the respondents listed the following:

- “Nescape navigator and communication”.
- “IBM computer”.
- “E-mail”.
- “A personal computer and a laptop”
- “Computers, internet, e-mail and the like”
- “Personal computer”.
- “E-mail, faxes”.

Q 3. Do you have a computer?

Out of the response rate of 12 questionnaires, eight respondents had a computer and 4 did not. Five respondents are connected to internet while seven are not.

Table 5, below illustrates the responses given by the respondents.

Table 5: Ownership status of computers (USIU)

Respondents	No.	%
With computer	8	66.67
Without computer	4	33.33
Total	12	100

Q 4. If yes are you connected to internet?

Q 5. If not, would you need one? Please explain.

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The following were the responses for the above two questions:

- “Currently since I am about to graduate from campus, it is not a necessity as such. Probably in the current future”.
- “The internet is very important as it regards finding information about different issues and moreover you get perspectives”.
- “I would definitely need a computer to enable me do my work more efficiently”.
- “Yes, it is cheaper than commercial bureaus”.
- “Computers are essential for doing so many tasks especially for a university student e.g. word processing etc. In addition they can provide entertainment e.g. games”.
- “Yes, internet connection helps in enhancing knowledge on various issues around the world and would also use it for my assignments”.
- “Yes, I would need one for my personal use”.
- “Since I have access to the internet at USIU-A I have no pressing need at home”.

Q 6. Are you interested in using the internet?

All the respondents according to their responses were interested in using the internet.

Q 7. Are you aware of any internet facilities at the university?

Q 8. If yes how did you learn about it?

The researcher merged the above two questions to give a better flow of the respondents' answers, which appear below. The responses are also represented graphically in table 6, to give a better understanding.

- “Yes, in class”.
- “Yes, it is available to all students”.
- “Yes, through an advertisement”.
- “Yes, from the catalogue”.
- “Yes, through my computer consultants”.
- “Yes, from application forms and the school catalogue before joining USIU-A”.
- “Yes, in our university a course known as Information Systems is a requirement”.
- “Yes, I rang Computer Science and they connected me”.
- “Yes, through the IT technicians”.
- “Yes, it is general knowledge at USIU-A”.
- “Yes, I supervise its operation”.

Table 6: Awareness of Internet Facilities (USIU)

Respondents	No.	%
Aware of internet facilities at University	11	91.67
Not aware of internet facilities at University	1	8.33
Total	12	100

Q 9. How equipped is the Internet Café?

Q 10. Are the computers adequate for use at the café?

The responses are outlined below, followed by table7, which illustrates the status of USIU.

- “Good enough; no”.
- “According to other standards in the country, I would say it is efficient; yes”.
- “Fully equipped; no”.
- “Satisfactory; yes”.
- “It is in the computer laboratory though I hardly use it; I think more are required”
- “Well equipped; adequate”.
- “Good; yes”.
- “Adequately; no”.
- “Fairly equipped; not always by sufficient”.
- “Not Applicable”.

Table 7: Are the computers adequate?

Respondents who think	No.	%
Computers are enough	6	50
Computers are not enough	5	41.67
Non committal	1	8.33
Total	12	100

Q 11. If you answered no in question 7, would you be interested in learning the existence of an internet café at the university? Give reasons.

All the respondents were aware of the existence of the internet café at USIU hence this part did not apply to them.

4.3.2 Internet Users

Q12. How often do you use the internet?

The following was the frequency of internet usage according to the respondents responses:

- “2 to 3 times a week”.
- “Almost 4 times a week”.
- “At least twice a week”.
- “Once a week”.
- “Everyday”.
- “Rarely”.
- “Daily”.
- “Almost once a week”.

- “Twice a week”.
- “Often”.

Q 13. For what reasons do you use the internet?

The reasons for using internet were outlined by the respondents as:

- “Research papers, chatting and e-mailing friends”.
- “To get information for my course assignments and for personal entertainment”.
- “To send e-mail”.
- “Communication ((e-mail)”.
- “To find information, to read news and send e-mail messages”.
- “New information”.
- “Mail, research and update (software), discussion groups”.
- “E-mail, literature surveys and abstracts”.

Q 14. What other services does the internet provide?

The respondents’ responses were:

- “Surfing”.
- “Online shopping, and online registration”.
- “Checking for scholarships, new products in the market, jokes”.
- “Information”.
- “Thousands of other services – selling, consulting etc”.
- “Cruising sites e.g. yahoo”.
- “E-commerce”.
- “The e-mail services”.
- “File downloads, browsing, business opportunities”.
- “I have not explored it”.

Q 15. Are the services of benefit to you? Please explain.

The benefits of internet were outlined as follows:

- “You can keep in touch and easily gather materials”.
- “Yes, they are of benefit because you do not have to queue”.
- “Yes, it is cheaper than using the phone”.
- “It is a quick way to do things that take weeks without”.
- “Yes, they make communication easier”.
- “No, require use of visa cards which I do not have”.
- “Yes, because I need information for my various course and to communicate via e-mail”.
- “Yes, instant communication/instant response availability of scholarly information”.
- “E-mail, literature surveys and abstracts”.
- “Yes, long distance communication”.
- “Yes, e-mail, research, update software, discussion groups”.

Q 16. What internet services do you use mostly?

The services outlined below are the most used ones according to the responses given by the respondents:-

- “E-mail”.
- “Browsing”.
- “Reading jokes”.
- “Yahoo search”.
- “Netscape communication”.
- “Literature survey and abstracts”.
- “FTP, HTTP”.

4.3.3 Problems with Internet

Q 17. What problems do you encounter using the internet?

The respondents outlined the following problems experienced when using the internet:-

- “Slow connection to a site”.
- “Logging in, server goes off”.
- “Line is poor, hard to connect”.
- “Too slow at peak working hours and too much unnecessary services/ information”.

Q 18. How do these problems get solved?

The above mentioned problems are solved by various ways as outlined here below by the respondents:-

- “By opening one site only at a time. No multi-talking on the internet is allowed”.
- “I have never experienced any solutions but the best options using the internet very early in the morning or late in the evening when there is less traffic”.
- “By waiting, getting a direct connection, using the computer at odd hours”.
- “You just wait”.
- “They are not”.
- “Increased lines to improve download speed”.
- “Usually the user has to wait and try later when connection is more readily/easily achieved”

- “I go to the computer room very early, very late in the day or on weekends. But I guess we need another server because Africa-online is over subscribed”.
- “Qualified personnel at hand”.
- “Plans underway to increase the bandwidth”.
- “I do not know”.

Q 19. What suggestions would you offer to the improvement of the usage of internet facilities at the university?

The respondents gave the following suggestions, which would improve on the usage of internet facilities at the university: -

- “Installation of a bigger server or purchase of more space on Africa online”.
- “Get a better, more efficient net server”.
- “It is too expensive they should make it cheaper”.
- “Increase the number of computers”.
- “Faster connection, more helpful staff”.
- “More computers, better server/service”.
- “Make the internet facility faster”.
- “More access-prompt connection”.
- “Get more computers, get connected to an independent server and offer hands on computer literacy”.
- “Individual to get more knowledge”.
- “Change of attitudes and view of internet government to reduce tariffs for institutions”.

4.4 FOCUS GROUP INTERVIEW

The focus group interview was conducted at USIU lecturers' lounge on 14th March 2000. The researcher managed to get the systems administrator and five lecturers. The researcher applied the snowballing strategy to get key respondents to participate in the focus interview.

The Focus Group Interview was facilitated by the researcher, using the interview guide. The topic of discussion was introduced and the interview proceeded as planned.

The term Internet, was first defined and the participants came to a consensus that a general definition of internet, be "A network to communicate from one place to another through computers". Most lecturers used internet for academic purposes such as, searching for information for research, study, and for writing proposals, papers, and thesis.

One lecturer based in Upper Kabeto Campus (of Agriculture & Veterinary Sciences), who is a part-time lecturer at USIU relied heavily on internet for commercial purposes. It was easy to have chemicals supplied to him via internet and that before being supplied, he had had quotations from different willing suppliers. Internet thus availed wide selection of diverse information.

The Systems Administrator outlined the services provided to users as:

- word processing
- e-mail services

- browsing
- printing

The researcher learned from the participants at the Internet Café is what is known as Computer Laboratory. USIU has two practical laboratories A and B. Lab A has twenty-four computers while Lab B has eighteen computers, totaling all to 42 computers. The students have to book the labs, before using the internet services.

In addition to the practical laboratories, there is one teaching computer lab with eighteen computers. This lab is normally for students enrolled in Information Systems course.

The Systems Administrator informed the participants that all students enrolled for information systems course are eligible to use the computer labs. All other students should pay KSH. 2500/= per quarter to be allowed access to the computer labs (USIU operates on quarter basis, and there are four quarters in an academic year).

On the internet services are made available to the users, the participants informed the researcher that, the information on computer labs is contained in the students' brochures and that every student is aware of the services. It was also noted that outsiders are not allowed to use the computer labs.

Most frequenting users were the undergraduates. Few postgraduate students used the labs because they were evening students and most were full-time employees

elsewhere. Most users complained that the labs were not opened all the time since they operated between:

8 am - 11 p.m. Monday to Thursday

8 am - 5 p.m. Fridays

9 am - 4 p.m. Saturdays and

The computer labs were closed on Sundays and public holidays.

Other complaints included the following:

Few printers

Booking not fair

The system once crashed causing panic to users

There were Students Lab Assistants who attended to students' complaints and if they failed to solve their problems, the Systems Administrator would then be informed and attend to them.

The researcher was informed that the internet is optimally used by the users, because it was difficult to find a computer free. The bookings were always full meaning that the facilities were optimally utilised. The computer labs were adequately equipped taking into consideration the ratio of students to computers was 1:1 or when they were heavily used, the ratio was 2:1

The computers are meant for academic purposes only but the students were not limited to how they used the computers. The USIU on the other hand had policies and procedures to guide all users.

The participants suggested that the internet services should be improved. It was also highlighted that the economics of internet were in themselves a hindrance to advancement in Africa. There was more information on the internet but very little on African issues and if there was any, very scanty.

4.5 OBSERVATION AT UNIVERSITY OF NAROBI

Observation was done for the month of January instead of March. This was because the server was always on and off during the month of March. The other factor that made observation not to be possible for March was that the students were preparing for their semester exams making it quite unreliable.

The internet café has 3 booking books for:

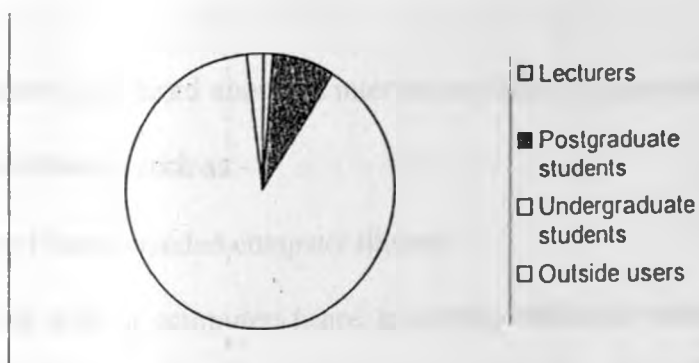
- Undergraduates
- Postgraduates/staff
- Outsiders

The books have columns for:

- | | |
|--|--------------------------------|
| • Date | • Amount charged .The |
| • User's name | charges for different |
| • Department | services differ for all groups |
| • Category | (refer to appendix). |
| • Type of service | • Id No. |
| • Duration of time (time in
and time out) | |

Table 8: Categories of users (UON)

Category of users who visited the internet cafe	No
Lecturers	5
Postgraduate students	40
Undergraduate students	444
Outside users	10
Total	499

**Figure 4. Category of users**

There were 45 people who visited the Internet Café during the month of January: 5 were academic staff (lecturers) while the rest were postgraduate students. Twenty-nine of this group surfed the internet while 16 used e-mail services.

Ten outsiders visited the Internet Café during the month of January. Five consulted e-mail while the rest surfed on the internet.

Undergraduates users totaled 444. The breakdown of applications used by the students was as follows:

- Surfing on the internet
- E-mail Pegasus
- E-mail web based
- Chatting

4.6 PERSONAL INTERVIEW AT UNIVERSITY OF NAIROBI

The researcher conducted personal interview with three lecturers who confided that they lacked hands-on experience with computers.

The lecturers had heard about the internet but feared to approach the internet café due to various reasons such as:-

- Fear of being branded computer illiterate
- Phobia of using computers hence, preferring traditional teaching methods.

The lecturers welcomed the idea of sensitization since they would appreciate participating in the new technological era of information superhighway.

Being trained on how to use internet would contribute positively to the teaching and research at the University.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 CONCLUSIONS

The study aimed at

- establishing reasons why there was underutilisation and
- propose for better use of internet facilities.

The following are conclusions drawn from the findings of the study carried out:

- The response from both universities reflected a varying degree of adaptation of information communication technology. The respondents from USIU demonstrated a deeper understanding/exposure to internet. Most university of Nairobi respondents understood internet as e-mailing and hence spent a lot of time e-mailing rather than searching for relevant academic information to help in their study.
- Only a few lectures and postgraduate students visited the internet café. This could be proved by the daily statistics of attendance as compared to undergraduate i.e. 45 (both lecturers and postgraduate) to 444 (undergraduate students).
- Most users who responded to the questionnaires had at least an idea of what internet was.
- Email was the most commonly used internet facility and majority of users thought e-mail was internet.
- Respondents were eager to use the internet because of its various benefits such as

- a faster and cheap method of sending and receiving information,
 - connecting users to other parts of the world for business transactions and learning other developments outside Kenya,
 - for academic research,
 - being easier to access than books.
- There were only seven computers at the university of Nairobi connected to internet and which were meant to serve a population of about 17,000; this is an impediment to promoting effective internet use.
 - Servers at both universities were too slow to access the internet.
 - Internet charges for students and other users were high and this discouraged them from making use of the internet.
 - The students complained of having only one printer at both universities, which was inadequate to meet their needs.
 - Most users were computer illiterate.
 - Software used on computers was outdated and slow.
 - There were frequent breakdowns of the servers making internet unreliable.
 - That majority of the respondents, 82.35 % were aware of the internet facilities at University of Nairobi through various means such as notice-boards, friends, advertisements
 - That the internet café was poorly equipped especially at the University of Nairobi (which had seven) but adequately equipped at USIU (which has 42). It was also noted that the computers were not enough for use in both universities.
 - Visits to internet café especially at the University of Nairobi depended on the individual (personal interest) and some visited from once a week to daily.
 - Services such as chatting box (discussion groups) were rarely used.

- The most common internet problems outlined by the users were as follows:-
 - communication breakdown between the users and computers
 - few computers leading to large queues hence wastage of time

5.2 RECOMMENDATIONS

The following recommendations have been proposed for the improvement of the current situation of underutilization of internet facilities at universities. Proper and better utilization of internet facilities at universities would be achieved if the following proposed recommendations are adopted:-

Recommendation 1: User education

Users education on internet should be introduced. This education would create awareness. It is under the umbrella of user education that basic training on computers should be introduced, so as to motivate to use the internet. This training could be made possible by introducing basics learning of computers in the regular degree programmes at the universities. Creating awareness could be made possible through various means such as: circulating newsletters to the university community and holding meetings and workshops.

Recommendation 2: Installation of modern technology

The universities Internet Cafes should strive to install the latest software to keep abreast with the current technological change worldwide. Increase of bandwidth of both Internet Cafes should be considered to make internet connectivity faster. This is more expensive but it is worth the cost.

Recommendation 3: Adequate hardware

More computers should be introduced especially at the University of Nairobi to cope up with the large population of both students and staff. More printers should be introduced as both universities have one each which are inadequate to meet the users' needs.

Recommendation 4: Subsidized services

Services fees should be subsidized so that users, especially, the students can be able to access internet more often, this could also be achieved by incorporating affordable charges in the tuition fees, thereby making it easier for students to access internet.

Recommendation 5: Provision of computers

Lecturers, especially of university of Nairobi should be availed with computers in their offices if funds allow. This would enhance and increase their academic input and output to the university respectively.

Recommendation 6: Decentralization of the Internet Café

The Internet Café should be independent of the Institute of Computer Science. The Internet Café has been under direct management of the Institute of Computer Science, based at Chiromo Campus. The running of the café can not be fully effective because any major decision has to await the approval of the Institute. The priorities of the Internet Café therefore come second to those of the Institute's. The bureaucracy of the chain of command becomes also a hindrance to the Café's priorities.

The outcome of proper and effective use of internet improves the research by both teaching staff and students. Internet use makes it possible for the university community to compete worldwide, making global village a reality.

If the proposed recommendations are put in place the following would be the expected outcome :

- ◆ Improved teaching methods and skills
- ◆ Improved research skills
- ◆ Improved students performance
- ◆ More accessibility and acquisition of information
- ◆ Availability of funds and sponsorship for academics and researches
- ◆ Coordinating and sharing of research findings globally

(refer to figure 2: The expected conceptual framework of optimally utilized internet facilities at universities).

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The researcher recommends the following areas for further research:

- Challenges and strategies of internet use in African academic settings
- Impact of internet to African universities
- Why there is scanty information on African issues on the internet

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**APPENDIX I: AN INTRODUCTORY LETTER FROM THE
DIRECTOR, EASLIS, TO UNIVERSITY OF
NAIROBI**



**MAKERERE UNIVERSITY
EAST AFRICAN SCHOOL OF LIBRARY
AND INFORMATION SCIENCE**

18th February 2000

The University Librarian
Jomo Kenyatta Memorial Library
University of Nairobi
P. O. Box 30197
NAIROBI.

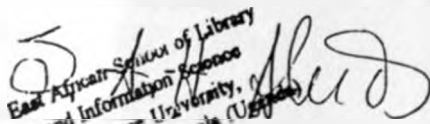
Dear Madam,

RE: NJIRAIANE, DOROTHY M. – 98/HD/1126

This is to introduce to you Ms Njiriane Dorothy a student of this School pursuing a Masters degree in Library and Information Science. She is carrying out her research on **Underutilization of Internet Facilities at Universities: A Case Study of JKML University of Nairobi and United States International University – Africa (USIU-A).**

Any assistance extended to her is highly appreciated.

Yours faithfully,


East African School of Library
and Information Science
Makerere University, Uganda
Syed Ameer Haider Abidi
D I R E C T O R

APPENDIX II: AN INTRODUCTORY LETTER FROM THE DIRECTOR,
EASLIS, TO UNITED STATES INTERNATIONAL
UNIVERSITY-AFRICA (USIU-A)



MAKERERE UNIVERSITY

EAST AFRICAN SCHOOL OF LIBRARY
AND INFORMATION SCIENCE

February 18, 2000

The Chief Librarian,
United States International
University-Africa (USIU-A)

Dear Sir,

This is to introduce to you Ms Dorothy Njiraine Reg No 98/U/HD/1126 who is a bonafide student of Master of Science in Information Science degree course at the East African School of Library and Information Science, Makerere University. The student has been asked to carry out a research study in your organization on Underutilisation of Internet facilities at Universities: A case study of United States International University and Jomo Kenyatta Memorial Library – University of Nairobi.

It will be appreciated if you kindly rendered all possible assistance so that she is able to write a dissertation by May, 2000

Thank you

Yours sincerely,

East African School of Library
and Information Science
Makerere University,
P.O. Box 7062, Kampala (Uganda)

Dr. Syed A.H. Abidi,
DIRECTOR.

APPENDIX III QUESTIONNAIRE FOR LECTURERS AND STUDENTS

Dear Respondent,

The researcher is a student at Makerere University and is undertaking a study on **Underutilisation of Internet Facilities at Universities: A case study of United States International University-Africa and Jomo Kenyatta Memorial Library, University of Nairobi.**

You are therefore requested to spare some time and respond to this questionnaire. All information received will be treated with utmost confidence.

Thank you.

GENERAL INFORMATION

Department:

Faculty:

Position:- Staff:

Student: Undergraduate Postgraduate

Age:

Sex:

INTERNET FACILITIES

1. What do you understand by the term Information Communication Technology (ICT)?
2. What type of ICT have you used?
3. Do you have a computer? Yes No
4. If yes, are you connected to Internet?

5. If no, would you need one? Please explain.

.....

6. Are you interested in using Internet? Please explain.

.....

7. Are you aware of any Internet facilities at the University?

Yes	No
-----	----

8. If yes, how did you learn about it?

9. How equipped is the Internet café?

10. Are the computers enough for use at the café?

11. If you answered no in question 7, would you be interested in learning about the existence of an internet café at the University? Give reasons.

.....

INTERNET USERS

12. How often do you use the internet?

13. For what reasons do you use the internet?

14. What other services does the internet offer?

15. Are the services of benefit to you? Please explain.

.....

16. What internet services do you use mostly?

PROBLEMS WITH INTERNET

17. What problems do you encounter when using the internet?

.....

18. How do these problems get solved?

.....

19. What suggestions would you offer to the improvement of the usage of internet facilities at the University?

.....

APPENDIX IV OBSERVATION GUIDE

The following will be under observation by the researcher:-

- Category of users who visit the internet café, whether undergraduates, postgraduates, staff(professional and non-professional, and academic), and outside clients.
- The internet facilities used by the users, such as:-
 - ◆ E-mail
 - ◆ Internet surfing
 - ◆ Discussion groups
 - ◆ CD-ROM
 - ◆ Word processing
 - ◆ Faxing
 - ◆ Others -(specify)

APPENDIX V FOCUS GROUP/PERSONAL INTERVIEW GUIDE

1. What internet services do you offer to your users?
2. How equipped is the internet café?
3. Are the computers used for any other purposes?
4. How do you make the services offered available to the users?
5. Who are eligible to internet café?
6. What services do the users use mostly?
7. Who are the most frequent users in the internet café?
8. Do users raise any complaints on internet services offered?
9. What are the most complaints raised?
10. How do you attend to them?
11. Do you think the internet is optimally used by the users as it should be?
12. Give your opinion/ general comment on the usage of internet.

**APPENDIX VI THE UNIVERSITY OF NAIROBI INTERNET CAFE
MANUALS FOR DIFFERENT TYPES OF USERS**

UNIVERSITY OF NAIROBI

LIBRARY ELECTRONIC INFORMATION CENTRE (LEIC)

CHARGES FOR STAFF & P/G

1. DAILY CHARGES

1. **Internet Access** - Ksh.150.00 p/hr. includes printing up to 2 pages
Printing - Ksh.5.00 p/every additional page
2. **e-mail**
Sending - Ksh.40.00
Receiving - **Free**
- Ksh.5.00 p/every additional page
Attachment
Sending - Ksh.100.00
Receiving - Ksh.50.00 for 4 pages
- Ksh.5.00 p/every additional page
3. **Word-processing** - Ksh.70.00 p/hr. includes printing up to 2 pages
Staff assisted - Ksh.100.00 p/hr.
Printing - Ksh.5.00 p/every additional page
4. **CD-ROM/Library databases** - **FREE!!!**

11. MONTHLY CHARGES

1. **Internet Access** - Ksh. 2,600.00 for 1 hr. p/day
Printing - Ksh. 5.00 p/every additional page
2. **e-mail** - Ksh. 400.00 (Eudora or healthnet)
3. **Internet & Email** - Ksh. 3,600.00 for 1 hr. p/day
4. **Word-processing** - Ksh.1,500 for 1 hr. p/day, includes printing up to 4 pages
Staff Assisted - Ksh. 2,000 for 1 hr. p/day
Printing - Ksh. 5.00 p/every additional page
5. **CD-ROM** - **FREE !!!**

UNIVERSITY OF NAIROBI

LIBRARY ELECTRONIC INFORMATION CENTRE (LEIC)

CHARGES FOR OUTSIDERS

DAILY CHARGES

1. Internet access - Ksh. 200 p hr. includes printing up to 2 pages
- Ksh. 5 p page for every additional page
2. e-mail
 Outgoing - Ksh. 10.00
 Receiving - Ksh. 20.00 for 2 pages
 - Ksh. 10.00 p page for every additional page
3. Wordprocessing - Ksh. 100 p hr
 Mail distribution - Ksh. 150 p hr
 Printing - Ksh. 2 p page
4. CD-ROM/Library databases - Ksh. 100 p hr.

Monthly

1. Internet Access - Ksh. 3700.00 for 5 hr. connection p week
2. e-mail - Ksh. 500.00
3. Wordprocessing - Ksh. 2000.00 for 1hr. p day
4. Internet & e-mail - Ksh. 4200.00

Membership

- Registration - Ksh. 200
Monthly Subscription - Ksh. 6000

Training

- Internet - Ksh. 200 p hr
e-mail - Ksh. 200 p hr

11. MEMBERSHIP FOR ALL SERVICES

For 1 hour p/service p/day

Registration - Ksh. 150.00
Monthly Subscription - Ksh. 4,300.00

V. TRAINING

Internet Use - Ksh. 130 p/hr.
e-mail Use - Ksh. 130 p/hr.

UNIVERSITY OF NAIROBI
EAST AFRICANA COLLECTION