POLICIES AND LEGISLATION FOR INTERNET ACCESS AND USAGE IN ZAMBIA

By

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A dissertation submitted to the University of Zambia in partial fulfilment of the requirements for the award of Master of Engineering ICT Policy, Regulation and Management

THE UNIVERSITY OF ZAMBIA

SCHOOL OF ENGINEERING

LUSAKA

2018

DECLARATION

I, **Nchimunya Hanyama**, do hereby declare that this dissertation is my own work, which to the best of my knowledge has not been submitted for any degree or master's programme at this university.

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Signature Date

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Supervisor Signature Date

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APPROVAL

This dissertation by **Nchimunya Hanyama**, entitled 'Policies And Legislation For Internet Access And Usage In Zambia' has been approved as a partial fulfilment of the requirement for the award of the Degree of Master of Engineering ICT Policy, Regulation and Management by the University of Zambia**.**

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ABSTRACT

Zambia has a number of Information and Communication Technology (ICT) policies and legislation in place which address internet usage and access such as the Zambia National ICT policy and the ICT Act of 2009 and the Electronic Communication and Transaction Act of 2009.

The aim of the study was to ascertain whether the current policies and legislation are applicable in addressing internet access and usage in Zambia.

The objectives of the study was to investigate policies and legislations implemented for internet access and usage, the roles of ICT regulatory agencies and identify stakeholders in implementation of internet access and usage.

The study used purposive sampling techniques to obtain appropriate respondents. Structured questionnaires were administered to key stakeholders such as ministry tasked with ICT, the regulator, mobile network operators (MNOs) and internet service providers (ISPs). The research revealed that the regulator and other stakeholder acknowledged that Zambia has policies for implementation of internet usage and access. Furthermore, the results showed some lapses in the way the stakeholders understood the role of the regulator and its capacity to regulate the MNOs and ISPs.

The findings revealed that, based on the objectives and the research questions, there is: lack of coordination between the ISPs & MNOs and the regulator; lack of collaborations between the sectors, ISPs, MNOs, Regulator and the line ministry tasked with the responsibility of ICT policy implementation; unclear information as to whether Zambia has specific internet policies and the need for ICT policy awareness and periodic reviews to address the emerging issues. However, there is need to operationalise ICT policies which can lead to the transformation in the technology of the various sectors.

Keywords

Mobile Network Operators, Internet Service Providers, Policies, Legislation, Regulators, Internet Access, Government.

DEDICATION

This dissertation is dedicated to my wife, Khuta Hara-Hanyama, son Emmanuel Kwesha Hanyama and daughter Esther Khumbo Hanyama. It is also dedicated to my mother Exildah Mwewa and my late father, Davison Hanyama. Last but not the least, I dedicate this dissertation to my brothers and sisters and my parents-in-law, Mary Lungu-Hara and Matthews Collins Hara.

ACKNOWLEDGEMENT

I would like to express my sincere gratitude to my supervisor, Dr. Dani Banda, from the University of Zambia, School of Engineering, for the effortless guidance throughout the research process despite his busy schedule.

I am grateful to Dr. Simon Tembo, Dr. Erastus Mwanaumo and Mr. Shuller Habeenzu from the University of Zambia, School of Engineering, as they were also instrumental throughout the process of my Masters.

I am also grateful to the Ministry of Transport and Communication, Zambia Information Communication Technology Authority (ZICTA), Zamtel, MTN, Hai Zambia, Liquid Telecoms, Zamnet, iConnect, Microlink and Airtel for allowing me to conduct the research in their institutions.

Lastly, I would like to express my sincere gratitude to my family and friends, particularly Ms. Khuta Hara-Hanyama, who supported me throughout this process.

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ABBREVIATIONS AND ACRONYMS

AISI	African Information Society Initiative
AOA	Action-Oriented Approach
ATU	African Telecommunication Union
CAZ	Communications Authority of Zambia
CRASA	Communications Regulators Association of Southern Africa
EAC-EARPTO	East African Community and East African Regulatory, Postal and Telecommunications Organisation
ECTA	Electronic Communication and Transaction Act
ICANN	Internet Corporation for Assigned Names and Numbers
ICT	Information and Communications Technology
IETF	Internet Engineering Task Force
IS	Internet Society.
ISPs	Internet Service Providers
ITU	International Telecommunications Union
MNOs	Mobile Network Operators
MoTC	Ministry of Transport and Communication
NCC	National Communications Commission

NEPAD	New Economic Partnership for Africa's Development
OECD	Organisation Economic Co-operation and Development
OTT	Over-the-top
PSA	Postal Services Act
PTC	Post and Telecommunication Corporation
SADC	Southern African Development Community
UNDP	United Nations Development Programme
UNECA	UN Economic Commission for Africa
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WIPO	World Intellectual Property Organisation
WSIS	World Summit on the Information Society
WTO	World Trade Organisation
ZAMTEL	Zambia Telecommunication Company Limited
ZICTA	Zambia Information and Communications Technology Authority

DEFINITIONS OF TERMS

Policies Guiding principle designed to influence decisions and actions; usually, a policy describes a required process or procedure within an organisation

Legislation These are rules and laws made by the government

Internet The internet is simply a 'network of computer networks' which allows computers globally to communicate using telephone lines

MNOs A Mobile Network Operator is "a provider of wireless service communications that owns or controls all the elements necessary to sell and deliver services to an end user including radio spectrum allocation, wireless network infrastructure, back haul infrastructure, billing, customer care, provisioning computer systems and marketing and repair organisations"

ISPs An Internet Service Provider (ISP) is a company that provides individuals and other companies access to the internet and other related services such as Web site building and virtual hosting

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

This study discusses policies and legislation for internet access and usage in Zambia. It has various laws and policies in place in relation to internet use and access such as the Zambia National ICT Policy 2007 that aims at using ICTs as a means to contribute to the national objectives of providing innovative and productive education and training systems accessible to all citizens for creation of a knowledge-based society. The chapter further discusses the background of the study, which gives an in-depth study of the various ICT policies and legislations in Zambia, statement of the problem, research objective and research questions, significance as well as the limitations of study.

Souter (2009) defines a policy as a "deliberate plan of action to guide decisions and achieve rational outcomes. Policy may apply to government, private sector organisations groups, and individuals. Policy differs from rules or law; while law can compel or prohibit behaviours, policy merely guides actions toward those that are most likely to achieve a desired outcome." Furthermore, policy is generally put into practice through legislation which provides a framework for regulating the conduct of citizens, businesses and other actors in society. Regulation, by contrast, is essentially instrumental, focused on translating the objectives of policy decisions into practical measures which achieve their purpose; where policy making is primarily a matter of political decision making, regulation is much more technocratic, concerned with identifying the most effective ways of achieving the objectives which policy-makers have agreed. This is done primarily through rules and regulations, and by decisions about specific circumstances which arise in which those rules and regulations must be

interpreted. The primary interface between policy making and regulation occurs at the level of strategic design which then translates policy into regulation. However, ownership of different spaces in the policy and regulation process is often contested between ministries and regulators.

Policy has also been defined as "a set of decisions which are oriented towards a long-term purpose or to a particular problem, such decisions by governments are often embodied in legislation and usually apply to a country as a whole rather than to one part of it," (Kandiri, 2006).

Mweeta et al (2007) explains that "the main goal of the ICT policy is to integrate ICT in most of the institutions of the sectors of the Zambian economy and develop the nation's research or development capacities to support, facilitate and contribute to the development of all especially key sectors of the economy including appropriate local ICT product and services". It is clear that the world today is connected by click of a button as almost everyone in the world uses some form of communication technology; therefore, it is important to introduce and promote ICT as well as guiding policies and regulations. Zambia, which is among many developing countries in Africa, equally has developed a number of ICT policies. Some of the key legislation on information policy currently in existence in Zambia are the:

1. Zambia National ICT Policy, whose aim is to use ICTs in contributing to the national objectives of providing an innovative and productive education and training systems accessible to all citizens for creation of a knowledge-based Zambian society.

2. Information & Communications Technologies Act of 2009, which provides for the economic and technical regulation of ICTs and access rights. This act was approved on 12th April, 2010 on the amendments, an Act to amend the Information and

Communication Technologies Act, 2009 was on the16th April, 2010 enacted by the Parliament of Zambia. Therefore, following the enactment, the Act may be cited as the Information and Communication Technologies (Amendment) Act, 2010. The principal Act is amended by repeal of section forty- three and the substitution.

3. Postal Services Act of 2009 for the regulation of Zambian postal and courier services.

4. Electronic Communications and Transactions Act of 2009 for the development and operation of a safe, secure and effective environment for electronic transactions.

5. Independent Broadcasting Authority Act of 2007, which established the Independent Broadcasting Authority to regulate the broadcasting sector.This is "an Act to establish the Independent Broadcasting Authority and to define its functions; to provide for the control and regulation of broadcasting and diffusion services; and to provide for matters connected with or incidental to the foregoing.

6. Computer Misuse and Crimes Act of 2004, which prohibits any unauthorized access, uses or interferences with computer-based systems.

Categories of Regulations, Regulation is categorised into 3 levels i.e.

1. "**Technical Standardisation**, which establishes a common and legally enforceable platform for all businesses within a sector or across the whole of business – for example, the rules governing electrical power supply or company accounting. Technical standardisation is managed at a number of levels i.e. at global, regional and national, often through separate standards agencies (and with increasingly powerful influence from manufacturing companies).
2. **Public Policy Regulation**, which seeks to achieve objectives because they are believed to be in the public interest. Public policy regulation includes issues such as

universal service/access provision, which requires businesses to do things that they would not choose to do in normal market conditions.

3. **Competition Regulation**, which seeks to create and maintain fair competitive relationships between businesses and consumers" (Souter, 2009).

Government ICT policy is a key item on the ICT agenda today. But not all countries have the same decisions to make, nor the same time frame in which to make them. Whereas most of the Organisation Economic Co-operation and Development (OECD) countries, for example, have privatised their telecom companies, and have well established telephone systems that provide internet access to all citizens, in developing countries this is often not the case. Decisions taken in the 1990s in the rich countries, about market liberalisation and deregulation for example, are still being taken in poor countries today. In North America and Europe, how to provide broadband access is a current concern, whereas in Africa most people still do not have access to a telephone, let alone cable TV or satellite connections. Some countries are in the middle; they have initiated their deregulation process, but this is far from complete and de facto monopolies are common. A new alignment of international voices has emerged to deal with the big stakes now at play in ICT policy. Powerful intergovernmental organisations are setting the agenda on ICT issues that penetrate all aspects of life from policy, legislation and regulation to cultural development and the delivery of health and education (Nicol, 2003).

According to (Qiuyan Fan, 2005) , "Internet access is determined by a combination of a widely available telecommunication infrastructure and affordability of Internet services, which are closely related to government policies. Some countries have considered the Internet a powerful tool for national development economically and socially".

Zambia has various laws and policies in place in relation to internet usage and access Zambia National ICT Policy 2007, aimed at using use ICTs in contributing to the national objectives of providing an innovative and productive education and training systems accessible to all citizens for creation of a knowledge based Zambian society, Information & Communications Technologies Act of 2009 that provides for the economic and technical regulation of ICTs and access rights, Postal Services Act of 2009 for the regulation of Zambian postal and courier services, Electronic Communications and Transactions Act of 2009 for the development and operation of a safe, secure and effective environment for electronic transactions, Independent Broadcasting Authority Act of 2007 that established the Independent Broadcasting Authority to regulate the broadcasting sector and Computer Misuse and Crimes Act of 2004 that prohibits any unauthorized access, uses or interferences with computer-based system. However, the challenge has been seen in the implementation of the policies and legislation which seek to provide internet access and usage both in urban and rural areas. It is also important to note here that Zambia's ICT sector has "achieved a remarkable development during the past decade with major reforms and formation of National ICT Policy. Although the sector has recorded a huge penetration rate of 32 percent compared to only 0.02 percent growth 14 years ago, access to internet and mobile services is only limited to 1 percent and 30 percent of the population of Zambia, respectively. The low access to services is a result of current delivery cost which can be associated with the monopoly of the telecommunication sector by the incumbent State-owned Zamtel" (ICT for less developed countries, n.d.)

After the Liberalisation of the telecommunication sector which saw the enactment of the Telecommunication Act, which further lead to the Post and Telecommunication Corporation (PTC) to exist as a single entity, the Zambia Postal Services Corporation

and the Telecommunication Division became the Zambia Telecommunication Company Limited (Zamtel) (Research and Markets, n.d.).

The Communications Authority of Zambia (CAZ) was established by the Telecommunication Act. It was established to regulate and monitor the provision and operations of telecommunication services in Zambia. CAZ may grant licences for the provision and operation of telecommunications services to qualified individuals or organisations. The introduction of the Telecommunications Act saw the introduction of private participation in the provision and operation of telecommunication network and services, meaning anyone can apply (either individuals organisations) for the operation and provision licence (Research and Markets, n.d.).

Zambia Information and Communications Technology Authority (ZICTA) is an Information Communication Technology (ICT) body responsible for regulating ICT and Telecommunication Policy and Regulation in Zambia. ZICTA works hand in hand with the ICT Act No.15 of 2009, the Postal Services Act No.22 of 2009 and the Electronic Communications and Transactions Act No. 21. ZICTA regulates all the mobile service providers and internet service providers in Zambia. (ZICTA, 2015). ZICTA has been providing checks and balances in the mobile, internet and general telecommunication services. The regulatory body has put to task the mobile providers to respond to customers' complaints e.g. poor network connection and general poor service provision. Most of the service providers have been addressing customer complaints on time.

According to ZICTA (2015): "the seclusion of rural communities and the under-served area from ICT resources perpetuates the problems associated with socio-economic

deprivation, including poverty, most rural communities lack basic ICT services and risk being left out of the information society". It is further stated that the "the legal framework on rural connectivity in Zambia was governed by the Telecommunications Act of 1994, which mandates the Authority to ensure the extension of telecommunications services nation-wide. Further the National ICT policy of 2006 provides direction regarding rural connectivity and the provision and of access to telecommunication/ICT services" (ZICTA, 2015).

Grover (2013) "Disclosure is greater when policies are tangible and explicit. Such as a paper copy of a firm's internet policy resonates tangibility, and draws greater attention to the information". This is also true for most policies which are both simplified and distributed to the relevant population for information purposes.

Policies that address technology can be defined as "decisions taken by governments for the purpose of affecting rate and direction of technological development and practices of governments" (Taymaz, 2001). Further, "technology policy is development and directing scientific and technological activities in such way which will take requirements of any country in economic, social, political and military fields and their future targets into account" (Sanli, 2015).

The Universal Service and Telecommunications Act of 1996 of America states that "Act makes a commitment to ensure that rural customers, such as Native Americans on reservations, receive the same benefits as those in urban areas by encouraging competition in high-cost rural areas" (Bissell, n.d).

Zambia, like any other country in the world, is linked to the "International Information Grid", the internet. In 1994, Zambia was connected to the internet through ZAMNET Communication Systems Ltd. "ZAMNET was established by the University of Zambia

and it became the first internet service provider in the country. The establishment of ZAMNET drastically facilitated communications within Zambia and abroad. Zambians were liberated from a traditional mail postal service- a slow process they were using when communicating with people living within Zambia, and in the Diaspora"(ICLC, n.d.).

Since independence, in 1964, we have seen Zambia's mobile industry taking several levels and faces. The continuous changes in the mobile telecommunication industrial nature of the country are attributed to several reasons ranging from political, economic and external influence just to name a few. Previously, we had seen how the government had centralised service delivery and development, Zambia's industrial base was wide but very weak as citizens owned nothing in terms of companies or private firms but after the change of government in 1991 came under increasing pressure to compete in an environment which was rapidly changing and becoming difficult to assess and predict. Hence, there was industrial transformation after Zambia's adoption of the free market system. The country saw the birth and death of certain industries. Many parastatal which could not take off were either liquidated or privatised to pave way for private sector participation in the resource allocation and service delivery and certain State-owned firms like Zambia Telecommunication (Zamtel), Zambia Postal Services and some financial institutions were subjected to stiff competition so that their viability could be tested. One of the industries which experienced serious transformation and competition after economic liberalisation was Telecommunication. Telecommunication in command economy was only populated with one centrally-controlled firm called post and telecommunication corporation (PTC), which later changed to Zamtel and Zambia Postal Services after delinking it. But by today, several

privately owned mobile service providers in this industry have mushroomed, for instance, companies such as MTN Zambia, Airtel Zambia, Zamtel (State-owned). However, the first three deal in specifically cellular (mobile phone) telecommunication i.e. mobile service providers (Soko, 2013).

Zambia cannot be left out. We have seen over the years the three (3) major mobile networks going through various changes e.g. the company MSI Cellular was in operational in 1998, which was changed to Celtel International by January 2004, it further went on to change the name to become a subsidiary of Zain (formally Mobile Telecommunications Company). In 2010, the company was purchased by Bharti Airtel and the same time rebranded as Airtel (Celtel, n.d.).

MTN is the second largest network in Zambia; it 100 percent acquired Telecel in August 2005. It has an established GSM network and had recorded about 97,000 subscribers by 31st December 2005. Since its acquisition, the focus has been on up-grading on the existing call network to accommodate the growing numbers of subscribers. (MTN annual report, n,d.). Over the past 10 years, MTN, however, has grown its capacity in both service provision and service delivery from the second ranking position to being ranked the first in the country.

ZICTA (2014) "MTN Group Ltd. advanced India's Bharti Airtel Ltd which then become Zambia's biggest mobile-phone operator. At the end of March 2014, figures from nation's telecommunications authority showed MTN Zambia Ltd which was the local unit of the Africa's biggest wireless operator, had a subscriber base of 4.26 million people, compared with Bharti's 4.04 million,"

1.2 Statement of the Problem

The overall research problem addressed in this study was that despite having policies and legislation that address internet usage and access in Zambia, little has been done to analyse and address the current policies and legislation in relation to ICT. Zambia, like many other African countries, has made some efforts in improving internet access through the development and implementation of the various legislation and policies that have been put in place to regulate the various stakeholders.

Zambia has ICT policies, policy implementation plans and supporting regulatory instruments in place, although, in some instances, the policies still need finalisation and approval. Lack of coordination and insufficient communication are one of the main issues. The Vision 2030, the Fifth National Development Plan (2004), and the National ICT Policy (2007) all provide for the necessary policy guidance on provision of ICTs and establishment of an information society and economy, but what seems lacking is a productive inter-ministerial and inter-agency dialogue to facilitate development of inter-sectorial policies and strategies to guide policy implementation by different ministries, government agencies and civil society. To ensure the agencies are working towards achievement of meeting set goals, there is need to build the capacities of the leadership to facilitate internal dialogue within the ministry, its agencies and civil society; development of inter-related policies and strategies; and monitoring of activities (UNESCO, n.d.).

The internet has been seen as the fastest growing industry and is also very significant. However, the underlying issue is that of communication of policies which have been seen to influence the current growth rates. The proportional review of policy approaches to regulating the internet in countries and identify the regulatory factors affecting internet access in terms of availability and affordability, especially those

factors which encourage the creation of a policy and regulatory environment favourable to the development of Internet infrastructure and access. This examines the linkages between regulatory regimes, market environments and internet access. The initial result suggests that government policies governing the telecommunications service market and promoting information infrastructure have a significant impact on the affordability and availability of internet access.

1.3 Objectives of the Study

Zambia has a number of people who have access to internet and have some knowledge on general use of internet services. However, the question still remains as to how many people have knowledge on the ICT policies as well as the content. One might want to believe that ignorance and lack of interest in reading are a contributing factor to the poor knowledge levels on the available laws and policies pertaining to the internet usage and accessibility in Zambia.

The aim of the study was to ascertain whether the current policies and legislation are indeed relevant in addressing internet access and usage in Zambia. The research was equally aimed at analysing current policies and legislation in addressing internet usage and access in Zambia both by the regulators and service providers' i.e. ISPs and MNOs.

The following were the objectives of the study;

1. To investigate policies and legislations on internet usage
2. To analyse the roles of regulatory agencies in internet Usage.
3. To determine implementation of internet policies and legislation.

1.4 Research Questions

1. What policies and legislations are there for implementing internet access and usage?
2. What is the role of regulatory agencies in the implementation of policy and legislations regarding internet access and usage?
3. What policies and legislation are in place relating to internet access in Zambia?
4. Who are the key stakeholders in the implementation of internet policy and legislation?
5. How can we determine the effectiveness of internet access policy and legislation in Zambia?

1.5 Significance of the Study

The findings of this study helped to generate information on the available policies and legislation on internet usage and accessibility in Zambia. The research findings further provided recommendations on the review of current ICT policies. The results may assist regulatory bodies and other stakeholders to ensure that efforts in addressing the need for regulation for internet usage is adhered to. The research may further benefit the Ministry of Transport and Communication, ZICTA, MNOs and ISPs in identifying the gaps within the current policies and ensuring that there is an implementation of provision of internet services in Zambia.

1.6 Limitations of the Study

- Some institutions did not respond to the letter of request for data collection which reduced the sample size.
- Some respondents left some of the questions in the questionnaire unanswered.
- Time constraints due to the fact that I had to manage work, family and school.

- The research targeted 50 respondents but I was only able to get back 38 respondents.
- The time taken by the respondents to respond to the questionnaires took longer than expected.

1.7 Summary

This chapter discussed the background of ICT policies and legislation in Zambia, which revealed that Zambia, which is among many developing countries in Africa, equally has developed a number of ICT policies, such as Zambia National ICT Policy 2009, Information & Communications Technologies Act of 2009 and Postal Services Act of 2009, Electronic Communications and Transactions Act of 2009, Independent Broadcasting Authority Act of 2007 and the Computer Misuse and Crimes Act of 2004. The chapter further discussed the problem statement, research objectives, and research questions, limitations of the study as well as its significance.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter discusses and reviews the various pieces of literature from within Zambia and other countries. The literature presented also discusses what is prevailing at the international, regional and local levels in terms of policy and legislation. Furthermore, the literature endeavours to align problem statement through the literature, the research objectives and the research questions as well as a review of similar studies. This chapter concludes with the conceptual and theoretical framework.

2.2.International Level

Nicol (2003, pp. 10-12) "ICT policy generally covers three main areas: telecommunications (especially telephone communications), broadcasting (radio and TV) and the internet. It may be national, regional or international. Each level may have its own decision-making bodies, sometimes making different and even contradictory policies. Although policies are formally put in place by governments, different stakeholders and in particular the private sector make inputs into the policy process and affect its out- comes. Thus, for example, in the International Telecommunications Union, an intergovernmental body for governments to coordinate rules and regulations in the field of telecommunications, the influence of multinationals has grown enormously. Privatisation of State-owned companies has meant that governments can rarely control telecommunications directly". Zambia has also seen a number of companies being private and the ICT industry has not been left out, Zamtel was one of the companies that were privatised.

Souter (2009, pp. 8) "ICT policy covers information and communication technologies, networks, services, markets and the relationships between the different actors involved

in these. It may be national or international in scope. ICTs draw together areas of technology, business and policy that have previously been distinct. Policy towards different ICTs is often based around different traditions and assumptions. This is particularly so when it comes to regulation. The ethos of broadcasting regulation, which is based around content and ownership, is very different from that of telecommunications regulation, which is based around technology and interconnectivity." As Zambia advances in the area of technology, there is a need to also review the current ICT policies to incorporate the new strategies being employed by other countries.

Nicol (2003, pp. 40-42) "The telecommunications network, based on circuit-switching, has highly regulated structures. At the national level, each country has a ministry, laws surrounding the use of networks and in a growing number of cases and industry regulator. There are also overarching international bodies like the International Telecommunications Union (ITU, a specialised agency of the United Nations) and the European Union, which regulate the sector in different ways. Policy is made at these different levels, and stakeholders can make an input into it. For example, the cost of international telephone calls is met through a regime of bilateral settlements called the international accounting rate system. This is the mechanism for sharing the cost for international calls between the sending and receiving carriers in each country so that each side pays half of the cost of the international circuit".

There are a number of international organisations that play a part in deciding policies that affect information and communications technologies. The following are some of the organisation:

1. Technical agencies; Radio and Standardisation Bureaux of the International Telecommunication Union (ITU), the Internet Engineering Task Force (IETF) and the Internet Corporation for Assigned Names and Numbers (ICANN).
2. Communications policy forums; ITU Plenipotentiary Conference and Development Bureau, and the Internet Society (ISOC).
3. Specialist agencies; these are from outside the ICT sector; their areas of responsibility intersect with ICT e.g. the World Trade Organisation (WTO) and the World Intellectual Property Organisation (WIPO).
4. Development agencies; World Bank, the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and the United Nations Development Programme (UNDP).

Some of these organisations are purely intergovernmental in character (such as United Nations bodies). Others are based around the private sector (such as the technical forums which develop many new technical standards). Others again -particularly where the internet is concerned -have less formal membership arrangements, including individual membership.

2.2.1 The Actors at International and Regional Levels; internet and ICT policy

When it comes to internet and ICT policies at the international level and Regional level, there are organisations "that define the global information economy and the rules under which countries can connect to it, as well as the conditions under which support will be available for the implementation of ICT programmes while at regional level they may play a promotional role and enhance collaboration".

The key organisations at international level are:

- International Telecommunications Union,

- The World Intellectual Property Organisation,
- The World Trade Organisation,
- The World Bank and
- The World Economic Forum.

The following are the organisations that govern internet:

- The Internet Society,
- The Internet Engineering Task Force,
- The World Wide Web Consortium and
- The Internet Corporation for Assigned Names and Numbers (Nicol 2003, pp. 65-66)

2.3 Regional Level

A policy can be defined as a guiding principle designed to influence decisions and actions. Usually, a policy describes a required process or procedure within an organisation. It can be seen as a plan of action to guide decisions and actions. Policies apply to government, private sector organisations and groups, and individuals. The process may include, among others, the identification of different alternatives, such as programmes or spending priorities, and choosing among them on the basis of the impact they will have (Kandiri, n.d.).

Other scholars have defined policy as a **"**Long series of more or less related choices, including decision not to act, made by governmental bodies and officials" (Canada Research institute, 1994)

There are also some regional organisations which coordinate ICT policies and regulations; i.e. Tanzania is a member of the African Telecommunication Union (ATU), and of the e-Africa Commission of the New Economic Partnership for Africa's

Development (NEPAD); it is also a participant in the work of the United Nations Economic Commission for Africa (UNECA)'s African Information Society Initiative (AISI) and other programmes; a signatory of the Southern African Development Community (SADC) protocol on transport and communications and a member of the Communications Regulators Association of Southern Africa (CRASA); a member of the East African Community and East African Regulatory, Postal and Telecommunications Organisation (EAC-RPTO); a member of the Commonwealth Telecommunications Organisation and the Commonwealth Broadcasting Association. (Souter 2009)

The key organisations at Regional Level

i. The Economic Commission for Africa
ii. African Information Society Initiative and
iii. The regional development banks.

2.3.1 Benefits of Policies

The following are some of the benefits of policies:

i. Help save on time i.e. when a policy is in place, it is easy to implement actions stipulated within the policies which guide various actions and regulations.
ii. Help prevent managerial mistakes; in various organisations and institutions.
iii. Improve consistency of decision making; every policy has steps that have to be followed when making certain decisions.
iv. Focus decisions towards set business goals.
v. Researchers and policy-makers around the world are increasingly acknowledging the importance of developing a school-based ICT policy

plan to facilitate the integration of information and communication technology (ICT) in education.

Despite this interest, not much is known about how schools can develop their local ICT policy capacity and how to establish an ICT policy plan. In order to fill the gap in research on ICT policy planning, a multiple case study analysis with a mixed-method design has to be carried out. Most of the organisations are encouraged by the government to develop local ICT policy planning in a context of ICT curriculum reform. Data from multiple sources (e.g. interviews, and ICT coordinators, focus group interviews policy document analysis, and questionnaire). ICT policy consists of different policy domains: vision development, financial policy, infrastructural policy, continuing professional development policy, and curriculum policy. Each policy domain can be described in terms of policy artefacts i.e. tools, routines, and structures (Ruben et al, 2012)

2.3.2 Qualities of a Good Policy

There are a number of qualities of a good policy and the following are among them:

i. A policy should support and be consistent with organisational/ institutional objectives, goals and strategies which could be local, regional or international.
ii. It should be practical and directly relevant to the business mandate.
iii. A good policy is one which is reviewed frequently and is amended as needed
iv. It should limit discretion of managers/employees
v. It should also be precise, easy to understand as well as easy to apply
vi. A policy should be documented so that it can stand the test of time
vii. It should be applied and enforced by the organisation

2.3.3 Objectives of an ICT Policy

The United Nations Economic and Social Commission for Asia and the Pacific indicated that there are common objectives of ICT policy aspirations to meet i.e.

i. Increasing the benefits from information technology i.e. internet access helping people and organisations to adapt to new circumstances and providing tools and models to respond rationally to challenges posed by ICT.

ii. Providing information and communication facilities, services and management at a reasonable or reduced cost

iii. Improving the quality of services and products

iv. Encouraging innovations in technology development, use of technology and general work flows

v. Promoting information sharing, transparency and accountability and reducing bureaucracy within and between organisations, and towards the public at large

vi. Identifying priority areas for ICT development (areas that will have the greatest positive impact on programmes, services and customers)

vii. Providing citizens with a chance to access information; they may further specify the quality of that access in terms of media, retrieval performance among others

viii. Attaining a specified minimum level of information technology resources for educational institutions and government agencies

ix. Supporting the concept of life-long learning

x. Providing individuals and organisations with a minimum level of ICT knowledge, and the ability to keep it up to date

xi. Helping to understand information technology, its development and its cross- disciplinary impact

2.3.4 The Stakeholders in the National ICT Policy Formulation

The Government, as the policy formulator has to be mindful of the stakeholders i.e. Internet Service Providers (ISPs) and consumers. Kandiri (n.d) states that "although policies are formally put in place by governments, different stakeholders and in particular the private sector make inputs into the policy process and affect its out-comes. The government therefore provides an environment; this is providing resources e.g. time, money and logistics to start the process of the development of ICTs policies".

The World Summit on the Information Society (WSIS), which is a United Nations conference, led by the International Telecommunications Union, " Stakeholders refer to the three main actors within the WSIS process: governments, the private sector and civil society. In addition, there are many UN agencies and intergovernmental bodies participating in the process. The government must include stakeholders in formulating ICT policies".

The following are some of the stakeholders' roles:

i. Government: Enabling policies, conducive to private sector investment
ii. Development partners: Build capacity, in collaboration with other participating bodies
iii. Civil society: Inform policy making (access, learning, poverty, governance)
iv. Consumers: Participate in development, application, setting standards; ensuring consumer protection

v. Regulators such as ZICTA: Issue licences, tariffs, interconnections, standards, frequency management; numbering; key domain

vi. Investors, operators, service providers: Develop an efficient ICT sector, commercial integrity, strong corporate governance, high quality standards, participate in provision of universal access

Stakeholders may include among others: universities, schools; NGOs, financial institutions such as banks, especially the central bank which is the major regulator when it comes to ICTs in the whole banking sector. ICT bodies e.g. Zambia Information and Communications Technology Authority (ZICTA), GSM Association of Zambia, Internet Services Providers Associations of Zambia (iConnect, Real time-Hai, Microlink, Liquid Telecoms), Consumer Unit Trust, financing institutions like banks, telecommunication industry players e.g. MTN, Airtel, Zamtel etc. and international telecommunication regulators e.g. International Telecommunications Union (ITU).

2.4 Local Level

COMMUNICATIONS AUTHORITY OF ZAMBIA (CAZ)

The Communications Authority of Zambia (CAZ) was established by the Telecommunication Act. It was established to regulate and monitor the provision and operations of telecommunication services in Zambia. CAZ may grant licences for the provision and operation of telecommunication services to qualified individuals or organisations. The introduction of the Telecommunications Act saw the introduction of private participation in the provision and operation of telecommunication network and services, meaning anyone can apply (either individuals organisations) for the operation and provision licence. (Research and Markets, n.d.). CAZ later changed its name to Zambia Information and Communications Technology Authority (ZICTA).

ZICTA is an Information Communication Technology (ICT) body responsible for regulating ICT and telecommunication policy and regulation in Zambia. ZICTA works hand in hand with the ICT Act No.15 of 2009, the Postal Services Act No.22 of 2009 and the Electronic Communications and Transactions Act No. 21. ZICTA regulates all the Mobile Network Operators (MNOs) and Internet Service Providers (ISPs) in Zambia. (ZICTA, 2015)

ZICTA has been providing checks and balances in the mobile, internet and general telecommunication services. The regulatory body has put to task the mobile providers to respond to customers' complaints e.g. poor network connection and general poor service provision. Most of the service providers have been addressing customer complaints on time.

Mwansa (2015) "an entrepreneur in the technology, media and telecommunication space, Cris Munyati, has called for quick operationalisation of the national information and communication technology (ICT) policy. Munyati urged Government to consider merging the Ministry of Information and Broadcasting with the Department of Communications, which is currently under the Ministry of Works and Supply, Transport and Communications. The ICT policy was developed in 2007, yet implementation has been lagging. He attributed the lack of implementation of the policy to the fact that it is under the Department of Communications, which is under the Ministry of Works, Supply, Transport and Communications. He further added that ICT policy is an important step for the country to be transformed into an information and knowledge based society".

According to ZICTA (2015),"the seclusion or rural communities and the under-served area from ICT resources perpetuates the problems associated with socio-economic

deprivation including poverty, most rural communities lack basic ICT services and risk being left out of the information society". It is further stated that "the legal framework on rural connectivity in Zambia was governed by the Telecommunications Act of 1994, which mandates the Authority to ensure the extension of telecommunications services nation-wide. Further, the National ICT policy of 2006 provides direction regarding rural connectivity, the provision and access to telecommunication/ICT services" (ZICTA, 2015).

Zambia has a number of ISPs and MNOs, but the numbers show that there is low access of internet usage by many people in Zambia countrywide. Table 1 shows ICT indicators of fixed internet subscription and Table 2 shows mobile internet users between the years 2001-2015 first quarter **(**ZICTA, 2015**)**.

Table 1: ICT Indictors of Fixed internet Subscription

Year (20)	**01**	**02**	**03**	**04**	**05**	**06**	**07**	**08**	**09**	**10**	**11**	**12**	**13**	**14**	**15-Q1**
Subscribers '000	8	12	12	16	11	12	18	18	18	10	20	16	18	29	0.19
Subscribers /100 inhabitants	0.08	0.11	0.11	0.15	0.10	0.10	0.15	0.15	0.14	0.08	0.14	0.11	0.14	33	0.21

Table 2: Mobile Internet Users

Year	**2011**	**2012**	**2013**	**2014**	**2015-Q1**
Users	379,888	2,314,983	2,517,132	3,741,615	4,315,056
Mobile Penetration	3	16	17	24	28

ZAMBIA TELECOMMUNICATIONS COMPANY LIMITED (Zamtel)

Zamtel, a State-owned telecommunications company, was acquired in 2010 by LAP-Green, which took up 75percent stake in it. The acquisition saw an increased number of subscribers. (Lap green, n.d). Zamtel which is commonly branded Celz, has the monopoly of providing international links to the other networks as well as other telecommunications industries such as Microlink, Zamnet, liquid telecom, copper net, real time (Hai) and iConnect. Zambia can now be linked to other countries just by a click of a button due to the introduction of wireless connection as well as mobile phones, fixed phones, internet. The current service providers are all providing mobile internet as well as broadband, which has been seen to ease people's movement for the demand of these services. Zambia has seen in the recent past more banks switching to the provision of mobile banking to reduce the number of individuals flocking to them.

Nicol (2003, pp. 55) "Policy is the key determinant of legislation and regulation. It sets out the vision for ICT and its links to national development goals. Legislation establishes how policy is implemented by providing the statutory foundation for the required institutions (for example, consultative, advisory and regulatory bodies) and processes and licensing). Legislation specifies the financial, staffing and reporting regimes under which the regulator operates and which define its functions and degree of independence. Regulatory agencies are responsible for developing regulations that lead to the implementation of policy and policy objectives such as, for example, new tariff structures and universal access programmes".

In many countries, the government is usually the driver of ICT policy development. The major player from the public sector is the ministry, which is tasked with the responsibility for communications. The national telecommunications operator e.g. in

Zambia's case is Zamtel while the regulator is ZICTA. It is important to note here that there is a need for other ministries with an interest in the outcome of the policy to also be involved, e.g. the ministries of Education, Health as well as Trade and Industry.

Zambia has various laws and policies in place in relation to internet use and access such as the Zambia National ICT Policy and the ICT Act of 2009 as well as the Electronic Communication and Transaction Act of 2009. However, the challenge has been seen in the implementation of the policies and legislation which seek to provide internet access and usage both in urban and rural areas. It is also important to note here that Zambia's ICT sector has "achieved a remarkable development during the past decade with major reforms and formation of National ICT policy. Although the sector has recorded a huge penetration rate of 32 percent compared to only 0.02 percent growth 14 years ago, access to internet and mobile services is only limited to 1 percent and 30 percent of the population of Zambia, respectively. The low access to services is a result of current delivery cost, which can be associated with the monopoly of the telecommunication sector by the incumbent State-owned Zamtel" (ICT for LDC .n.d) The Liberalization of the telecommunication sector, which saw the enactment of the Telecommunication Act, further led to the Post and Telecommunication Corporation (PTC) to exist as a single entity. The Zambia Postal Services Corporation and the Telecommunication Division became the Zambia Telecommunication Company Limited (Zamtel) (Research and Markets, n.d).

2.4.1 Role of Government in ICT Policy Formulation

Every government has a role to meet in the country in relation to policies at national level. The following are some of the roles the government should play:

i. The government should promote ICT in the country through e-government, education, science & technology systems, public health, social plans, and economic plans.

ii. It should also support internet uses and applications in all governmental levels.

iii. The government should also campaign on the implementation of information and training campaigns about benefits of internet and its potentials

iv. The Creation of National Agencies (e.g. in the case of Zambia, it is ZICTA.) which are specialised in Information Society, integrating members of the public and private sector, the civil society organisations and the academia

v. Create a "Regional Agency" specialised in information society matters, in order to coordinate and make compatible the policies and initiatives implemented by governments.

vi. Providing a legal framework to make the policy acceptable.

2.5 Related Research

2.5.1 The Internet Legislative and Policy Environment in Kenya

According to the Kenyan Human Rights Commission (KHRC) 2014, "the national communications policies and regulations are vital in determining how infrastructure, access and affordability progress. To support internet growth, the policy-makers must take strong leadership in implementing policy. Policies should not distort the market by favouring operators. Of importance is that reduction in internet costs will attract more subsidies and therefore have more Kenyans connected. During the Kenya IGF,

July 26, 2013, a government official said that their role as government is not to provide infrastructure (businesses will do that) but to monitor and control.

Furthermore, KHRC states that internet governance processes need to be fully inclusive of all stakeholders, promoting the democratic and innovative potential of the internet. That way the safe-guards of the rights and freedoms in the internet derived from the Constitution and the international human rights instrument."

Recommendations

a. "The Kenyan Communications Ministry as well as the Communication Commission Kenya (CCK), which is a stated owned corporation established in 1998 that is responsible for ensuring fair place in airwave.it is the independent regulatory authority for communications industry in Kenya, have embraced multi-stakeholder approach in policy- making processes and have had stakeholder consultation in coming up with various guidelines, sector regulation and legislation. However, stakeholder input has not always been taken on board. There is need to have a clear framework of incorporating stakeholder input into policy positions.
b. The Kenya ICT Authority, in expanding open data, will need to collaborate with locals to developed apps that could be availed and used on mobile phones, avail content in local languages, and encourage Kenyans to make use of the open data portal in particular in matters of development for counties.
c. Stakeholders will need to be vigilant to ensure that the Laptop for Schools project is not captured by selfish interest, that there is equity in distribution of laptops and the marginalised are not forgotten. Additionally, the Ministry of Education must be accountable to Kenyans and must be compelled to make information available on the progress of the project."

2.5.2 International Governance in Kenya- An Assessment for the Internet Society

Kenyan's internet is recognised as a significant element in national development and is playing an increasingly important part in the lives and livelihoods of more and more Kenyan citizens. Its impact is growing rapidly thanks to the spread of mobile access, though it is still considerably higher in the capital Nairobi than in other cities, let alone in rural areas. Participation in internet governance, however, is something that happens in Nairobi rather than in the country as a whole. There is a significant community of participants in internet governance in Kenya, and a higher level of understanding of internet governance issues among a wider group of stakeholders than is found in most comparable countries.

Kenya has multi-stakeholder engagement in ICT and internet issues have been promoted by a number of prominent individuals, by the multi-stakeholder coalition, that is KICTA Net, and by the Ministry of Information and Communications. As a result, Internet governance issues have been more widely debated in public policy fora as well as in the first national and regional IGF structures to be established.

However, Internet governance is a minority interest within the policy and internet communities in Kenya. Even among technical professionals interviewed for this study, a good number were uncertain of the meaning of internet governance, unfamiliar with key issues and terminology, unaware of government policies, and disengaged from Internet governance entities, including KICTA Net and the Kenya IGF. (Souter and Makau, 2012)

2.5.3 Contradictions of Tanzania Government Policies on Internet Service Provision – Case Study of Dar-es-Salaam City

The Tanzanian government recognises the importance of accessibility in national development and has been at the forefront, at least on paper, in putting in place institutional structures and frameworks to enhance internet access and use, particularly in Dar-es-Salaam. Some of the notable accomplishments have been in the area of legislation: deregulation in telecommunications sector, licensing, reduction of import duty and other tariffs on software and hardware. These efforts, though, have not translated in practical terms into wider internet adoption and use in the country. Despite what is seen as government efforts to improve internet accessibility and use in Dar-es-salaam, the impact of these efforts remains insignificant. (Mutual and Ahmadi, 2016)

2.5.4 A review of Telecommunications Policy Development and Challenges in Rwanda Association for Progressive Communications (APC)

The Rwandan government embarked on a "policy that aimed to increase connectivity as a branch to development. This meant that the sole State-owned telecommunication company at the time, Rwandatel, would be treated differently by setting up an independent regulatory body known as the Rwanda Utilities Regulatory Agency (RURA), and altering the ICT market structure. Telecommunication reforms were aimed at increasing the competitiveness of the telecommunications industry and attracting foreign investment. . Rwanda was amongst the few African countries that developed an integrated ICT policy in the late 1990s with a clear vision of making ICTs a critical part of its socio-economic development plan".

a. Challenges related to the regulatory environment

It can be noted that the main challenge of the internet environment in Rwanda is that of the "lack of a clear broadband policy that can guide its development. This is also necessary to provide regulatory guidelines for RURA to take appropriate measures to support broadband expansion within the country. The infrastructure requirements for data networks (backbone and broadband access), including investment needs, have been under consideration. Operations and quality issues with both the access and core networks of licensed operators have led to regulatory challenges, coupled with issues faced with wireless networks and satellite broadband access".

b. Recommendation

i. Cost of access and usage

It is critical that appropriate regulatory measures are taken to make sure that potential customers such as government entities, small and mid-sized businesses (SMEs), civil society organisations and, wherever possible, households can get access to broadband at an affordable price.

ii. Lack of awareness

The need to raise awareness to its potential customers (especially in the private sector), are not informed about the benefits and/or potential benefits offered by broadband technologies. It is therefore critical to initiate awareness campaigns to inform and sensitise the general public on the benefits of broadband, including general cost saving. (APC, 2009)

2.6 Internet policies

There are a number of internet policies that have been adopted and implemented by regional, international and local authorities, one of which is privacy policy.

Privacy policies determine online social network providers' options to monetise user data. However, these statements also intrude on users' privacy and, thus, might reduce their willingness to disclose personal information, which in turn limits the data available for monetisation. Research has emphasised the important role privacy policies play in users' assessments of internet services in general. Note that users need not read the policies in their entirety to become knowledgeable about their contents, since media reports effectively make the policies' commitments transparent to (potential) users. (Gerlack et al, 2015)

According to (Fan, 2005) "Internet access is determined by a combination of a widely available telecommunication infrastructure and affordability of internet services, which are closely related to government policies. Like other countries, some countries have considered the internet a powerful tool for national development economically and socially."

The internet has been seen as the fastest-growing industry and is also very significant. However, the underlying issue is that of communication of policies which have been seen to influence the current growth rates. Therefore, there is a need to identify the regulatory factors affecting internet access in terms of availability and affordability, especially those factors which encourage the creation of a policy and regulatory environment favourable to the development of internet infrastructure and access. This examines the linkages between regulatory regimes, market environments and Internet access. The initial result suggests that government policies governing the

telecommunications service market and promoting information infrastructure have a significant impact on the affordability and availability of Internet access. The most significant factor is the level of competition permitted in the telecommunication sector. It has become clear that further regulatory initiatives such as deregulatory mechanisms and interconnection regimes are needed to establish a more competitive environment for internet access in many countries.

Polat (2012), States that "Over the last few years, the internet and associated technologies have become an essential part of everyday life, affecting education, employment, and leisure, amongst other activities. More and more government services are becoming available online. Nevertheless, many individuals have not been able to extract any benefit from these technologies. Even with the recent expansion of internet access and usage, there are still significant obstacles to be overcome because of the patterns of the digital divide in many countries and analysis of policies related to it". Zambia is no different case; it is still trying to bridge the gap between digital and analogue and policies in this regard are either in draft form or in working progress. The other issue is that these policies, where they are available, are not adequately implemented and citizens and institutions may not be aware of the contents.

2.7 Internet Access

According to Oyebisi (2001), the Internet is simply a 'network of computer networks' which allows computers globally to communicate using telephone lines. It is a computer network which allows computer systems with distinctive software and hardware attributes to be in communication. Broadly, computer networks can be classified either as a local area network (LAN) or wide area network (WAN). A LAN is best described as a network linking computer systems spread across a small geographical area. WAN refers to a network of computers which spans a wider

geographical area up to a worldwide level. Generally, computers are networked for resource sharing, with common resources being information, computer systems (software and hardware) and people, amongst others. Usually, two computer networks are interconnected through a gateway, which essentially is a fully-fledged computer that is connected to both networks with the sole function of routing information as well as ensuring relevant protocols. The internet started as a wide area, packet-switching network called Arpanet in 1969 as an experimental test of the US Department of Defence (DOD). The idea behind it was the construction of networks that could withstand any military assault. The National Science Foundation of the US began a programme to establish network access centred on its six supercomputer centres.

The internet subsequently emerged as a network of networks; billions of bits of information travel around the world on a daily basis, connecting more than 80 million people, but despite sharp increases in both the number of internet users and the amount of money involved in online businesses, the internet remains relatively untouched by legislators around the world. Only recently have law-makers begun enacting statutes aimed at regulating internet content. Few of these attempts are well-planned, leaving them susceptible to grave constitutional problems" (Mayer-Sch6nberger, n.d.)All in all, the internet is a remarkable success story.

Sulan atel (2011) "Internet growth has allowed unprecedented widespread access to cultural creation, including music and films, to knowledge, and to a wide range of consumer information". The internet has brought with it great benefits, it provides open and free access to the internet and has encountered large opposition based on political, economic and ethical reasons. The writers further state that "an ongoing battle over the control on internet access has been escalating on all these fronts. Those who try to restrict, to control or to filter access to the internet include a wide variety of actors

motivated by quite different reasons ranging from security to political and ideological ones, as well as economic interests".

Zambia, like many developing countries where structures for formal policy making and examination are weak or non-existent or prone to manipulation by powerful interested parties, societies can still afford a seemingly artificial detachment on the part of a policy analyst who is the most informed player in the policy environment. Therefore, in these environments, the Action-Oriented Approach is favoured.

Oyebisi (2001) "The socio-economic benefits of the internet, which is the global information super highway, cannot be over-emphasised. Its importance to the commercial life of any nation is compelling and the contributions of the internet to the commercial sector, and its policy and technology management implications. The policy and technology management implications of the internet involve major key-players in the provision and usage of internet services. The key-players are the government, internet service providers (ISPs), the organised private sector, the management of the national carrier. The policy and technology management implications identified which form the basis for maintaining an operative balance between the key players and the need for both ISPs and the corporate users to carry out SWOT analysis and the effective monitoring of the ISPs by the National Communications Commission (NCC). Others include the need for enhancement of co-operation amongst the international bodies, and the provision of adequate and well-functioning telecommunications." NCC is similar to ZICTA, which is a Zambian owned company which oversees the various functions the ICTs companies in Zambia have, it makes sure that all ISPs are complying with Zambian government rules and regulations as well as licensing for all ICTs institutions and/or businesses.

It is important to note here that the "global nature of the internet and its growth outside of the control of governments have meant that there is no international internet governing body. The closest thing to international internet governance is therefore composed of technical bodies, ranging from the engineering side, such as the Internet Engineering Task Force (IETF), to other technical areas such as responsibility for allocating domain names (the Internet Corporation for Assigned Names and Numbers – ICANN), and IP addresses (Internet Assigned Numbers Authority – IANA), or organisations which set generally recognised standards such as W3C. A key example of internet governance in operation is the allocation of Internet Protocol (IP) addresses, a telephone number for each phone, the unique address for every machine connected to the internet. When a user opens a dial-up internet account, the ISP gives it an IP". In Zambia's case, the IPs are allocated by the ISPs.

2.8 Internet Services Providers

Nicol (2003, p, 41), the "internet is decentralised, self-regulating and has become increasingly driven by market forces. In contrast to the traditional telephone system, it is based on packet switching and has developed outside that system's highly regulated structures. As it is based on the technical and commercial interactions between a myriad of internet service providers (ISPs), internet economics is like an ecosystem in which the behaviour of each ISP is shaped by the market forces of these interactions. The opportunity for direct policy inputs is therefore much lower, and the most meaningful interventions are those with commercial relevance. However, there remain fierce debates over its level of inclusiveness and its overall effectiveness".

Rouse (n.d) defines "Internet service provider (ISP) as a company that provides individuals and other companies access to the internet and other related services such as Web site building and virtual hosting. An ISP has the equipment and the

telecommunication line access required to have a point-of-presence on the Internet for the geographic area served. The larger ISPs have their own high-speed leased lines so that they are less dependent on the telecommunication providers and can provide better service to their customers".

Nicol (2003, p 30) "Initially, internet service providers were non-profit organisations such as universities and research institutions. When the internet became a business in 1994, the number of ISPs increased enormously, but as time passed, a process of consolidation took place, with many smaller ISP going out of business or being bought up by the larger ones. In broad terms, most ISPs started out selling 'retail', in other words, directly to customers. As the process of consolidation reshaped the industry, the larger internet connectivity providers began to 'wholesale' bandwidth to 'retail' ISPs; selling to those who service customers directly. In order for any ISP to operate, it has to buy upstream bandwidth connections to allow its customers to access web sites hosted in other countries or to send email between different countries. This has led to the development of a three-tier market structure that mirrors the tele-communications industry".

Internet Service Providers (ISPs) can further be categorised into three i.e. International, Regional and Local

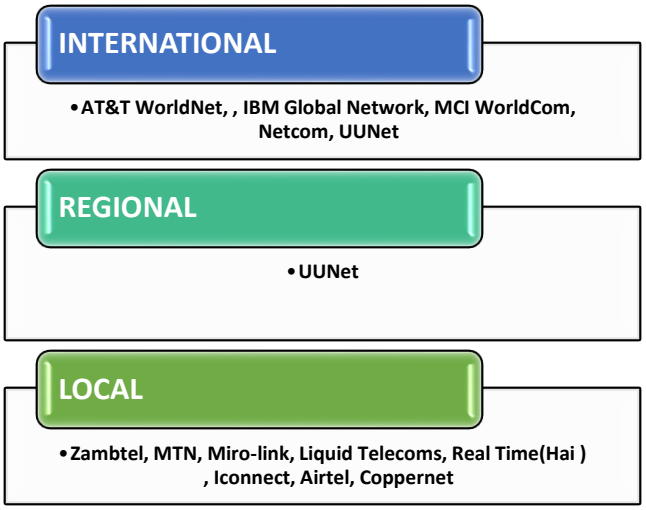

Figure 1: Categories of Internet Service Providers

The following are some of the services provided by the 3 main mobile service providers in Zambia.

Table 3: Mobile Network Operators Services Providers in Zambia

S/N	**MNOs Services**		
	Zamtel	**MTN**	**Airtel**
1.	Internet services: Dongle, internet bundles and Wi-Fi connections,	Internet services: Mobile banking, Insurance, Point of Sale (POS) and Internet bundles	Internet services: Mobile banking, Insurance, Point of Sale (POS) and Internet bundles , 3G services
2	ZTE- Brands : Mobile phones and Dongles	Huawei Brands: Mobile phones, IPads.	Sony Erickson: Mobile phones and I-pads

3	SMS, MMS, Call Conference, Call Waiting, Voicemail, Missed Call, Me2u Service , Free Emergency Services (**999**)24/7 and Toll Free Customer Care (**111**)	SMS, MMS, Call Conference, Call Waiting, MTN Tunes, Voicemail, Missed Call, Free Emergency Services (**999**)24/7 and Toll Free Customer Care (**111**)	SMS, MMS, Call Conference, Call Waiting, Voicemail, Missed Call, Me2u Service , Free Emergency Services (**999**)24/7 and Toll Free Customer Care (**111**)
4	Billing **:** Post-paid and Pre-paid	Billing **:** Post-paid and Pre-paid	Billing **:** Post-paid and Pre-paid
5	Fixed line –PSTN ,Landline (Voice and ADLS), Corporate/government Ministries, Small Medium Entities (SMEs) and House holds	-	-

Nguvu (2016) states that a number of "ISPs complain that the inflexible regulatory regime is a major challenge to their expansion. The time taken for new technologies to be approved has drastically slowed down the implementation of innovative services. The fact remains that there has been no high-level, identified champion for ICT in the Zambian government nor even the private sector. An enabling national climate for ICT investment and adoption is crucial but it requires closer co-operation between different government ministries and between government and the private sector, including effecting transparent public–private partnerships".

The writer further states that other regulatory issues raised by local stakeholders through the Panos London ICT in Zambia survey report include: the implementation of universal access, including the development of broadband access, the lack of regulation on the sharing of communication resources between operators, the absence of performance monitoring, uncertainties concerning the regulation of internet content, inadequate power infrastructure to support ICT services, the implications of convergence between telecommunications and other communication sectors in terms of regulation and licensing".

Government agencies are increasingly using social media to connect with those they serve. These connections have the potential to extend government services, solicit new ideas, and improve decision-making and problem-solving. However, interacting via social media introduces new challenges related to privacy, reliability, security, data management, accessibility, social inclusion, governance, and other information policy issues. The rapid adoption of social media by the population and government agencies has outpaced the regulatory framework related to information, although the guiding principles behind many regulations are still relevant. (Bertot et al, 2012)

The growing use of IT has increased the potential for new ethical issues and problems; thus, many organisations have recognised the need to develop policies that protect against abuses. Although no policy can stop wrongdoers, it can set forth the general rights and responsibilities of all IT users, establish boundaries of acceptable and unacceptable behaviour, and enable management to punish violators. Adherence to a policy can improve services to users, increase productivity, and reduce costs. Companies can take several of the following actions when creating an IT usage policy. (Reynolds, 2015)

According to (David et al, 2015) the "daunting pace of innovation in the information and communications technology (ICT) landscape, of technology and business structure, is a well-known but under-appreciated reality. In contrast, he points at the rate of policy and regulatory innovation is much slower, partly due to its inherently more deliberative character. The writer further describes this disparity in terms of the natural rates of change in different parts of the ecosystem, and examines why it has impeded attempts to impose effective regulation on the telecommunications industry and further goes to explain why a recent movement to reduce this disparity by increasing the pace of regulation – adaptive regulation – faces five obstacles that may hinder its feasibility in the ICT ecosystem. As a means to achieve more sustainable regulatory frameworks for ICT industries, there is need to introduce an approach based on finding stable points in the system architecture and explore the origin and role of these stable points in a rapidly evolving system, and argue that they can provide a means to support development of policies, including adaptive regulation approaches that are more likely to survive the rapid pace of evolution in technology".

2.8.1 Internet Access Barriers

West (2015, p 2) states that "there are a number of key barriers to internet access in the developing world and a number of factors that make it difficult for people to obtain access to the internet. These may include poverty; high device, data and telecommunications charges; infrastructure barriers; digital literacy challenges as well as operational barriers. Policy has not been left out among the challenges being faced. Many countries in the developing world have policy and operational barriers that constrain internet usage, such as monopoly telecommunications providers, tech sector taxes". Zambia has not been left out in the issue of monopoly of telecommunications and internet usage even though it has a number of ISPs in operation. Zambia's Zamtel, which still has the lead, is the case in point.

The writer further emphasises on the challenge of censorship by civil or governmental authorities or regulation by the government. In some places, policy barriers take the form of censorship from the government or civil society that puts information behind a firewall or makes it difficult to access useful content. This is true in authoritarian societies where there is overt censorship and the writer cites China, where there are substantial barriers that block internet content for millions of people. It is estimated that the government employs over 50,000 people whose primary job is censorship enforcement. In other societies, isolationist values may insulate residents from the global world. Authorities in those nations use cultural rationales to keep digital information and services away from their people (West, 2015).

One of the African countries that has seen a substantial growth in internet access between 2010 and 2013 is Tanzania. The country's' Internet usage has risen from 2.9 percent in 2010 to 4.4 percent in 2013 while the number of individuals with fixed broadband subscriptions rose from 3,150 to 51,903 and those with mobile broadband

subscriptions have risen from 466,918 to 1,332,519, points out at the "need for addressing major policy and operational barriers, for having been important, even though a rising number of people in the developing world have gained access to the internet, many remain outside the digital revolution" (West 2015).

It is important to note here that the proposed regulations on Internet applications and services known as over-the-top (OTT) content can smother innovation, inflate costs, and undermine efforts to expand access and despite these harms, some countries such as India are considering regulations on web-based calls and texts.

Regardless of the technological advances achieved so far and the often techno-deterministic approaches to the information society, inequalities in the access to, distribution and use of ICTs such as the internet still highlight the importance of digital divides. The complex nature and continuing importance of the unequal rates of use of ICTs such as the internet invite research to examine their drivers. Ordinary people's everyday life and their awareness and evaluation of policy and regulation are influential factors in how internet use takes shape today. Particular attention is paid to aspects of everyday life and culture, such as resistance to ICTs, and people's awareness and evaluation of internet policy and regulation (Tsatso, 2011)

The writer in this article explores the patterns of the digital divide in Turkey and analyses policies related to this issue and his analysis reveals that the digital disparities are interwoven with other social inequalities and having further considered the current range of policies targeting either ICT accessor skills, he argues that techno-centric solutions with huge budgets occupy the policy agenda at the expense of more sophisticated programmes that take into account the social context of digital exclusion. These policies fail to address the most disadvantaged groups (Pilat, 2012).

Wonglimpiyarat (2014) “the study was concerned with the government policies and programmes that support the process of technology and innovation development of Thailand. His paper also discussed the government policies that promoted the Information and Communications Technology (ICT) businesses. The comparative case of Taiwan had shown that the strong innovation networks under the management of the Ministry of Economic Affairs (MOEA) enabled the successful technology catch-ups. The results showed that the government interventionist models of Thailand and Taiwan had provided various financing policies and programmes that helped develop high technology-based businesses. The analyses of policy implications and strategic implementation of innovation financing programmes provided useful lessons for other developing economies”.

Natali shares the same view as Jarunee, where he states that “Many policy-makers are struggling to understand participatory governance in the midst of technological changes. Advances in information and communication technologies (ICTs) continue to have an impact on the ways that policy-makers and citizens engage with each other throughout the policy-making process”. A set of developments in the areas of opening government data, advanced analytics, visualisation, simulation, and gaming, and ubiquitous citizen access using mobile and personalised applications is shaping the interactions between policy-makers and citizens. Yet the impact of these developments on the policy-makers is unclear” (Marijn and Natalie, 2015).

Sotirioe et al (2015) “People are lately re-considering the advantages of becoming once again an active part of the society, as they everyday discover new ways of connecting with each other towards common goals. This increasing change of attitude calls for new tools and methods as traditional tools for policy making have proved unable to predict and cope with most of today's pressing and persistent challenges”.

The writer further states that "in order to scout towards evidence-based future directions, policy propositions, documented results and conclusions there is need to have an early engagement of stakeholders, openness, user-friendliness and alertness in the whole procedure, which constitutes only a high level presentation of the propositions and implications derived as a result of the analysis which may provide policy makers, practitioners, as well as other interested stakeholders, with a bouquet of (mostly ICT-related) policy implications and practical recommendations that steam through an evidence based, domain-wide study, aiming at directing them towards more efficient and effective launch, steering and sustaining of policy-making initiates some solutions to some of the challenges in policy and regulations implementation".

2.9 Legislation

These are rules and laws made by the government. Legislations can be further broken into a variety of pieces of legislation at national, local, and international levels, including the Constitution, national laws, national administrative regulations and departmental rules, and local regulations.

Most potential solutions fit into four categories: laissez-faire, self- regulation, technology, and the major part played by the legislation/government. The approaches vary in their effective implementation and enforcement of fair information practices. (Jared and Kenneth , 2002).

The rise of platforms in ICT markets invites a re-appraisal of regulatory frameworks and practices. As platforms originating in entirely different sectors increasingly compete directly against each other, regulators ought to address platform competition issues regardless of their sector of origin, and taking into account the specificities of two-sided or multi-sided market business models. These models can help in coming

up with a legislation that offers an exploration of a number of specific concerns that may arise related to specific platform types, and points at a number of instruments available to regulators to address all the regulatory concerns (Pieter and Van, 2011).

The EU institutions are increasingly addressing harmonisation by means of regulation rather than the traditional use of directives. This is particularly impacting areas of concern such as data protection, financial services regulation and European standardisation in Information and Communications Technology (ICT). The writer further states that using directly applicable regulations, which may have horizontal and vertical direct effect rather than directives, has important administrative and constitutional implications for their application in national law and impacts on member States' discretion to implement supplementary legislation, which falls within the remit of the regulation in question. This is of particular concern where governments implement policies which might be in contravention of these rules (Elisabetta, 2013).

2.9.1 Regulatory Structures for ICT and Actors

Every government has various roles it plays, some of which are to pass laws and adopt regulations which may be designed to control certain forms of activity. It is generally recognised that governance and regulation extend beyond governments to encompass a broad range of institutions and mechanisms of control. For instance, some sectors, such as telecommunications based on international best practice is, however, to establish an independent regulator to oversee the competitive liberalisation of the sector, a key infrastructure and driver behind electronic commerce development. (UNECE 2007).

UNECE (2007) State that "Effective regulatory institutions require adequate expertise and resources, which developing countries may find difficult to support. To address

such barriers, capacity building in the regulatory field is a line of activity in most developmental programmes, including training and exchange programmes with developed nations' regulatory institutions. However, such formal institutions can also be supported by non-public sector entities, both commerce and civil society, which can operate in a regulatory capacity, whether directly or indirectly. Self or co-regulation, for example, looks to industry to establish, monitor and enforce rules over its members. While we traditionally conceive of regulation in terms of laws and rules, we must also be aware of other processes occurring at a national and international level that effectively regulate the way a society embraces the manifestations of the Information Economy".

There are a number of approaches to promoting and coordinating government activity towards ICT economy issues and one of the approaches is new institutional entities with a specific remit to address such matters. Therefore, it is important to note here that even though independence is important, it is also necessary to ensure good co-operation and coordination between the different parts of government, which may include the major ministerial departments responsible for finance, revenue and trade. In many countries, especially in developing countries, political support will often be key, mainly in the face of competing political priorities, which may require that such an institution should be associated with the key political actors in a country. For example, Zambia has a number of political parties which make contributions in various pronouncements that the government of the day makes, such as increasing tariffs in the telecommunications industry which also trickle down to the consumers.

2.10 Research Study Framework Definitions

2.10.1 Research Design

Kombo and Tromp (2014) define research design "which can be thought of as a structure of research. It is a "glue" that holds all of the elements in a research project together. A design is used to structure the research, to show how all of the major parts of the research projects work together to try to address the central research questions".

2.10.2 Descriptive Design

This research made use of Descriptive Design, which can be defined as "a method of collecting information by interviewing or administering a questionnaire for a sample of individuals. It can be used when collecting information about people's attitudes, opinions, habits or any of the variety of education or social issues" (Orodho and Kombo, 2002).

2.10.3 Primary and Secondary Data

Primary and secondary data was attained through administering questionnaires and through the use of internet, journals as well as books. Primary data includes the information collected from the key stakeholders such as ZICTA personnel as well as the Ministry of Information Communication and Technology (MoTC), Mobile Network Operators (MNOs) i.e. MTN, Airtel, Zamtel and Internet Service Providers (ISPs) i.e. iConnect, Zamnet, Liquid Telecoms, Hai Technologies and Microlink representatives through questionnaires. Secondary data was collected from the literature review through reviewing policies and laws in place, books, journals, newspapers as well as online scholarly papers and other relevant policy materials.

2.10.4 Qualitative and Quantitative Research

Quantitative method can be defined as "research which is naturalistic; it attempts to study the everyday life of different groups of people and communities in their natural setting; it is particularly useful to study educational settings and processes", while Qualitative method can be defined as an in-depth at non- numerical data collection system. This can be collected from various sources such as archival records, participant's observations, interviews as well as from focus group discussions. (UNISA, n.d).

2.11 Conceptual/ Theoretical Framework

2.11.1 Comprehensive Rationality Theory

The Comprehensive Rationality Theory states that policy decisions are mostly made on the basis of specific and known policy goals. However, once the goals are known or have been determined, the policy decision-making process involves conducting a comprehensive and rational analysis of all alternative approaches and consequences to attaining the goals. Hebert Simon a leading proponent on the rationalist theories, argued that a rational policy decision maker should choose the alternative likely to achieve the optimum desired policy outcome.

It is important to note here that there are a number of issues generated by this approach to policy decision making and these include:

i. How are realistic goals to be determined in the first place?
ii. How are these realistic goals set in a brainstorming situation without the benefit of some prior immersion into the issues and options?
iii. Is all the information relevant in the policy making decision readily available?

iv. How comprehensive can the analysis be, especially in a rapidly changing environment like that obtaining in the ICTs sector; where there are ever rapid changes in the environment?

v. What is the scope in this model for alteration of the course of the policy making once the comprehensive analysis has been conducted and a specific path is embarked on?

Figure 2 below depicts how policy-makers are often faced with multiple objective functions to optimise against.

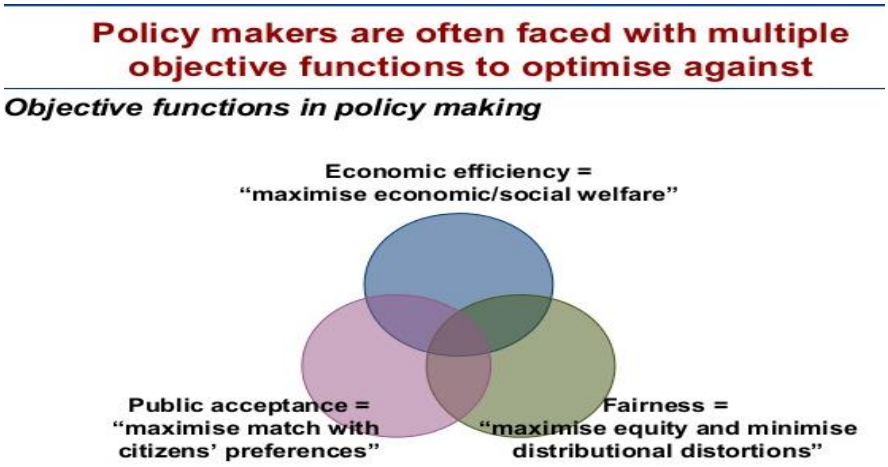

Figure 2: Objective Functions in Policy Making ***Source: Allas (2013)***

2.11.2 Policy Formulation Process

Alien and Glyn (2004) designed a theoretical framework that describes the process of policy formulation as regards the policy being developed, ICT policies included. However, the diagram does not include enforcement stage, which is crucial to ICT policies, which gives way for an evaluation.

Figure 3 and Figure 4 depict the different policy cycle and/ or process.

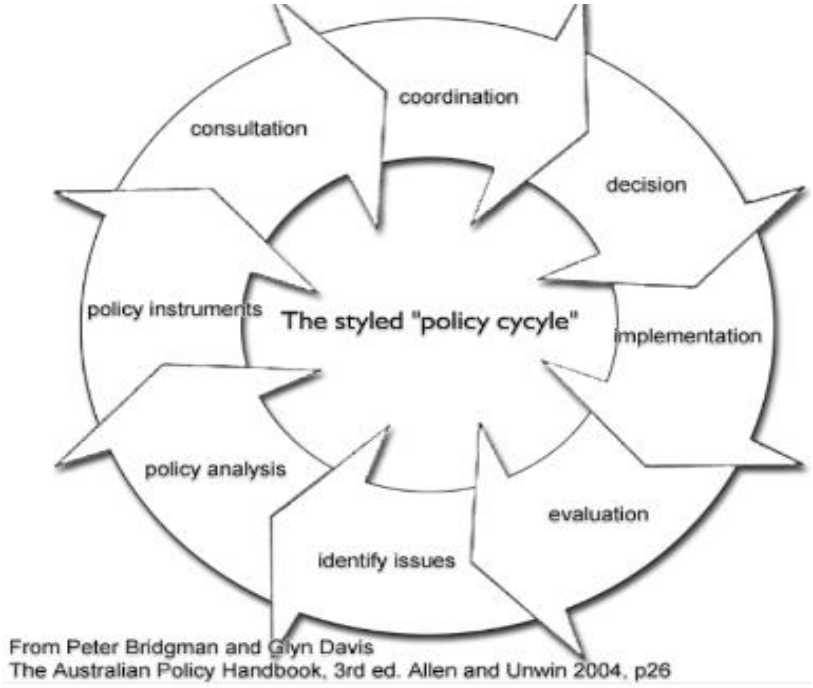

Figure 3: Policy Cycle

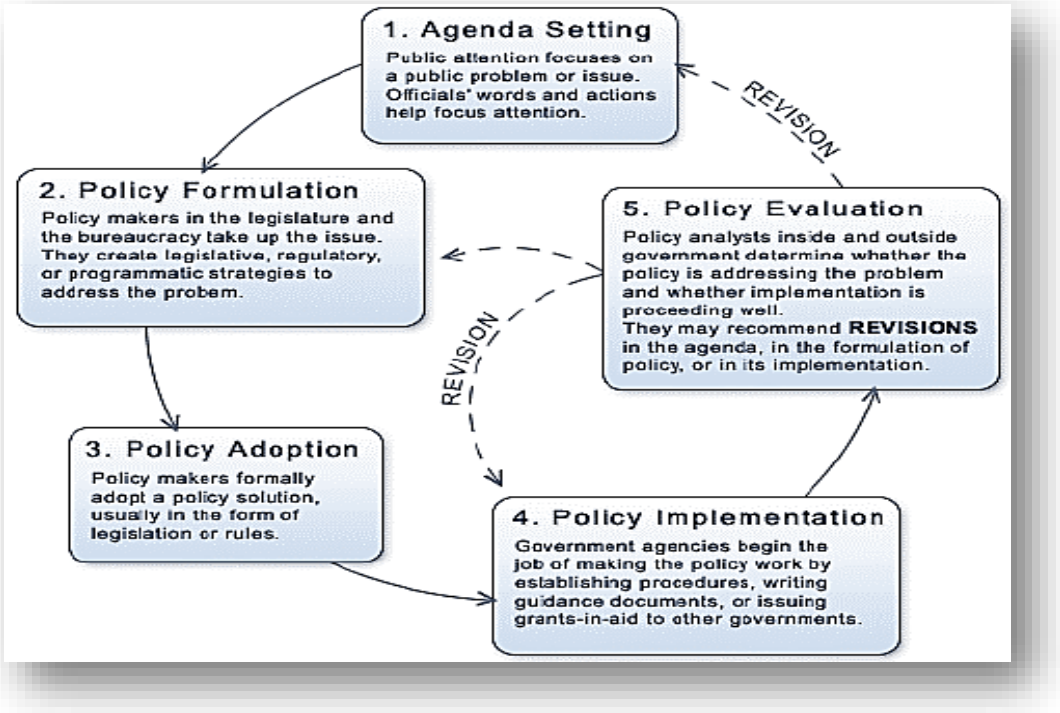

Figure 4: Policy Formulation Process

Janssen (2014) “during his talk on ‘ICT Invading Policy Making’. Prof Janssen made sure to include the policy enforcement in the policy formulation cycle”. He realised the importance of enforcing policies as seen in the diagram below:

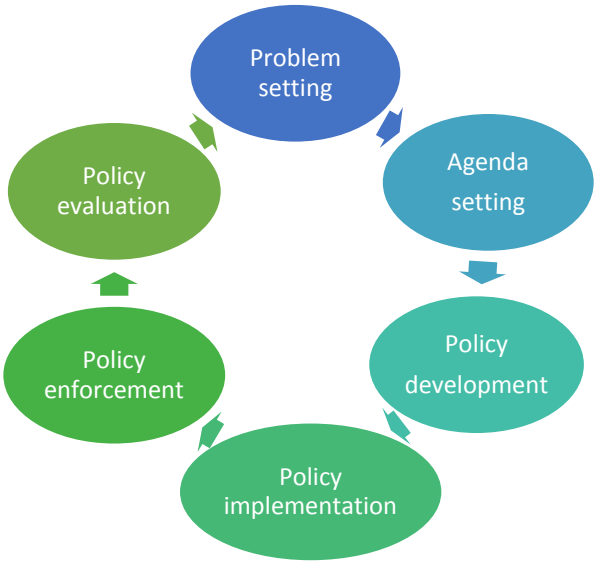

Figure 5: Policy Formulation Cycle

2.12 Summary

This chapter reviewed various pieces of literature that are in line with the study. The literature indicated that Zambia has a number of policies and legislation that speak to internet access and usage. However, the notable challenges are those of communication, ownership and coordination between the key stakeholders and the regulator. This was seen through pervious related studies reviewed from other countries. This chapter also discussed provisions at international, regional and local levels in relation to policies and legislation.

CHAPTER THREE: METHODOLOGY

3.1 Introduction

This chapter outlines the research methodology, which explains the research design, how the selection of the sample was conducted, the sample location and also the data analysis among others. This chapter further describes the research instruments employed in the study. The analysis of the data was selected with respect to research objectives and research questions as discussed in chapter one.

3.2 Research Design

The research study used a descriptive design as seen in Table 4 below:

Table 4: Study Framework

RESEARCH PHASE	**ACTION**
Study Description	Chapter One (background, introduction) and Literature review
Literature Review	Journals, Books, Newspapers, Policies,
Research Design	Descriptive design, Primary and Secondary data
Research Instrument	Questionnaires(Hand-delivered), Qualitative and Quantitative Research
Data Collection	Literature review, completed questionnaires
Data Analysis	SPSS version 20.0
Sample Size and Target Population	50 respondents, ISPs , MNOs, ZICTA and MoTC

3.3 Target population

According to Fricker (2017), "the target population is the group of elements to which the researcher wants to make inference, at least theoretically, the population is finite and can be counted. The fundamental units of the population are elements often, elements are persons, and they can also be households, housing units, parts of an organisation".

Zambia has over 15 active ISPs and 3 active MNOs, ZICTA as the regulator and the Ministry of Information and Communication as the key ministry of ICTs. A total of 50 questionnaires were distributed among 10 institutions i.e. 5 questionnaires per institution.

3.4 Locations of the Study

This research used Purposive Sampling to select Lusaka district. Purposive Sampling can be defined as "sample method, where the research purposively targets a group of people believed to be reliable for the study". (Kombo and Tromp, 2014). The research site for this study was Lusaka Province, this location was selected as most of the targeted population's headquarters are located, i.e. the MNOs, ISPs as well as Ministry of Transport and Communication and the Regulator's office ZICTA. The institutions selected are mostly centred in Lusaka while spreading their services to the other towns and districts through the approval of licences by the regulator.

3.5 Sample Selection

A sampling selection can be used to identify the elements of the population that are either explicit or implicit enumeration (Fricker, 2017). This research included Zambia Information and Communications Technology Authority (ZICTA), Ministry of Communication and Transport (MoCT), Mobile Network Operators (MNOs) i.e.

MTN, Airtel, Zamtel and Internet Service Providers (ISPs) i.e. I-connect, Zamnet, Liquid Telecoms, Hai Technologies and Microlink as respondents.

The key informant respondents were engaged through qualitative approach i.e. through the use of administering questionnaires.

Table 5 below describes the number of questionnaires distributed and finally the total collected for each selected institution.

Table 5: Number of Questionnaires Distributed and Collected

Type of Institution	**Name of Institutions**	**Questionnaires Distributed**	**Questionnaires Collected**
MNOs	**Airtel**	5	0
	Zamtel	5	5
	MTN	5	5
ISPs	**iConnect**	5	5
	Microlink	5	0
	Liquid Telecom	5	5
	Zamnet	5	5
	Hai	5	5
Regulators	**ZICTA**	5	4
	MoTC	5	4
Total		**50**	**38**

3.5 Research Instruments

There are a number of research instruments to be used when conducting a research i.e. questionnaires, interview schedules, observations and focus group discussions.

The research used questionnaires as the mean instrument of data collections. The data collected was analysed through the use of Statistical Package of Social Sciences (SPSS) version 21.

3.6 Data Collection Techniques

The data used was collected quantitatively through administering closed questionnaires. The questionnaires consisted of closed-ended questions while other information was collected through relevant document reviews i.e. the internet, scholarly papers, books and journals.

The questionnaire used five-level Likert scale 1- 5 i.e. **Strongly Agree- 1 , Agree- 2 Neutral- 3 , Disagree- 4** and **Strongly Disagree-5.**

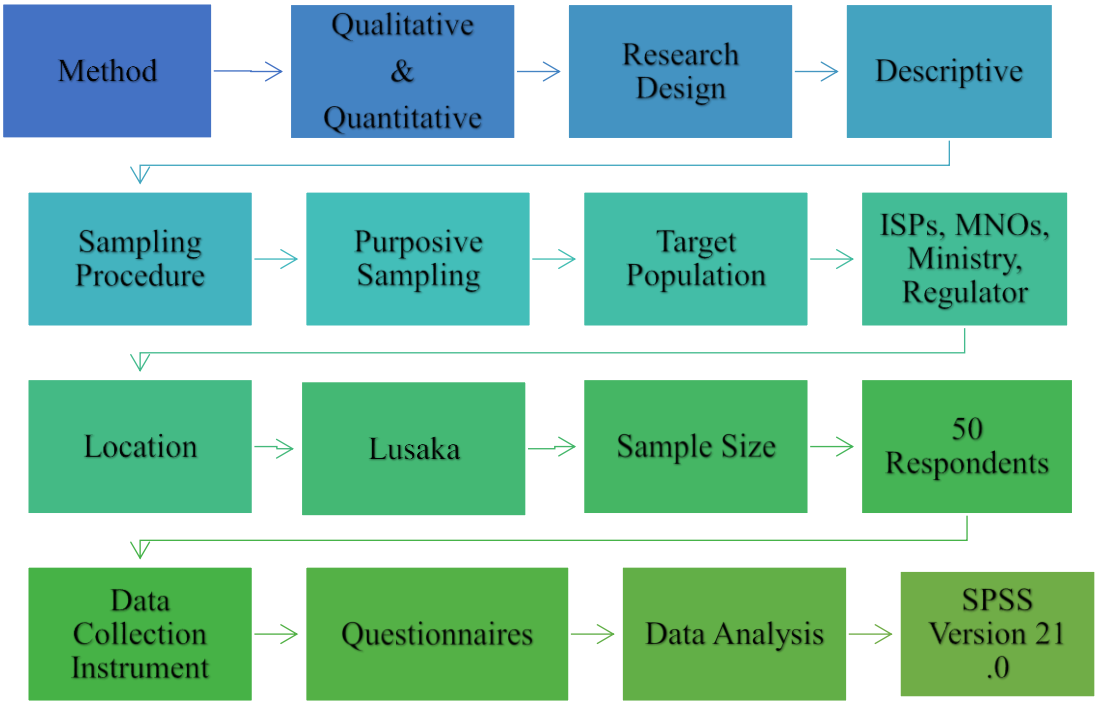

Figure 6: Data Collection Techniques

3.7 Summary

This chapter outlined the type of data collected, the methodology used, the sample size as well as the location of the study. The methodology further discussed in detail the research design as well as the sample selection.

CHAPTER 4: ANAYSIS AND RESULTS /FINDINGS

4.1 Introduction

This chapter discusses the analysis and the results/ findings based on the research objectives and the research questions. This section further outlines the results based on the ISPs, MNOs, Regulator (ZICTA) and the Ministry of Transport and Communication responses.

4.2 Data Analysis

The results revealed that the regulator was not too clear as to whether Zambia has policies that specifically address internet access and usage. This was represented as seen in Figure 7, where 3 respondents, representing 75% responded neutrally and 1 respondent, representing 25% agreed with the statement.

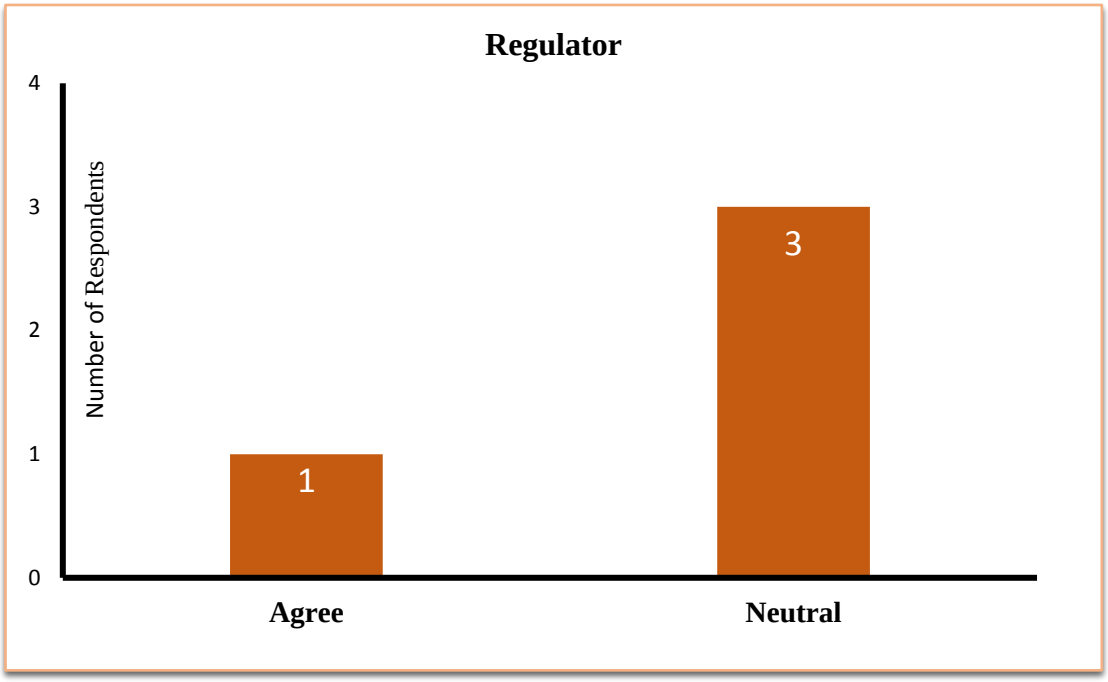

Figure 7: Addressing Internet- Specific Policies (Regulator)

The results further revealed that based on the ISPs and MNOs responses they disagreed as seen in Figure 8 that Zambia does not have specific policies that address internet access and usage. This was represented by 13 respondents.

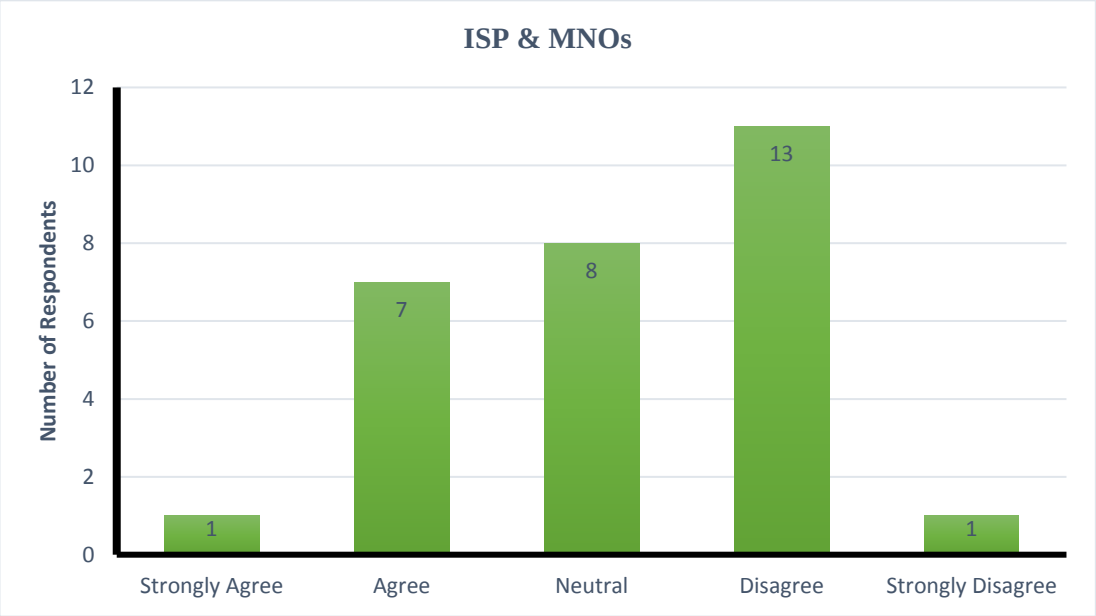

Figure 8: Addressing internet specific policies (ISPs& MNOs)

The majority of the respondents represented by 12 respondents, represent 43% agreed that the regulator has the capacity to regulate the ISPs and MNOs while 8 respondents, representing 29% of the respondents, disagreed, saying the regulator does not have the capacity to regulate the ISPs and MNOs. This, however, indicates that there is lack of understanding of the role of regulatory agency as seen in Figure 9.

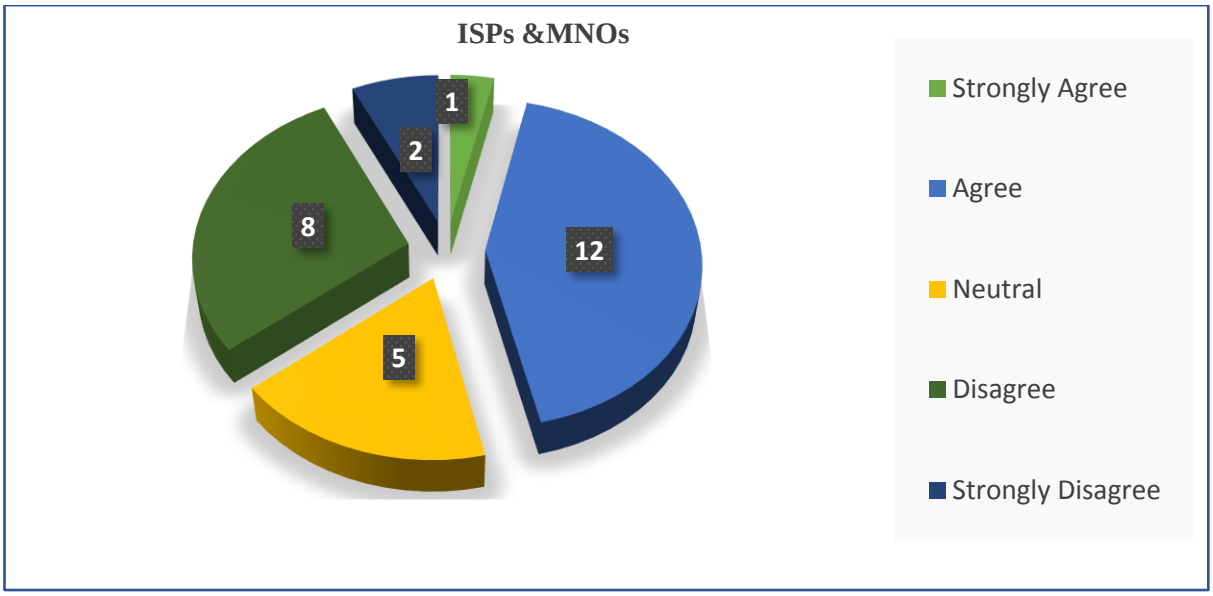

Figure 9: Capacity to Regulate ISPs and MNOs

The results revealed that the majority of the respondents as seen in Figure 10 agreed that indeed there is stakeholder involvement in the implementation of ICT policies.

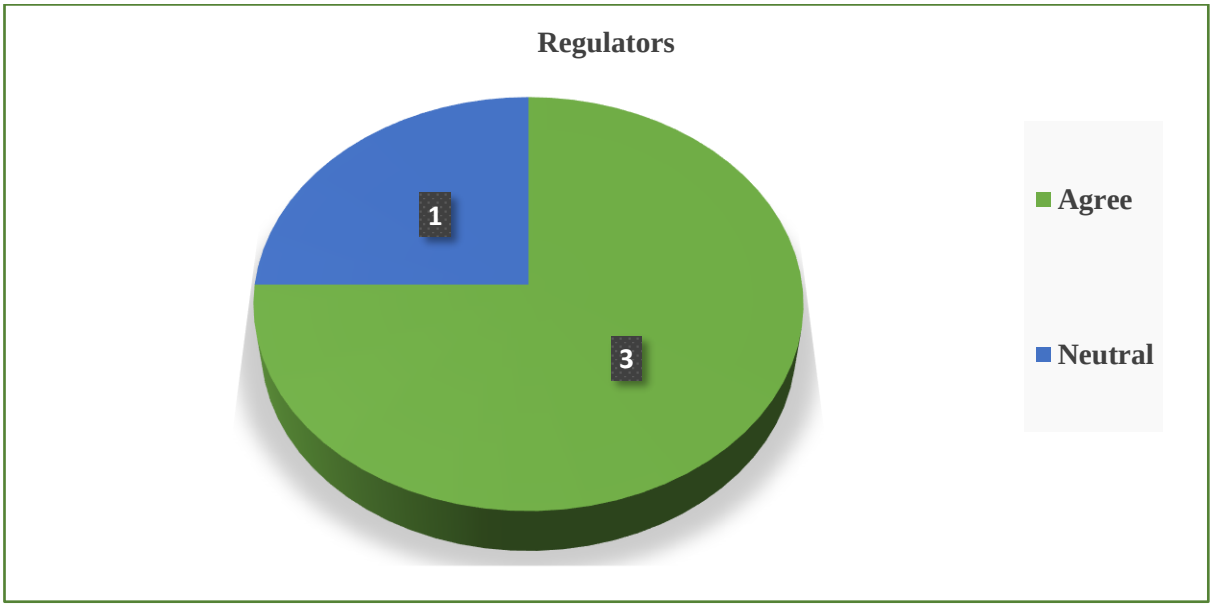

Figure 10**:** Stakeholders Involvement in Implementation

The results further revealed that the stakeholders are not involved in the implementation of the policies as seen in Figure 11 .Therefore, there is need to revisit

the levels of involvement by the various stakeholders such as the ISPs and MNOs so as to better deliver the services.

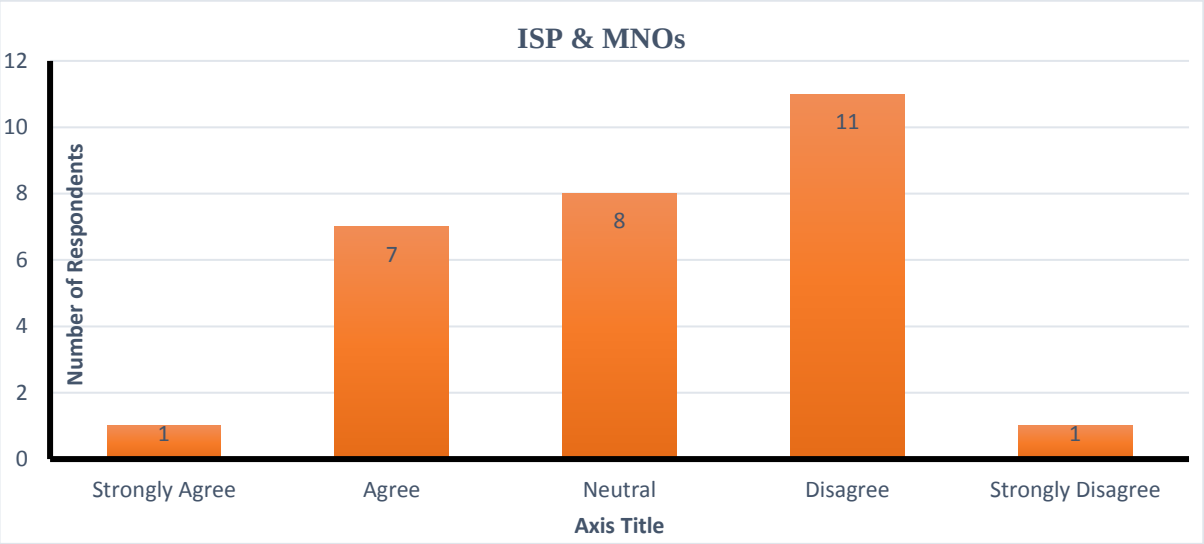

Figure 11: Stakeholders Involvement in Implementation

4.3 Findings/ Results

The research revealed that the majority of the respondents, based on the ISPs and the MNOs responses, agreed that Zambia has policies and legislation for internet usage and access in place. Further, the results revealed that ZICTA and MoTC equally agreed with the ISPs and MNOs the Zambia does indeed have policies and legislation for internet usage and access in place. Therefore, it is clear that the regulator, the ministry and the ISPs and MNOs are all aware of the various policies and legislation that Zambia has put in place for internet usage and access.

The results showed that the majority of the respondents, based on the regulator's point of view, representing 50% agreed that the regulator has the capacity to regulate the ISPs and MNOs while the results, based on ISPs and MNOs responses, revealed that 43% of the respondents agreed while 29% of the respondents disagreed that the regulator has the capacity to regulate the ISPs and MNOs. The majority of respondents

from the MoTC, representing by 67% agreed that the regulator has the capacity to regulate the ISPs and MNOs while 33% strongly agreed.

The results further showed that the majority of the respondents, based on the regulator's point of View representing 50%, agreed that the regulator has the capacity to regulate the ISPs and MNOs, which was echoed by the MoTC, where 67% agreed that the regulator has the capacity to regulate the ISPs and MNOs while 33% strongly agreed. On the other hand, the majority of the ISPs and MNOs, representing 43%, agreed while 29% of the respondents disagreed that the regulator has the capacity to regulate the ISPs and MNOs. Therefore, based on the results it is clear that there is some form of understanding of the role of the regulator but there is need for a clear distinction of the roles between the regulator and the service providers as a whole.

In relation to policy formulation and stakeholder's involvement, the results revealed that 37% of the respondents, based on the ISPs and the MNOs, agreed that they have an input in the process of policy formulation and 50% of the respondents, from the regulator's point or view, equally agreed that the stakeholders are indeed involved in the input of the policies. Furthermore, the majority of the respondents, representing 67% agreed that ISPs and MNOs do indeed have an input in policy formulation and 33% strongly agreed. This clearly shows that there is involvement by the stakeholders during the process of policy formulation at all levels.

The results further showed that the responses, based on the ISPs and MNOs had mixed reviews where 26% of the respondents agreed and 15% of the respondents disagreed while 48% of the respondents were unclear as to whether Zambia's regulator conforms to the standards and recommendations set by the International Telecommunication

Union (ITU) when developing policies and legislation. This was not the case with the regulator and the ministry. The results showed that 100% agree that they conform which was seconded by the 67% of the respondents from the ministry. The mixed results may be attributed to the lack of sharing sessions particularly on the requirements of ITU in relation to ICT policies.

4.4 Summary

This chapter discussed the findings based on the data collected as well as the findings in the literature review. The findings revealed that, based on the objectives and the research questions; there is lack of Coordination between the ISPs & MNOs and the regulators; lack of Collaborations between the sectors, ISPs, MNOs, Regulator and the line ministries tasked with the responsibility of ICT policy implementation, unclear information as to whether Zambia has specific internet policies and the need for ICT policy awareness and periodic reviews to address the emerging issues.

CHAPTER FIVE: DISCUSSION

5.1 Introduction

This chapter discusses the results of the study. As discussed earlier, the aim of the research was to investigate the current policies and legislation which address internet usage and access in Zambia, whose significance, among others, was to generate information on the available policies and legislation on internet usage and access in Zambia and provide recommendations on the review of current ICT policies. Therefore, the results are anticipated to assist regulatory bodies and other stakeholders to ensure that efforts in addressing the need for regulation of internet usage is adhered to in Zambia.

5.2 Discussion

Zambia has a number of policies which were developed as far back as 2009 and over the years a number of technological advancements have taken place, including the number of people using internet services either for personal use or work-related. However, Zambia still does not have a specific internet policy on usage. With changing and developing technology, ZICTA has a huge task of managing the service providers in that there is need for the regulator to provide checks and balances in order to close up gaps on doubts as to whether ZICTA as the capacity to regulate the service providers. This was evident in the varying responses indicating that the regulator has some work to do in order to provide the much needed support both to the service provider and the consumer e.g. awareness raising on the role of the regulator as well as consumer protection and quality of service in relation to internet usage and access.

Stakeholder involvement is an essential aspect of service provision and the collaboration between the regulator and the service providers is one of them. However,

it was noted that the service providers indicated that they are not involved in the implementation of policies because the task is given to government ministries that are responsible for ICT policy implementation, which is also dependent on the availability of funds. This is evident in the varying responses given by the regulator and the service providers.

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The data analysed was based on the research objectives and the research questions as seen in Table 6.

Table 6: Research Objectives and Research Questions

OBJECTIVE	**RESEARCH QUESTIONS**
1. To investigate policies and legislations on internet usage	What policies and legislations are there for implementing internet access and usage?
	What policies and legislation are in place relating to internet access in Zambia?
2. To investigate the roles of regulatory agency in internet usage.	What is the role of regulatory agencies in the implementation of policy and legislations regarding internet access and usage?
	Who are the key stakeholders in the implementation of internet policy and legislation?
3. To determine implementation of internet policies and legislation.	How can we determine the effectiveness of internet access, policy and legislation in Zambia?

In summary, based on the research objectives, the following emerged as the main issues:

i. Lack of coordination between the ISPs & MNOs and the regulators,
ii. Lack of collaborations between the sectors, ISPs, MNOs, regulator and the line ministries tasked with the responsibility of ICT policy implementation.
iii. Unclear information on whether Zambia has specific internet policies
iv. The need for ICT policy awareness.

5.4 Summary

This chapter discussed the research findings based on the research questions and the research objectives. The chapter further discussed the conclusions and the recommendations based on the data analysed.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

The chapter discusses conclusions and the recommendations based on the data analysed.

6.1 Conclusion

Zambia has a well-established policy development system. The only challenge is the length of time and resources taken in developing the policies. However, it is important to note here that information system is essential for efficient management and operation of the public and private sectors. Therefore, ICTs policies should be formulated at organisational level as well as national level.

It is evident that Government has policies that allow internet access and usage, hence the various licences allocated to the various business houses. The major challenge is lack of communication and coordination between the ISPs/ MNOs and the regulator including government line ministries. Therefore, there is need for frequent meetings with the ISPs and MNOs with the regulator to address the various gaps encountered in implementing the current policies. Further to this, there is need for Zambia to operationalise the ICT policy, which can lead to the transformation of the technology of the various sectors.

The most significant factor is the level of competition permitted in the telecommunication sector. It has become clear that further regulatory initiatives such as de-regulatory mechanisms and interconnection systems are needed to establish a more competitive environment for internet access in Zambia, e.g. the introduction of Vodafone in the provision of 4G internet services.

Advocacy and sensitisation for all stakeholders i.e. Government, the service providers, policy-makers and the beneficiaries on the importance of ICT policies and their benefits.

Monitoring and Evaluation of any policy is cardinal; therefore, the current Zambian ICT policies need to undergo a frequent Monitoring and Evaluation, so as to move with the current pace of internet service provision as ICTs generally improves daily.

ICT policies and legislation are very important for every country in today's world being that the world is connected through the internet. The research endeavoured to ascertain whether the current policies and legislation are indeed relevant in addressing internet access and usage in Zambia. The research equally aimed at analysing current policies and legislation in addressing internet usage and access in Zambia both by the regulators and service providers.

6.2 Recommendations

i. It is evident that the Zambian government has put in place a number of policies to address various ICT sectors but it, however, does not have a specific policy addressing internet usage.
ii. There is need to review current policies, as some date as far back as 1994, the ICT sector is an evolving sector, hence the need to review policies regularly to meet the current changes.
iii. Regulator involvements e.g. conducting performance checks and consultative sessions with the various stakeholders e.g. ISPs, MNOs, the Ministry and the general public.
iv. Sensitisation and awareness raising on the contents of the various ICT policies e.g. Computer Misuse and Crimes Act of 2004

v. Regular planning, monitoring and evaluation of the current policies to ascertain their usefulness and effectiveness as well as the level of adherence by the stakeholders.

REFERENCES

Bissell, T. (n.d), The Digital Divide Dilemma: Preserving Native American Culture While Increasing Access to Information Technology on Reservations, Volume 14.

Dawson W.C (2nded) (2009), Projects in Computing and Information Systems, Pearson Education Limited, London

David D. Clark K.C Claff, 2015. Telecommunication Policy. Anchoring policy development around stable points An approach to regulating te co-evolving ICT ecosystem, Volume 39, pp. 849-860.

Elisabetta.R, 2013. The legal effects of EU regulations. Computer Law and Security Review, Volume 29, pp. 437-445.

Explorable, (n.d) Available from: http://www.explorable.com/convinence-sampling [Access on 17th February, 2015]

Fricker R. (2017), Target Populations, Sampling Frames, and Coverage Error Naval Postgraduate School Monterey, California, http://faculty.nps.edu/rdfricke/MCOTEA.pdf [Accessed 07/07/17]

George W.Reynolds, 2015. Ethics in Information Technology. 5 ed. Boston: Cengage learning.

Grover S.L.. (2013) Fair Workplace Regulation of Internet Usage School of Business, University of Otago, New Zealand, Asia Pacific Management Review 19(1) (2014) pp. 99-115.

Internet Society origins (n.d) Available from: http://www.internetsociety.org/internet/what-internet/history-internet/brief-history-interne#Originss [Accessed on 14th February 2015]

ICT Forldc, (n.d) www.ictforldc.com/index [Accessed on 14th June 2015]

Jared S,Kenneth S. , 2002. Policies for online privacy in the inited states and the European Union. Telematics and Informatics, Volume 19, pp. 173-192.

Jarunee Wonglimpiyarat, 2014. Innovate policies to support Technology and ICT development. Government Information quarterly, 31(2), pp. 466-475.

Jin Gerlack,Thomas Widjaja,Peter Bxmann, 2015. How online Social network providers privacy policies impact users information sharing behaviour. Journal of startegic information Systems, Volume 24, pp. 33-43.

John Carlo Bertot,Paul T Jaeger,Dereck H, 2012. The impact of policies on overnment social media usage:Issues,challenges and recommendation. Government information Quarterly, Volume 29, pp. 30-40.

Kandiri J.M (N.D), Ict Policy in Kenya and Ways of Improving the Existing ICT Policy Strathmore University, Kenya.

Kombo D.K and Tromp D.L.A (2014), Proposal and Thesis Writing- An Introduction, Nairobi Kenya: Paulines Publications Africa.

Marijn J; Natalie. H, 2015. Innovating and changing the policy-Cycle:Policy-Makers be prepared. Government infoamtion quarterly, Issue 26.

Mwansa A, Zambia Daily Mail News Paper, Friday 11th, September 2015, Article on ICT policy will attract investors

Nicol C. (2003), ICT Policy: A Beginner's Handbook, the Association for Progressive Communications - www.apc.org [Accessed on 13/01/2017]

Zambia Information and Communications Technology Authority, (2015) Available from: http://www.zicta.zm [Accessed on 14th June 2015]

Nguvu A. Z. (20th January 2016); Why ICT in Zambia is undeveloped in Business, Social Media, Technology; http://www.manic.co.zm/ict-in-zambia-undeveloped/ [Accessed 07/04/16]

Nsengiyuma A. and Hanumuremyi E. (September 2009); A review of telecommunications policy development and challenges in Rwanda Association for Progressive Communications (APC)

Panayiota Tsatso, 2011. Wyh internet use:A qualitative examination od the role of everyday life and internet police and regulation. Technology in society, Volume 33, pp. 73-83.

Pieter.B;Eric Van.H, 2011. Telecommunications Policy. ICT platforms and regulating concerns in Europe, 35(7), pp. 702-714.

Qiuyan Fan, 2005. regulatory factors influencing internet acces in Australia and China:Comparative analysis. Telecommunications and Policy, Issue 29, pp. 191-203.

Rabia Karakaya Polat, 2012. Digital exclusion in Turkey:A policy perspective. Government Information Quarterly, Issue 29, pp. 589-596.

Rabia Kavakaya Pilat, 2012. Digital exclusion in Turkey:A policy perspective. Governement information Quartely, 29(22), pp. 589-596.

Ruben V,Johan Van b,Sara Dexter, 2012. ICT Policy planning in a context of curriclum reform disentanglemen of ICT policy domains of artifacts. Computers and Education, Volume 58, pp. 1339-1350.

Sampling, dissertation (n,d) Available from: http://www.dissertation.laerd.com/purposive-sampling.php [Accessed on 17th February 2015]

Sanli,B(2015) International Technological Diffusion Channels, and Technology Policies in Turkey Istanbul University, Faculty of Economics, BeyazÕt, Istanbul 34452, Turkey.

Sotirios Koussouris ; Fenareti Lampathaki ; Panagiotis Kokkinakos ; Dimitrios Askounis ; Gianluca Misuraca , 2015. Accelerating policy making:Innovate direction and research perspectives as distlled from four stadouts cases. Government information Quarterly, 32(4), pp. 142-153.

Sulan Wong a, Eitan Altmanb, Julio Rojas-Mora c, 2011. Internet access:Where law,economy,culture and Technology meet. Computer networks, pp. 470-479.

Tera Allas, Cost Benefit Analysis I n Policy making, 18th November 2013. http://www.slideshare.net/bisgovuk/cost-benefit-analysis-in-policy-making-ta-1811133 [Access on 21/12/2016]

The Internet Legislative and Policy Environment in Kenya January 2014, ISBN: 9966-941-84-3 Published by, Kenya Human Rights Commission (KHRC),

T.O.Oyebisi, (2001); The internet and the commercial sector of the Nigerian economy Policy and Technology management Implications. Tehnovation, pp. 369-374.

West G.R (2015) Ethics in Information Technology. 5 ed. Boston: Cengage learning.

Souter D, (2009); The APC ICT Policy Handbook, The association for progressive communications - www.apc.org. [Accessed on 15/04/2017]

United Nations Economic Commission for Europe Information and Communication Technology Policy and Legal Issues for Central Asia Guide for ICT Policymakers United Nations New York and Geneva, 2007 http://www.unece.org/fileadmin/DAM/ceci/publications/ict.pdf [Accessed on 25/04/16]

United Nations Economic Commission for Europe Information and Communication Technology Policy and Legal Issues for Central Asia Guide for ICT Policymakers UNITED NATIONS New York and Geneva, 2007 http://www.unece.org/fileadmin/DAM/ceci/publications/ict.pdf [Accessed on 25/04/16]

Viktor Mayer-Sch6nberger, n.d. Internet Privacy. the internet and privacy Legislation.

Zambia Information and Communications Technology Authority, (2015) Available from: http://www.zicta.zm [Accessed on 14th June 2015]

APPENDIX

Appendix 1: Questionnaire

UNIVERSITY OF ZAMBIA - SCHOOL OF ENGINEERING

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Nature of Business

……

1. Strongly Agree	**2. Agree**	**3. Neutral**	**4. Disagree**	**5. Strongly Disagree**

Please use the Scale above to Rate the various statement presented below

No	**Questions**	**Score Out of 5**				
1	Zambia has Policies and legislation for implementing Internet Access and Usage	**1**	**2**	**3**	**4**	**5**
2	Stakeholders are involved in the implementation of Policy and Legislations in relation to Internet Usage & Access	**1**	**2**	**3**	**4**	**5**
3	Zambia has Policies and Legislation in place that support internet access	**1**	**2**	**3**	**4**	**5**
4	Zambia has specific Policies addressing Internet Access and Usage	**1**	**2**	**3**	**4**	**5**
5	The existing Policies and Legislation support Internet Access and Usage	**1**	**2**	**3**	**4**	**5**

6	Stakeholders have been greatly appreciated in the implementation of Policies and legislations for Internet Access and Usage	**1**	**2**	**3**	**4**	**5**
7	Zambia has polices that are easily accessed by the stakeholders and the general public.	**1**	**2**	**3**	**4**	**5**
8	The regulators have the capacity to regulate ISPs and MNOs in the development on policies regarding internet access and usage	**1**	**2**	**3**	**4**	**5**
9	Policies and legislation do not fully support the implementation for access and usage in Zambia.	**1**	**2**	**3**	**4**	**5**
10	Polices and legislation in relation to internet access and usage is important.	**1**	**2**	**3**	**4**	**5**
11	The policies explicitly address the need for internet access and usage in Zambia.	**1**	**2**	**3**	**4**	**5**
12	ISPs and MNOs have input in the policy formulation in relation to internet access and usage.	**1**	**2**	**3**	**4**	**5**
13	The policies and legislation address the issues surrounding access and usage in Zambia	**1**	**2**	**3**	**4**	**5**
14	The policies and legislation in Zambia are being able to improve internet access and usage.	**1**	**2**	**3**	**4**	**5**
15	Regulators are effectively and efficiently managing the Internet Service Providers and Mobile Network Operators in Zambia in relation to internet access and usage.	**1**	**2**	**3**	**4**	**5**

16	Policies and legislations are being applied	**1**	**2**	**3**	**4**	**5**
17	The current policies and legislation benefit the Internet Service Providers and Mobile Network Operators in Zambia.	**1**	**2**	**3**	**4**	**5**
18	The current policies are improving the Internet Access in Zambia.	**1**	**2**	**3**	**4**	**5**
19	The policies and legislation standards conform to the International Telecommunication Union (ITU) recommendations	**1**	**2**	**3**	**4**	**5**