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Chapter 1: ICT access and socioeconomic development

1.1 Introduction

The proliferation of advanced digital information communications technologies (ICTs) has changed the nature of global socio-economic activity. According to Castells (1999: 3) this crucial role of information and communication technologies in stimulating development is a double edged sword. On the one hand, ICTs allow countries and organisations to leapfrog stages of economic growth by being able to modernise their production systems and increase their productivity (Castells: 1999: 3). This creates a high level of reliance on ICTs, by these firms and industries, as a key tool in their quest for continued survival. On the other hand, for those economies that are unable to adapt to the new technological systems, their retardation becomes cumulative (Castells: 1999: 3). Castells further states that the ability to move into the information age depends on the capacity of the whole society to be educated, and be able to assimilate and process complex information.

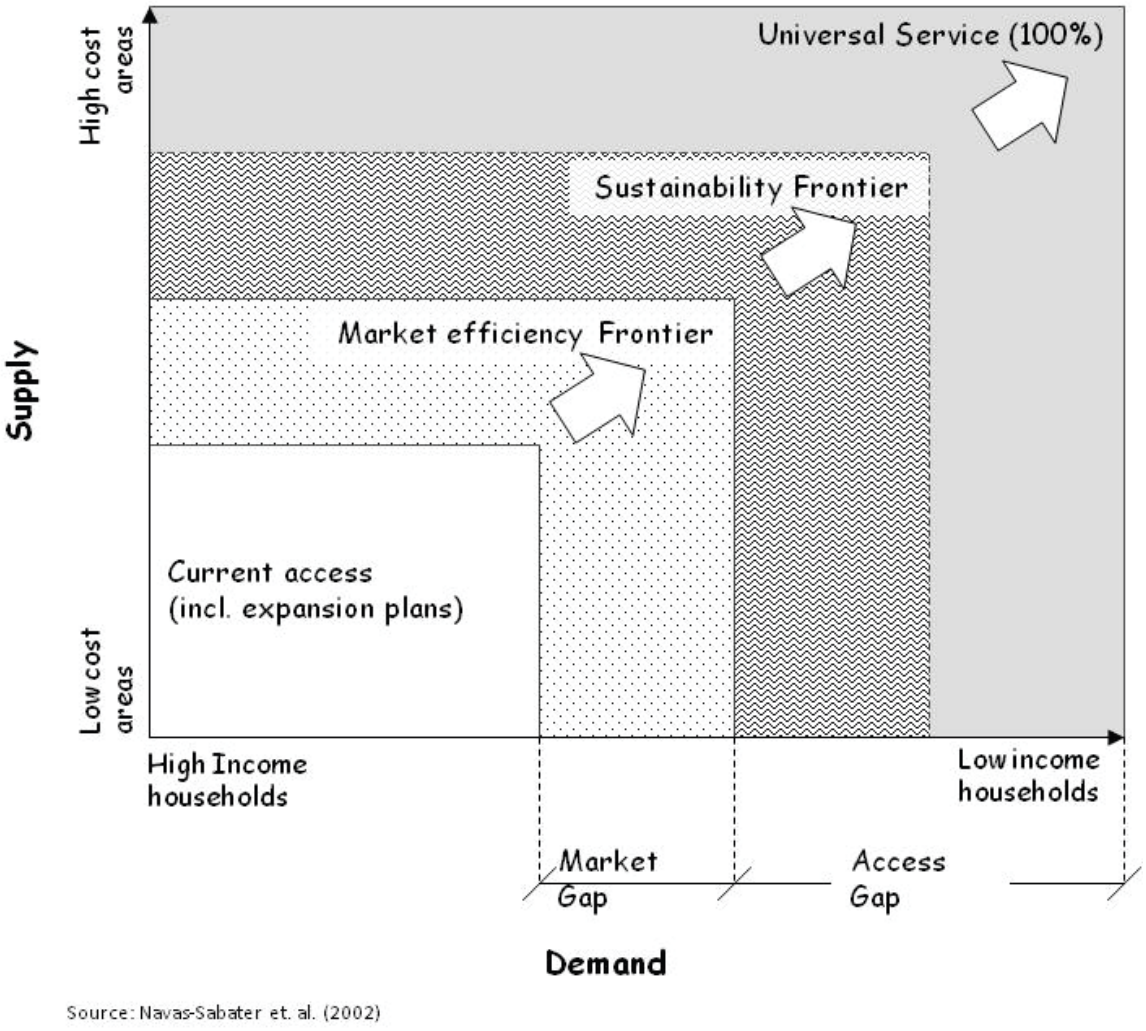
There are numerous reasons for varied access to ICTs amongst communities globally. These include the differences in economic capability, historical experiences and the different priority given to investment in telecommunications in the industrialised world and developing countries (Maitland: 1984: 14). On the other hand, Castells (1999: 3) states that access to and use of ICTs is a pre-requisite for socioeconomic development. Whether ICT deployment leads to economic development or vice versa ("chicken and egg debate"), this suggests the existence of a relationship between ICT access and socioeconomic development in a society.

The skewed access to ICTs has led to socioeconomic inequalities between the information haves (those with access to ICTs) and information have-nots (those

without access to ICTs) in a phenomenon known as the “digital divide”. Mariscal (2005: 410) defines the digital divide as the gap between individuals, households, business and geographic areas at different socio-economic levels with regard both to their opportunities to access information technologies and their use of the Internet for a wide variety of activities. Van Deursen and van Dijk (2010: 893) concur by stating that the term “digital divide” initially referred to gaps in access to a computer, but later shifted to encompass gaps in Internet access given its (the Internet) rapid diffusion to become the primary type of computing in the society. This implies that the digital divide changes over time due to changes in technology.

The existence of the digital divide can also be explained in terms of access gap to ICT services. Market efficiency and true access gaps are the two types of access gaps that explain the existence of the digital divide. Market efficiency gap refers to the difference between what markets are actually achieving under existing market conditions and what they could achieve if regulatory barriers were removed and regulation was used to provide incentives (Dymond and Oestmann: 2003: 58). Mariscal (2005: 411) concurs by stating that the market efficiency gap refers to “the difference between the levels of service penetration that can be reached under current plans and conditions, and the level that could be expected under optimal market conditions”. On the other hand, true access gap refers to a situation where “geographical locations and people remain beyond the limits of the market unless additional investments are mobilized through intervention, in the form of subsidies to encourage investment” (Malik and Da Silva, 2005: 7). Dymond and Oestmann (2003: 58) concur by stating that the true access gap recognises that intervention is still required to reach some areas and population groups that will not be served even with the most optimal, efficient and liberalised market conditions. It can therefore be concluded that universal service funds, universal service obligations and other universality policy interventions are meant to encourage ICT investment thus bridging the true access gap.

Figure: 1. Market efficiency gap and true access gap



Source: Navas-Sabater, Dymond and Juntunen (2002).

Over the years, ICT policy makers and regulators have used various mechanisms to facilitate availability and accessibility to ICTs. These mechanisms include exclusivity periods, universal service funds (USF), access deficit charges, universal service obligations (USOs), and other mechanisms (Intven: 2000: 6-2, Navas-Sabater and Muente-Kunigami: 2010: 30). The implementation of anyone of these mechanisms does not seem to yield similar positive results in various countries and communities (Lewis: 2010, Hodge: 2004). This could be attributed to weak universal access regulation schemes used in different countries. This has

potential to delay the bridging of the digital divide particularly in the developing world.

1.2 Background to Universal Service Obligations in South Africa

In South Africa, the early stage of the digital divide in the fixed voice telecommunications can be attributed to skewed investment practices of the then apartheid system of government, which sought to ensure unequal socioeconomic development in the country. The post 1994 South African government has, for over a decade, used USOs as a mechanism to address the challenge of this divide in the country. These obligations were imposed on network operators (including MNO licensees) as a requirement to operate in the licensed spectrum (Hodge: 2003: 2).

The USOs included various ICT devices and services to be rolled out by all network operators to communities seen as not having access to communication services. These were services like connection of additional customers, the installation of more public payphones, or the provision of network coverage to certain geographic areas or proportions of population in the case of mobile operators (Intven: 2000: 6-11). Commenting on USOs, Lewis (2010: 4) states that USOs typically take the form of requirements imposed on licensed operators to supply certain types of telecommunications or other ICT services to defined classes of customers. Various regulatory mechanisms, systems and processes were used to impose these USOs in South Africa.

Lewis notes that “South Africa’s transition to democracy in 1994 and the country’s subsequent engagement with telecommunications reforms took place against the background of an increasing interest in universal access and service as central sector reform issues”. Consequently, the newly elected ruling party’s (African National Congress-ANC) policy documents and strategy (from the RDP to the

ECA) sought to ensure the provision of accessible and affordable ICT services in the country (Lewis: 2010: 3).

1.2.1 The scope of obligations imposed on mobile network operators

The imposition of USOs on South African mobile network operators (MNOs) can be traced back to 1993. The period 1993-2011 can be categorised into four distinct phases, characterized by reforms in the country's telecommunications industry. The reforms included the changes in the market structure, amendments to legislation, issuing of new policy directives, as well as technological advancement.

The first phase of obligations was from the year 1993 to 1995. This phase occurred before the telecommunications reform in the country, and around the time of ushering of the democratic political dispensation in the country. The absence of sector specific legislation and an independent sector regulator were the two main characteristics of this phase, with the South African Telecommunications Regulatory Authority (SATRA) only established later in terms of the 1996 Telecommunications Act. Consequently, universal service obligations imposed on MNOs during this phase could be said to have emanated from the politically driven need to extend infrastructure services, including telecommunications services, to the vast majority of citizens that had not been serviced under apartheid (Hodge, 2003: 1). This was part of key socio-political reforms in the country, following the systemic and deliberate unequal provision of services, which was the policy and practice of the apartheid government (Lewis, 2010: 3). The Multiparty Implementation Agreement of 1993 was used as a regulatory instrument to impose the USOs on the then recently established MNOs, Vodacom and MTN. Section Four of the agreement stipulated that Vodacom and Mobile Telephone Network (MTN) were to roll out 22000 and 7500 community service telephones (CSTs) respectively (Department of Post and Telecommunications, 1993: 26).

The second phase of licence obligations was effective from the year 1996 to 2000. The USOs that had been identified and imposed for phase 1 were merely transferred to the second phase. During this phase, the Telecommunications Act of 1996 was promulgated. The establishment of the South African Telecommunications Regulatory Authority (SATRA) was another notable development of this phase. It is not clear whether SATRA had any mandate to review the USOs from phase1. The telecommunications market structure still consisted of an incumbent fixed line network operator Telkom and two MNOs, Vodacom and MTN. Subsequent to being licensed to operate in the 900MHz spectrum in 1993, Vodacom and MTN were required to roll out 22000 and 7500 community service telephones (CSTs) respectively as their universal service obligations. These MNOs were required to roll out the CSTs in underserviced areas. They were to be rolled out within 5 years from the date the MNOs started their commercial activities, and such date was to be agreed upon with ICASA (Hodge, 2003: 3). The areas that were identified for CSTs rollout might have been underserviced at that stage. However, there were also townships all over the country and not only in remote rural areas which had even lower tele-density. Furthermore, Vodacom and MTN were each expected to have a network coverage serving 60% of the South African population within two years from the date of their operation (Hodge: 2003: 3). These obligations could be said to have been influenced by the then new democratic government in the country, which sought to ensure access to ICTs by all South Africans particularly the previously marginalized communities.

The third phase of licence obligations was from the year 2001 to 2004. The merger of the Independent Broadcasting Authority (IBA) and SATRA, to form the Independent Communications Authority of South Africa (ICASA), is one key feature of this phase. In the year 2001, two major reforms occurred in the South African mobile telecommunications industry, as additional distinguishing features for this phase. These reforms could be said to have been propelled by

amendments to the Telecommunications Act of 1996 as well as global technological trends.

Firstly, Cell C was licensed as a third mobile network operator in the South African telecommunications market. This changed the market structure of South African mobile cellular industry from a duopoly to an oligopoly consisting of three mobile network operators. As a requirement to operate in the licensed spectrum, Cell C had to roll out 52000 CSTs in underserviced areas. Such an obligation had to happen within 7 years from the company's commercial operation date (ICASA, 2004c: 26). The perpetual absence of relevant definitions further impacted on the USOs roll out process.

Secondly, all three MNOs were licensed to operate in the 1800MHz as well as 2100MHz spectrum (3G). The opening up of this spectrum allowed MNOs to provide technologically-advanced and bandwidth-hungry services to their subscribers. As a requirement to operate in the licensed spectrum in particular, each of the three MNOs was required to provide 2.5 million subscriber identity modules (SIM) cards to the "needy people" in the country (ICASA, 2004a; ICASA, 2004b; ICASA, 2004c). These were to be issued within 5 years of a particular effective date, and were to be in line with the implementation plan approved by the regulator (ICASA, 2004a; ICASA, 2004b; ICASA, 2004c). The challenge associated with this requirement was a lack of an agreed upon or known definition of who the "needy people" were, as indicated later In this study. Mobile network operators were further required to provide 125000 pieces of terminal equipment as a condition to operate in the 1800MHz spectrum. Furthermore, as a condition to operate in the 2100MHz spectrum, each mobile operator needed to provide 1400 pieces of terminal equipment to 140 institutions for the disabled. This was to happen within three (3) years from a particular effective date agreed with ICASA. Furthermore, each mobile network operator had to provide Internet access to 140 institutions for people with disabilities within three (3) years from an effective date. Lastly, each MNO had to provide Internet access to five thousand (5000) public

schools in order to operate in the 2100MHz spectrum. (ICASA, 2004a; ICASA, 2004b; ICASA, 2004c). This was to happen within eight years from an effective date agreed upon between MNOs and ICASA.

Table: 1. OBLIGATIONS FOR USING THE 1800MHz AND 2100MHz (3G) SPECTRUM

Mobile network operators	Universal service obligations	Implementation Duration
Cell C	• 52000 CSTs	7 years
All MNOs incl. Cell C	• 2.5 million SIM cards	5 years
All MNOs incl. Cell C	• 125000 terminal equipment	5 years
All MNOs incl. Cell C	• Internet connectivity to 5000 public schools, per MNO	8 years
All MNOs incl. Cell C	• 1400 terminal equipments for institutions for people with disabilities; • Internet access to140 institutions for people with disabilities;	3 years 3 years

Source: Compiled from Operator licenses: 2004

In 2004, policy directives imposed more universal service obligations on South African mobile network operators. During the issuing of these directives, the then Minister of Communications (Dr. Ivy Matsepe Casaburri) stated that:

> *As of 18 January 2005 public schools and public further education training institutions will be entitled to a 50% discount on all telecommunications calls to an Internet service provider, and any connection or similar fees or charges levied by an Internet service provider for accessing the internet or transmitting and receiving any signals via the internet or for such access and transmission and reception (Matsepe-Casaburri, 2004)*

While this implied the ease of access to information and knowledge by these public education institutions, MNOs had an important role to play in supporting the roll out of this obligation.

The fourth phase of licence obligations was from the year 2005 to date. This period is characterized by a change in thrust of the sector legislation. The convergence of information technology, broadcasting and telecommunications technologies meant that a new “converged” and technology neutral legislation and licenses were

required for the South African ICT sector. Consequently, the Electronic Communications Act (ECA) of 2005 was promulgated, repealing the Telecommunications Act of 1996.

There were no new obligations issued in terms of the converged licence regime. If anything, Clause 4 of the operators' ECNS licences stipulates that "the licensee shall continue to maintain previously implemented USOs until reviewed by the Authority in terms of section 82, 88, 89 and 90 of the ECA. This implies that obligations imposed on MNOs before the converged licensing regime are still in force to date.

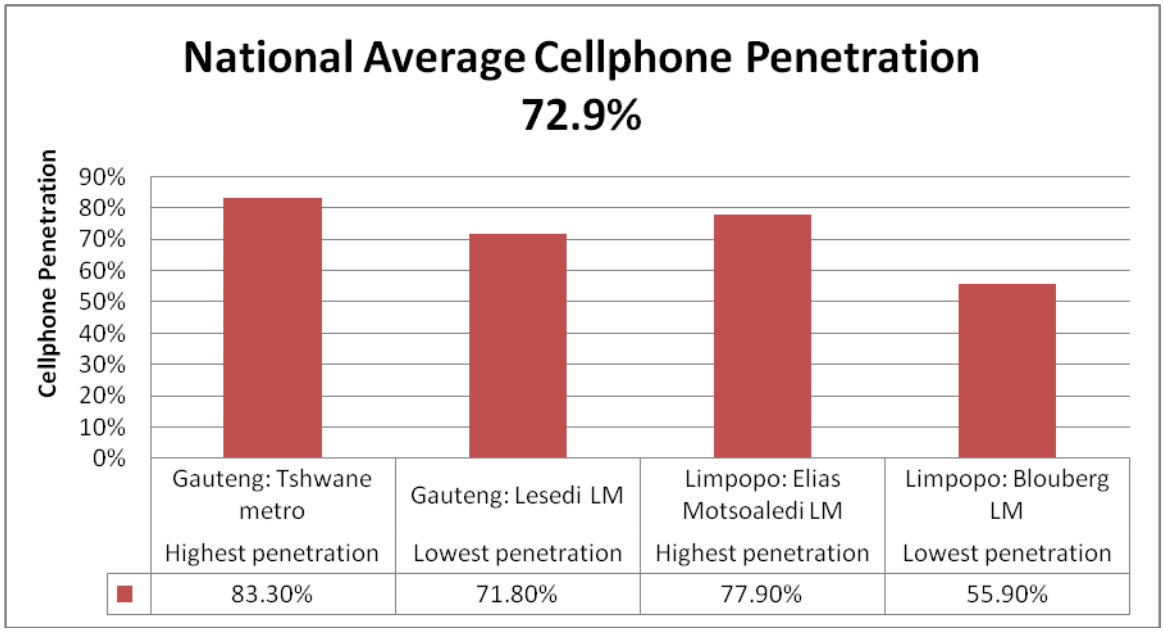
Another notable development of this phase was the commissioning of the USAOs implementation compliance review study by ICASA. Consulting firms, BMI-Tech and other partners, were responsible for the actual execution of the study, and circulated a structured questionnaire to network operators as the main mechanism to collect data for the study. In summary, the study revealed that the obligations were not fulfilled due to reasons to be highlighted in the findings chapter of this research (ICASA, 2010: 24-27). For instance, out of a total of 15000 public schools (5000 per MNO) that were supposed to be recipients of Internet service from the three MNOs, Vodacom managed to roll out the Internet service to 700 schools, MTN rolled out the service to 486 and Cell C to 60 public schools. Cell C managed to roll out the USOs across only three provinces (Gauteng, Limpopo and Eastern Cape) (ICASA, 2010a: 3; ICASA, 2010b: 3; ICASA, 2010c: 3).

1.2.2 Current status of ICT penetration in South Africa

The digital divide is still prevalent in South Africa. This is despite the usage of USOs, for over a decade, as a mechanism to promote universal access to ICTs in the country. While the digital divide reflects the geographical location of communities, with urban communities enjoying better access to ICTs than rural areas, the challenge for mobile USOs is currently no longer about access to a telephone line by individuals. Figures 3 to 5 of this research attest to this. The divide now seems to be among social classes, in both urban and rural areas, and it relates to access to a range of ICTs and services available in the market, in

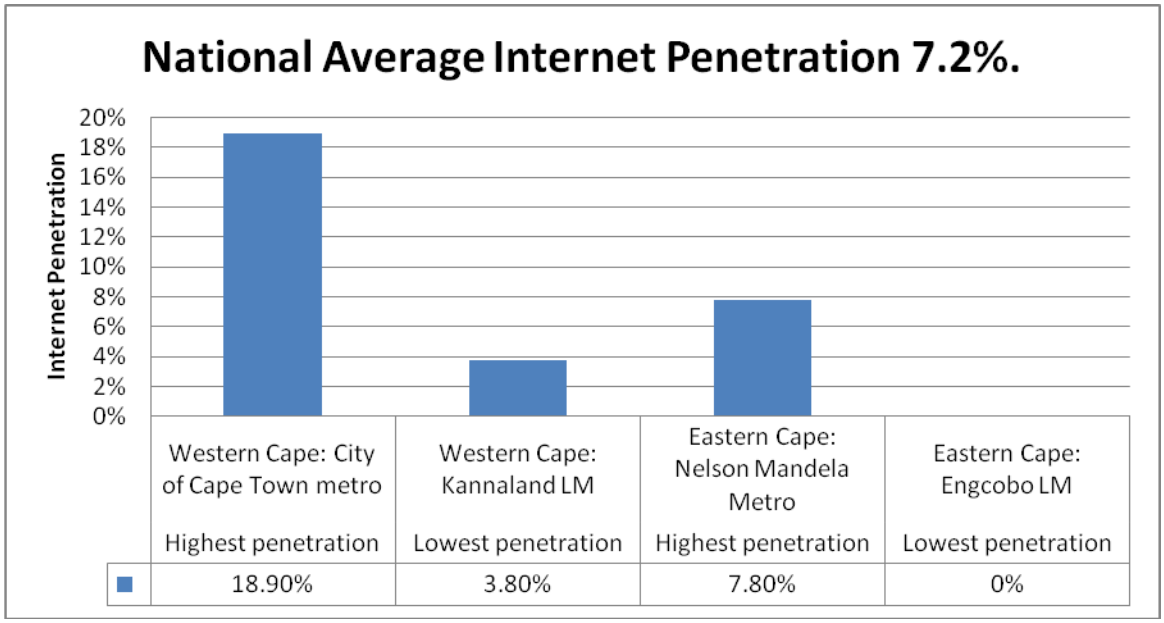
particular mobile telephony, the Internet and broadband. Hudson (1994: 662) states that the lack of telephone access and other advanced ICT services is related more to income than other factors. Currently, it is mainly affluent black and white South Africans, with tertiary education qualifications, who have access to a combination of mobile telephony, the Internet and broadband connectivity. This group of people tends to be in living standard measure (LSM) 9 and 10, and are active participants in the information society (Presidency: 2009: 23). This leaves the majority of South Africans, who are largely in LSM categories 1 to 8, without access to these technologies and they are typically excluded from participation in the information society. These groups reside across the country, including urban metropolitan, urban non-metro and rural areas. Below is a snapshot of the digital divide between selected municipalities located in different provinces of the country.

Figure: 2. Disparities in cell phone penetration between Gauteng and Limpopo municipalities



Source: Compiled from Stats SA (2007: 2)

Figure: 3. Disparities in Internet penetration between Western and Eastern Cape municipalities



Source: Compiled from Stats SA (2007:3)

As can be seen from Figures 3 and 4 above, cell phone and Internet penetration are used as measures for the digital divide. Comparison of the level of penetration for these ICT services is done amongst municipalities located in different provinces, with Figure 3 comparing penetration to a national average cell phone penetration rate of 72.9% while Figure 4 compares penetration to a national average internet penetration of 7.2%.

As can be seen from these graphs, the digital divide still exists in South Africa with municipalities found in Gauteng and Western Cape provinces depicting a higher than national average penetration of these ICT services while municipalities found in Eastern Cape and Limpopo generally below the national average penetration for the services.

The South African public schools were some of the targeted recipients of USOs rollout. However, since the 1800MHz and 2100MHz obligations were imposed on MNOs to increase access to ICT services in these institutions, access to ICT

services still varies. Schools located in certain provinces indicated have better access to ICT services than schools in other provinces. The table below depicts ICT services available in these ordinary public schools.

Table: 2. ICT Penetration in South African public schools

Province	No. of schools in South Africa	Schools with a Computer Centre	Schools with a Telephone line	Schools with Internet Access	Schools with a Cell phone
Eastern Cape	5715	211	1234	218	5430
Free State	1543	109	918	240	1541
Gauteng	1994	828	1794	759	1545
Kwa-Zulu Natal	5835	305	2599	319	5420
Limpopo	3918	165	994	77	3846
Mpumalanga	1540	81	821	25	1455
North West	1740	172	783	76	1666
Northern Cape	609	85	452	185	554
Western Cape	1466	493	1421	1262	1022
TOTAL	**24460**	**2449**	**11016**	**3161**	**22479**

Source: Department of Basic Education (2009)

As shown in the table above, out of 24460 ordinary public schools in South Africa, only 3161 have Internet connectivity. This translates to 12.9% of ordinary public schools with Internet connectivity in the country. However, like in the above graphs showing cell phones and internet penetration in the country, the digital divide still exists amongst these public schools depending on the province they are located in.

While the USOs might have slightly improved access to ICT services in the country, the digital divide still exists in South Africa. Such discrepancies in ICT penetration calls for the need to monitor and evaluate the implementation of imposed obligations. Unfortunately, neither ICASA nor USAASA seem to have performed any of these activities.

1.3 Problem statement

Universal service obligations (USOs) for mobile communications were imposed on network operators from the year 1993 to 2004, and are still applicable today. These USOs were to be rolled out, by MNOs, in public schools, further education and training institutions as well as public institutions for people with disabilities (ICASA: 2004a, 2004b, 2004c). The CST and network coverage requirements within communities were part of the USOs to be fulfilled by MNOs. To date, mobile network operators have not fully implemented the obligations imposed upon them through policy directives and other regulatory mechanisms. The 2007 Community Survey results (StatsSA, 2007) seen in the early section of this chapter, the 2009 schools infrastructure report (DoE, 2009), and the 2010 Universal Service and Access Obligations (USAO) compliance review study (ICASA, 2010d) conducted on behalf of ICASA, all confirm non compliance (amongst other things) by MNOs in rolling out USOs as required. This non compliance is despite the schools, in particular, having been targeted as direct beneficiaries of the USOs initiative. The universal service and access fund has also long been in place to provide financial support for universality programmes. This then poses a problem with regard to the MNOs' "failure" to roll out the imposed USOs since such a situation perpetuates the existence of the digital divide.

The failure or delay in the full implementation of USOs could be attributed to policy, regulatory and implementation related complexities encountered by MNOs during the implementation process (ICASA, 2010d: 24). Specifically, the lack of agreed upon definitions for "underserviced areas" and "needy people" might have contributed to the complexity. Other reasons for the failure are unclear and might be uncovered during the course of this research. This research seeks to investigate the effect of these complexities on the implementation of the obligations and by extension on the digital divide.

Globally, there is no academic research on the monitoring and evaluation of the implementation of universal service obligations. The global and national studies available focus on various pertinent issues on universal service and access rather than monitoring and evaluation of USOs. These studies were undertaken by scholars like Hodge and Theopold (2001), Hodge (2003), Malik and Da Silva (2005), Gillwald (2009) and Lewis (2010), to mention a few. This situation has kept stakeholders, particularly ICASA, ill-informed about the potential impact of using a monitoring and evaluation approach with respect to USOs. Further ICASA has, over the years - phases discussed already- continued to impose further obligations in the presence of issues like the lack of proper definitions for instance and other issues.

1.4 Purpose of this research

The purpose of this research is to investigate the extent to which ICASA would have benefited from RIA in respect of USOs imposition and implementation. In doing so, adherence to the Regulatory Impact Assessment (RIA) process by ICASA in respect of USOs will be assessed. In particular, the assessment will focus on the extent to which ICASA achieved the objectives of each step (as discussed in the literature) in the RIA process, with emphasis on monitoring and evaluation steps. This is done to establish the relationship, if any, between adherence to the RIA process by ICASA and the level of success in the implementation of USOs by MNOs in South Africa. The success of the USOs initiative will be attributed to the extent to which ICASA achieved the goal of each step within the RIA process, in the formulating, monitoring and evaluating their (USO) implementation. The research will also highlight limitations which could be attributed to methods used by ICASA in imposing USOs.

It is assumed that various stakeholders would benefit from the successful conclusion of this research. ICASA should get an in-depth understanding of how to identify situations requiring regulatory interventions, the approach and value of

consulting all impacted stakeholders before any regulatory intervention, monitoring of implemented interventions and evaluation thereof. These are all part of the RIA process. This should empower ICASA to impose implementable obligations thus helping to bridge the digital divide. An extension of the ICT services and network should further benefit mobile network operators. The policy maker should also benefit from the research by getting a clear status information on progress made thus far towards the bridging the digital divide. This should inform future policy directives on universal service obligations. Lastly, all interested stakeholders should then know challenges encountered by MNOs in rolling out USOs as well as progress made towards narrowing the digital divide in the country.

As part of the analysis chapter for this research, a judgment will be made on whether monitoring and evaluation of the implementation of USOs was effective in South Africa. Such effectiveness will be measured against literature on RIA. The research will further recommend key aspects of the RIA process which were supposed to be taken into cognisance by ICASA during the USO formulation and implementation process. For monitoring and evaluation activities, characteristics of a demand approach to monitoring and evaluation framework discussed earlier in the research will be used as a yardstick. ICASA would need to consider these characteristics in their monitoring and evaluation function. This should then assist the researcher in highlighting the extent to which ICASA would have benefitted from using RIA in respect of USOs.

1.5 Chapter conclusion

Universal service and universal access definitions should be seen as a moving target, which when one level is achieved, a higher goal should be set (Benjamin and Dahms: 1999:1). The fluidity of universality definitions accounted for by technology migration, and the 2009 licence conversion process in the mainstream South African telecommunications sector makes it seem likely that more universal service obligations might continue being imposed on all operators

including MNOs. In particular, the call by Vodacom, MTN and Cell C to have USOs imposed on all operators, including the new entrants that joined the main stream telecommunications market through the licence conversion process, strengthens such a possibility (Vodacom, MTN, Cell C: 12 November 2010). These MNOs argue that a move to impose USOs even on recently licensed operators would be the only way to ensure regulatory fairness by ICASA. Furthermore, these MNOs see this move as a mechanism to perpetuate the goal of universal service and access to ICTs in the country. Lastly, in his 2010 vote budget speech, former Minister Nyanda stated that:

> *We have finalized the Broadband policy whose vision is to ensure that South Africans have universal access and services[sic] to broadband by 2019. The benefits accruing from the policy will include the provision of multimedia and e-Government throughout the country. The implementation of the Broadband*
> *policy will impact on the growth of the economy through expanding markets, increasing business efficiency and promoting competition. (Nyanda: 2010)*

While the then Minister's statement had nothing to do with USOs, and did not mention anything about universal service, the R89 billion estimated cost for the implementation of broadband policy allows government to impose USOs as a mechanism to achieve universal broadband penetration in the country

As indicated in the beginning of this chapter, the digital divide occurs primarily due to unequal roll out of telecommunications network and services. People's inability to use ICTs in their various daily activities also contributes to the divide. In South Africa, the existence of the digital divide can be traced back to the investment choices of the pre-democracy government. This exposed certain racial groups to various socioeconomic opportunities to the exclusion of others. As a mechanism to bridge the divide, the South African government engaged on numerous interventions including the USOs. However, the USOs, as the focus of the research, do not seem to have yielded the desired results in terms of bridging the divide. A clear explanation of the undesired results should be clearly

understood after investigating the extent to which ICASA would have benefited from using RIA in respect of USOs.

The next chapter will review literature on regulation, universal service, universal access, universal service obligations and regulatory impact assessment.

Chapter 2: Regulation, Universal Service and RIA

The purpose of this chapter is to review relevant literature in relation to the research project. The chapter is divided into three sub sections. The first subsection reviews literature on regulation with the intention of getting a better understanding of regulation as a process. Various visions, meanings and theories of regulation are also discussed in this subsection. The various rationales and specific reasons for regulation are also discussed in the subsection.

The second subsection of this chapter reviews literature on universal service, universal access and universal service obligations. This is done to understand the concepts, and the relationship between the concepts. It is hoped that other relevant issues to universal service and access will be understood.

The third subsection of this chapter reviews literature on regulatory impact assessment (RIA). The rationales, principles of RIA as well as the RIA process will be discussed. Monitoring and evaluation steps within the RIA process will be highlighted. The purpose for discussing RIA is to provide background on critical issues to be considered, by regulators and other relevant authorities, should they decide to regulate. More importantly, it is to identify the aspects of RIA that would have improved the implementation of USOs initiative in South Africa.

2.1 What is regulation?

Like many other developing and developed countries all over the globe, South Africa is a regulatory state. The creation of various governmental bodies, particularly after 1994, to act on economic sector specific matters “on behalf of government” confirms this situation.

Within the ICT sector, the South Africa government created ICASA (previously known as SATRA) and USAASA to regulate various sector specific issues critical to its efficient functioning. While in line with international ICT reforms, ICASA’s creation can also be attributed to the South African government’s need to ensure

that the country's entire population is able to enjoy some of the ICT related rights guaranteed within the Bill of Rights in the country's constitution. Access to information and universal accessibility of ICT as a "social good" service by all South Africans, particularly the previously disadvantaged communities, can be regarded as one such right.

There are three general broad meanings attached to regulation as a process (Baldwin, Scott and Hood, 1998: 3, Jordana and Levi-Fair, 2004: 3). These meanings, while they seem to have similar implications and connotations for regulatory action, tend to differ in the scope and context during the regulatory process. The first meaning of regulation refers to "the promulgation of an authoritative set of rules, accompanied by some mechanism, typically a public agency, for monitoring and promoting compliance with these rules" (Baldwin et al, 1998: 3). On the other hand, Kirkpatrick, Parker and Zhang (2004: 5) refer to this meaning of regulation as "the employment of legal instruments, orders and rules by all levels of government and non governmental bodies to whom governments have delegated regulatory powers". Referring to the very first broad meaning of regulation, Eerma (2005: 217) states that regulation refers to "the use of instruments by which governments place requirements on enterprises, citizens, and government itself, including laws, orders and other rules issued by levels of government and by bodies to which government have delegated regulatory power". The single and key thrust of the above definitions referring to the first meaning of regulation is that regulation can be seen as a rules-based phenomenon of imposing specific requirements on organisations and individuals. The definitions further emphasise that "only government or delegated authority" can regulate using instruments or processes with some "legal standing and force"'. This makes this meaning of regulation to be narrow but specific. It is this meaning that closely lends itself to the regulation of universal service and access in South Africa through imposing USOs.

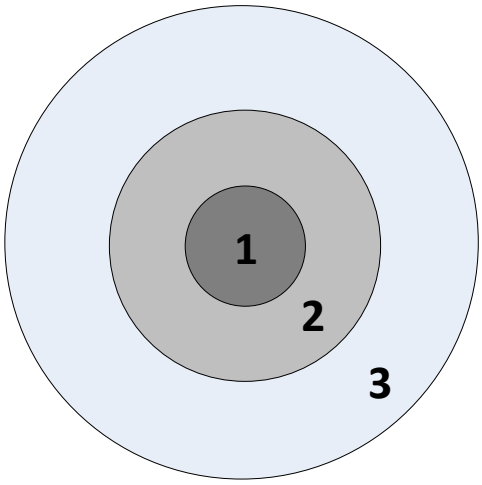
The second meaning of regulation refers to “all the efforts of government and state agencies to steer the economy” (Baldwin et al, 1998: 3). Relating to the second meaning of regulation, den Hertog (1999: 223) states that regulation is the use of “regulatory mechanisms to facilitate the implementation of social-economic policy objectives”. This includes controlling measures like taxation, subsidies, redistribution and public ownership instead of only being preoccupied by rule making (Baldwin et al, 1998: 3). The definitions for the second meaning of regulation are broader than the initial definitions. They highlight the usage of “all the efforts” or “regulatory mechanisms” (including rules and any controlling measures) as mechanisms to regulate. Secondly, the latter definitions highlight the purpose of regulation, which is the attainment of socio-economic policy objectives. This meaning of regulation also lends itself to the regulation of universal service and access in South Africa.

The third meaning of regulation refers to all mechanisms of social control, including unintentional and non state processes (Baldwin et al, 1998: 4). This meaning of regulation can also be defined as “the sustained and focused attempt to alter the behaviour of others, according to defined standards or purposes, with the intention of producing a broadly identified outcome or outcomes, which may involve mechanisms of standard setting, information gathering and behaviour modification” (Prosser, 2010: 2). Eerma (2005: 217) concurs with Prosser by stating that regulation restricts behaviour and prevents the occurrence of certain undesirable activities (‘red light’ concept) but the influence of regulation may also be enabling or facilitative (‘green light’). The above definitions are very broad and also include social norms and expectations as part of regulatory measures. Consequently, the definitions cover the two other meanings of regulation.

Given the three meanings of regulation discussed above, the establishment of rules, laws and norms to control behaviour of others so as to achieve a certain desired standard behaviour and socioeconomic objectives, can be regarded as

the central meaning of regulation. It can also thus be concluded that the regulation process is not an end in itself but rather a means to an end, which is the attainment of certain socioeconomic objectives and promotion or discouraging of certain behaviour. Below is a diagrammatical representation of the meanings of regulation.

Figure: 4. Meanings of regulation



Source: Jordana and Levi-Fair (2004: 3)

1. *Regulation as a specific form of governance: a set of authoritative rules, often accompanied by some administrative agency, for monitoring and enforcement of compliance*, **2.** *Regulation as governance: in a general sense, that is, the aggregate effort by state agencies to steer the economy,* **3.** *Regulation in its widest sense: all mechanisms of social control* ***(Jordana and Levi-Fair: 2004: 3)***

Irrespective of the meaning attached to the process, regulation is done with some form of sanctions as a consequence for any transgressing party. Such sanctions may include fines, publicising of violations, imprisonment, an order to make specific arrangements, an injunction against withholding certain actions, or closing down the business (Den Hertog, 1999: 223).

2.1.1 The rationale and reasons for regulation

The rationale for regulation can be explained using two different dimensions. The first dimension concerns itself with the degree to which regulation benefits the regulated industry, while the other concerns itself with the degree to which regulation benefits non-regulated individuals such as consumers (Christensen, 1989: 226).

Stigler (1971: 3) states that regulation is "instituted primarily for the protection and benefit of the public at large or some large subclass of the public". Regulation may attempt to ensure equal treatment of those dependent on services on grounds of citizenship and inclusiveness, thus preventing or limiting the socially fragmenting role of markets (Prosser, 2010: 16). The need for the "provision of universal and affordable access for all as rapidly as possible within a sustainable and viable telecommunications system" (ANC, 1994), stated in the ANC's RDP policy framework resonates with this rationale for regulation. On the other hand, Christensen (1989: 225) states that "some firms and sectors virtually seek governmental regulation as a protective measure to limit price competition or to control access to their trade". Stigler (1971: 3) seems to concur by stating that regulation can also be acquired by the industry, designed and operated for its own benefit. The call by the three MNOs (Vodacom, MTN and Cell C) to have all the current ECS and ECNS licensees to have USOs imposed on them, can be interpreted as an attempt by these MNOs to use regulation for their private interests (Vodacom, 2010; MTN, 2010; and Cell C, 2010). Such a move has a potential to impose a "regulatory burden" upon these new entrants thus making them unable to effectively compete with these MNOs.

The other rationale for regulation can be described as instances of 'market failure' (Intven: 2000: 4-1). Market failure occurs when resources are misallocated, or allocated inefficiently resulting in waste or lost value (Case & Fair: 2003: 256). Baldwin and Cave (1999:9) concur by stating that regulation in cases of market failure is argued to be justified because the uncontrolled market place will fail to produce behaviour or results in accordance with the public

interest. The very imposition of USOs, upon MNOs, can partly be explained in terms of market failure by operators to extend ICT services to all South Africans.

More rationales for regulation can also be explained in terms of 'conflicting priorities' during the regulatory process of networked industries, for instance, the efficiencies that are always of interest to the network industry value chain versus equity objectives that are usually of keen interest to elected governments. This provides further explanation in terms of government's supply-side approach to USOs provision versus the operators' preference for demand-side considerations when imposing USOs. In order to bring about the balance between numerous probably conflicting priorities in the sector, regulation becomes a necessity (Doyle: 1998: 59).

As can be seen from the above discussion, there seems to be a plethora of approaches to explain or view regulation. These are explained in terms of stakeholders who stand to benefit from regulatory outcomes, as well as socioeconomic conditions under which regulation is seen as necessary. Some of the rationales are contradictory and hence in conflict with each other. Regulation can then be regarded as fundamental to governing complex, open and diverse societies and economies, by allowing policy-makers to balance competing interests in the development of democracy and the modern state (OECD, 2005: 2).

As highlighted above, market failure is one key rationale for regulation. This rationale manifests itself in various forms, which can be regarded as reasons for regulation. Below is a discussion of known sources of market inefficiencies (the actual causes of market failure) that prompt the use of regulation as a remedial mechanism.

A. Imperfect information

There are many reasons that can induce markets to fail in producing complete and correct information for consumers and regulators alike. The (a) high costs that might be associated with producing the required information, (b) low incentive to produce information, (c) as well as the incentives to falsify information can all cause failure, by markets, to produce the required information (Baldwin and Cave: 1999:12). Baldwin and Cave (1999: 12) further state that such failure will occur when the producers of information (the markets) are not compensated by users of such information.

On the other hand, availability of complete and correct information can be regarded as one critical aspect of a competitive market. The perception that markets work efficiently rest heavily on the assumption that consumers and producers have full knowledge of product characteristics, available prices, and so forth (Case & Fair, 2003: 258). When it is not possible to establish the quality of goods or services in advance, purchasers will be prepared to pay an average price corresponding with the expected quality (Den Hertog, 1999: 228). Den Hertog (1999: 228) further states that sellers of goods of high quality will not be prepared to offer the goods at a lower price, and will withdraw from the market resulting in the decline of the general quality of goods (in the markets) and correspondingly the prices buyers are prepared to pay.

In order to effectively deal with the challenge of information inadequacies and other information related problems, by making information more extensively accessible and accurate, regulation may protect consumers against negative effects of information inadequacies and related consequences, thus encouraging the operation of healthy and competitive markets (Baldwin and Cave: 1999: 12).

It is important to mention that regulation of universal service and access in South Africa, through imposing USOs, could not have been done effectively due to

imperfect information in the market. However, the regulator had and still has an opportunity to collate any relevant information on the USOs implementation process, to allow itself to effectively regulate for the attainment of universal service and access in the country.

B. Externalities

There seems to be a directly proportional relationship between the level of usage of a telecommunications network and the value of such network. The more consumers use the services of a telecommunications network, the higher the value generated by such network, both for consumers as well as network operators themselves. This is partly evident through various ways (promotions) used by network operators to lure consumers to use the network. However, there are also some externalities, positive or negative, associated with the usage of a telecommunications network. Case and Fair (2003: 258) define externalities as costs or benefits imposed or bestowed on an individual or group that is outside, or external to a transaction. There are various types of externalities, for instance the user externality, the club externality as well as the investment (spill over effects) externality (Bergman et al, 1998: 27). Bergman et al (1998: 27) seems to agree with Case and Fair by stating that externalities can occur in a network when actions of one user affect the wellbeing of other users. For instance, a person making a telephone call may confer benefits of the network to the called party (user externalities). Negative externality to communities might also be due to pollution caused by waste material of a production process. The rationale for regulation in such a situation will be to eliminate waste and protect the community or any third party negatively impacted by the externality by compelling companies to internalize the spill over costs (Baldwin & Cave: 1999: 12). Amongst many available regulatory mechanisms, this could be done by introducing penalties or some form of sanctions on companies responsible for pollution.

The acknowledgement by the African National Congress (ANC), in its RDP policy framework document, of telecommunications as an “indispensable backbone for the development of all other socio-economic sectors”, and subsequent commitment “to provide universal affordable access for all as rapidly as possibly within a sustainable and viable telecommunications systems” can partly be explained in terms of the negative externalities imposed by the lack of access to telecommunications services to the majority of the South African population at the time. Black people had less than 1 line per 100 persons while White people enjoyed 60 lines per 100 persons (ANC, 1994: 34). This meant Blacks had insufficient access to communication services and other social services facilitated through these communication services. This prompted the ANC, once in power, to try and redress the situation through creating various regulatory structures to improve universal access to ICT services by all South Africans. The USOs were then one of the direct results of such view.

C. Imperfect markets

Perfect competition refers to a “theoretical market form where no individual participant (buyer or seller) in the economic process can have any influence on the market price because his or her contribution is too small compared with the market as a whole” (Viljoen, 2003: 133). For a perfectly competitive market to be achieved, the following conditions need to exist in the market:

- There must be “many buyers and sellers of the product such that each market participant is insignificantly small in relation to the market” so that none can influence the market price;
- All the goods sold in the specific market “need to be identical such that it makes no difference to the buyer from whom or where he or she buys the product”;
- All production factors “should be able to move freely from one market to another”;

- All buyers and sellers have to “possess complete knowledge of all market conditions”;
- There needs to be a “total freedom for buyers and sellers to enter and exit the market”;
- There is “no government intervention to influence buyers and sellers”;
- There is no collusion between sellers (Viljoen, 2003: 134).

Mohr and Fourie (2004: 38) concur by stating that one element of pure market capitalism (perfect competition) is an absence of direct state interference in the economic decisions of consumers and producers. This implies that consumers are at liberty to decide what to consume while production is left as the responsibility for private enterprises.

Imperfect market structure or imperfect competition is likely to occur when one or more of the above mentioned conditions is absent in the market. The resultant situation would be inefficiency of the economic process and or market failure. For instance, a monopoly firm generally sets profit maximizing prices that are significantly above marginal costs since it chooses both the price of the product and quantity of production output (Case & Fair, 2003: 256). This is prompted by the fact that such a firm has no other firms to compete with for consumers. More importantly, such a firm is the sole producer of a specific product in the industry. Monopolistic industries frequently require some form of regulation particularly to protect consumers from potential abuse by a monopoly firm.

On the contrary, excessive competition is also not desirable since it has a potential to lead to economic inefficiencies and or market failure. For instance, excessive competition sinks price levels leading to insecurity and inefficient decision making on the part of both producers and consumers, and is often at the expense of safety and reliability of products particularly when consumers are not in a position to assess the quality of goods (den Hertog: 1999: 227). A possible solution in trying to normalize both of the above mentioned scenarios is to

regulate the industry through the use competition laws to create an environment conducive to competition, in the case of a monopoly, while the introduction of strict market entry requirements should curb excessive competition (Baldwin & Cave, 1999: 12).

The requirement to provide accessible and affordable ICT services, through the USOs initiative, can also be understood in terms of expensive or highly priced ICT services in South Africa at the time. Consequently and just before coming to power, the ANC then committed to “promoting universal and affordable provision of telecommunications services”. The USOs are then a mechanism, possibly amongst many, to ensure that ICT services are affordable to all.

D. Continuous availability of public goods

Public goods or social goods refer to goods and services that bestow collective benefits on all members of society, and no one can be excluded from enjoying these benefits (Case & Fair, 2003: 257). Reasonable access and availability of a telecommunications network or road transport network can be examples of such goods and services. These types of goods and services can be regarded as a direct opposite of private goods and services whose benefits only accrue to the selected private individuals.

Like private goods, the production of public goods and services always impose costs to producers of such goods. Consequently, their production will not always be in the best interest of profit making private firms. Furthermore, it might also not be possible for those paying for such goods and services to prevent non-payers from enjoying the benefits of these goods and services. In some instances, particularly when considering telecommunications services, the above situation has a potential to lead firms to then engage in ‘cream skimming’. Cream skimming refers to the process in which the producer chooses to supply only the most profitable customers (Baldwin & Cave, 1999: 13). In such instances, regulation through imposing USOs may be justified in order to produce the

socially desirable results of continuous availability of ICT services as public goods.

E. Efficiency objectives

The need to attain both economic and production efficiencies can lead to regulation of an industry. This is particularly critical given that both economic and production efficiency are seen as a key characteristic of perfectly competitive markets. In economic terms, efficiency refers to the production of goods and services at the least possible cost (Case & Fair, 2003: 13). This could be at a firm or economy level. Case and Fair (2003: 13) further state that an economy that produces goods and services that are not wanted by people can be said to inefficient.

Allocative efficiency is a possible outcome that can be produced by a competitive economy. An allocation of resources is regarded as efficient when it is impossible to reallocate the resources to make at least one person better off without making someone else worse off (Mohr & Fourie, 2004: 267). This implies that resource allocation in an allocative efficient economy matches the demand of such resources or goods by consumers. Allocative efficiency is achieved when the prices of services reflect their relative scarcity (Intven, 2000: 4-2). It could be safely concluded that allocative efficiency also emphasises that products and services need to be allocated to those who can afford them through the economic laws of demand and supply.

The attainment of productive efficiency, by firms, is another reason for introducing regulation on the market. Productive efficiency can mean two different scenarios during the production process by firms. Firstly, productive efficiency refers to the most efficient mix of input resources (labour, capital, etc) by firms for a given level of output (Intven: 2000, 4-2). Secondly, productive efficiency can also refer to the use of minimal resources for production output

(Intven, 2000: 4-2). This implies that productive efficiency is concerned with the usage of minimal and only required combination of resources during the production process by firms.

F. Anti-competitive behaviour

Anti competitive behaviour by firms has a potential to minimize the effects of competition in the markets. Manifestation of such behaviour includes high wholesale access charges, predatory pricing and various other forms of behaviour (Eerma, 2005: 221). Predatory pricing occurs when a firm prices below costs, in the hope of driving competitors from the market, achieving a degree of domination, and then using its position to recover the costs of predation and increase profits at the expense of consumers (Baldwin & Cave, 1999: 13). A firm's ability to engage in such behaviour can stem from its dominance somewhere within its value chain. The aim for regulators in such a situation is to sustain competition and protect consumers from the ill-effects of market domination by outlawing predatory or other forms of anti-competitive behaviour (Baldwin & Cave, 1999: 13).

While the reason for imposing USOs was certainly not to regulate competition, the regulatory process should have addressed any instances of anti-competitive behaviour by any operator during the USOs roll out process.

G. Unequal bargaining power

The ability and leverage that suppliers have in negotiating contracts with buyers has a huge influence on the competitiveness of markets. The supplier bargaining power, supplier-seller collaboration, buyer bargaining power and buyer-seller collaboration are known sources of competitive pressures for economic markets (Thompson Jr, Strickland & Gamble, 2005: 51). Thompson Jr, et al (2005: 62) further state that suppliers have more bargaining power if certain needed inputs,

supplied by them, are in short supply or when suppliers provide an item that accounts for a sizeable fraction of the costs of the industry product. On the other hand, buyers have more bargaining power if their switching costs to competing brands or substitute products and services are relatively low, or if buyer demand is weak and sellers are scrambling to secure additional sales of their product (Thompson Jr, et al, 2005: 6). In the context of the South African telecommunications industry, the Telkom South Africa versus Internet Service Providers Association (ISPA) case provides a classic example of both the supplier bargaining power (by Telkom) as well as the lack of buyer bargaining power (by ISPA members). The crux of this legal battle was anti-competitive behaviour by Telkom which stemmed from its bargaining power as the supplier of the network elements and related facilities used by ISPs in providing their services (Lewis: 2005, 8-11). Such bargaining power was bestowed upon Telkom through the prohibition (as stated in the Telecommunications Act of 1996) of self provisioning on certain required facilities by ISPA members including mobile network operators. If the bargaining power between sellers and buyers is unequal, regulation may be justified to protect particularly interests of a weaker party (Baldwin & Cave, 1999: 14). The affordability requirement of USOs directly or indirectly addresses such unequal bargaining power between consumers and MNOs.

Table: 3. Rationales for regulation

Rationale	Main aims of regulation	Example
Monopolies and natural monopolies	Counter tendency to raise prices and lower output. Harness benefits of scale economies. Identify areas genuinely monopolistic.	Utilities.
Windfall profits	Transfer benefits of windfalls from firms to consumers or taxpayers.	Firm discovers unusually cheap source of supply.
Externalities	Compel producer or consumer to bear full costs of production rather than pass on to third parties or society.	Pollution of river by factory.
Information inadequacies	Inform consumers to allow market to operate.	Pharmaceuticals. Food and drinks labelling.
Continuity and availability of services	Ensure socially desired (or protect minimal) level of 'essential' services	Transport services to remote region.
Anti-competitive and behaviour predatory pricing	Prevent anti-competitive behaviour.	Below cost pricing in transport.
Public goods and moral hazard	Share costs where benefits of activity are shared but free-rider problem exist.	Defence and security services. Health.
Unequal bargaining power	Protect vulnerable interest where market fails to do so.	Health and safety at work.
Scarcity and rationing	Public interest allocation of scarce commodities.	Petrol shortage.
Distribution justice and social policy	Distribute according to public interest. Prevent undesirable behaviour or results.	Victim protection. Discrimination.
Rationalization and coordination	Secure efficient production where transaction costs prevent market from obtaining network gains or efficiencies of scale. Standardization.	Disparate production in agriculture and fisheries.
Planning	Protect interests of future generations.	Environment.

Source: Baldwin and Cave (1999: 13)

2.1.2 Models and types of regulation

There appears to be numerous ways in which regulation, as a process, can be categorized. Social regulation and economic regulation are the two types of regulation that can be pursued by a regulatory authority. Social regulation comprises of regulation in the area of the environment, labour conditions, consumer protection, environment and other areas (den Hertog, 1999: 224). Commenting on social regulation, Eerma (2005: 218) states that it (social regulation) protects values such as health, safety environment and social cohesion. Regulation of universal service and access in South Africa can be regarded as an instance of social regulation since it seeks to ensure that people have access to ICT. Melody (1997: 13) states that from a social perspective, the service should be made available to everyone on reasonable terms, whether or not it is profitable to do so. This seems to provide the rationale for expansion of telecommunications services through the use of universal service obligations, amongst other mechanisms. However, it is worth mentioning that the economic effects of social regulation may be a secondary concern or even unexpected, but can be substantial (OECD, 1997: 6).

Economic regulation refers to reforms aimed at increasing economic efficiency by reducing barriers to competition and innovation, often through deregulation and use of efficiency-promoting regulation, and by improving regulatory frameworks for market functioning and prudential oversight (OECD, 2007: 229). Economic regulation consists of two types of regulation, structural regulation and conduct regulation (den Hertog, 1999: 224; Eerma, 2005: 218). Structural regulation is used for regulating the market structure while conduct regulation is used for regulating behaviour in the market (den Hertog, 1999: 224; Eerma, 2005: 218). For example, the granting of a licence to a firm as a prerequisite for it to operate in a specific market (controlling market entry) is an instance of structural regulation, while the sanctioning of a firm due to poor quality products and services is an instance of conduct regulation. The goal of economic regulation is to increase social welfare and reinforce the viability and competition of the firms

(Eerma, 2005: 218). Melody (1997:13) concurs with Eerma by stating that from an economic perspective, the service should satisfy a full range of consumer demand and be supplied under conditions of optimal efficiency. As can be seen from the above discussion, these two types of regulation seem to postulate that regulation exists for both economic and social reasons.

While regulation can be categorized as either furthering economic or social policy objectives, it can also be categorized in terms of its relation to competition. Firstly, there is regulation for competition as a notion of regulation (Jordana & Levi-Faur, 2006: 6). Under regulation for competition, the responsibilities of regulatory authorities are narrowly confined to a sector, and regulatory authorities have much more influence over the market actors (Jordana & Levi-Faur, 2006: 6). The sector specific authorities are normally proactive and involved in market design and market control to an unprecedented extent (Jordana and Levi-Faur: 2006: 6). Regulation for competition can therefore be referred to as ex ante in nature. The ITU (2011: 16) defines “ex ante regulation as anticipatory in nature, and is concerned with market entry conditions and the degree of product differentiation”. As can be seen from above, regulation for competition is preventative (of market failures) and forward looking in nature. Furthermore, this type of regulation is proactive in its attempts to achieve market competition, and also allows market actors to know what is expected of them. This then helps to stop offences by firms before being committed.

Regulation of competition can be regarded as another notion of regulatory process. The main difference between regulation for competition and regulation of competition is that the former seeks to create conditions for competition to exist (regulation of market entry) while the latter seeks to ensure that competing firms do not behave in an anti-competitive manner (conduct regulation) once in the market. Under regulation of competition, regulatory authorities (national competition authorities) have economy-wide responsibilities which allow them

less influence on market actors who know their industry well (Jordana & Levi-Faur, 2006: 6). The broader responsibilities imply that competition authorities adopt a reactive approach to regulating anti-competitive activities (Jordana & Levi-Faur, 2006: 6). This makes regulatory action, in instances of regulation of competition, to be ex post in nature. The ITU (2011:16) states that "ex post regulation addresses specific allegations of anti competitive behaviour or redress proven misconduct through a range of enforcement options including fines, injunctions, or bans". While reactive in nature, it can be argued that the redress approach of ex post regulation allows regulatory authorities to gauge the impact of offences committed by firms before any regulatory intervention. This then allows regulatory authorities to ensure that sanctions issued, as a result of offences or liabilities, are commensurate with the offence committed.

Deregulation is another notion of regulation. Deregulation refers to the reduction of economic, political and social restrictions on the behaviour of social actors, but particularly business (Jordana & Levi-Faur, 2006). Stigler (1975: 10) concurs with Jordana and Levi-Faur by stating that deregulation refers to a reduction in political, economic and social restriction on the behaviour of social actors. This implies that a deregulated industry relies on self correcting markets, amongst other measures, as a mechanism to prevent and or combat any anti-competition behaviour within industries. There are various circumstances under which deregulation should and can occur. The change in market structure due to fierce competition, a reduction in the costs consumers incur, and an increase in substitutability between regulated and non- regulated products with its associated reduction in profits should and can lead to deregulation (McFetridge & Lall, 1991: 16). From the above discussion, it be concluded that deregulation can take place after the disappearance of market imperfections which necessitated regulation in the first place.

Re-regulation is another type of regulation. Re-regulation is often used to imply that regulatory reforms and liberalization in general result in new settings of

regulation rather than deregulation (Jordana & Levi-Faur, 2006). Given the definition, it could be correctly argued that the technological convergence phenomena led to reregulation of the global telecommunications sector. For instance, convergence of technologies led to changes in both legislation and licensing frameworks for network operators at a global scale, from technology specific licences to technology neutral licences.

Meta –regulation is another type of regulation. Meta-regulation refers to the process of regulating the regulation process itself (Jordana & Levi-Faur, 2006). In the case of ICASA, adherence to "just" administrative procedures (administrative regulation) amongst other processes and legal instruments are responsible for regulating its (ICASA's) regulatory processes. Administrative regulation refers to paperwork and administrative formalities by which government and or delegated authorities collect information and intervene in individual economic decision (OECD, 1997: 6). For instance, in the case of South Africa, the administrative steps and processes followed by the policy maker and the regulator from the issuing of the invitation to apply (ITA) until a licence is finally awarded constitute administrative regulation. This seems to be regulated by the Promotion of Administrative Justice Act of 2000, amongst many pieces of legislation.

Table: 4. Types of competition and types of regulation

Types of competition	Types of regulation	Regulatory Authority	Examples
Deregulated	Self regulating markets	No regulation (retreat of the state)	Moving from certification to liability laws in order to protect consumers
Regulated	Regulation- of-competition	National competition authorities	Prevention of concentration through the regulation of mergers, cross-ownership, etc
Regulated	Regulation-for-competition	Sector-specific authorities and national competition authorities	Interconnection regimes in telecommunications, unbundling the network
Meta-regulated	Enforced self-regulation of competition rules	Sector-specific authorities and national competition authorities	Institutionalization of internal mechanisms of self-regulation that correspond with the legal requirements of competition law in general and the regulatory regime in particular

Source: Adapted from Levi-Faur, 1998

The above figure depicts the various relations between competition and regulation as discussed above.

2.1.3 Theories of regulation

There are two broad categories of regulation theories. These are the normative and positivist theories of regulations (Hodge & Theopold, 2001: 17). The normative theory postulates that regulation ought to be introduced when there is market failure while the positivist theory postulates that regulation exists since it is a powerful means to redistribute wealth in the society (Hodge & Theopold, 2001: 18). These two theories seem to specify circumstances under which regulation ought to be introduced. Dassler (2006: 33) refers to these two theories as either having a market-driven and or non-market approach to regulation respectively. The market driven approach to regulation is premised on the view

that competition is the most powerful means to achieve a Pareto-optimal economic outcome. This approach further emphasizes that regulation should then be introduced to remove legal barriers to entry, amongst other things, and encourage competition by setting performance targets in the form of price or profit regulation (Dassler, 2006: 33). This is seen as one way of levelling the playing field for all the competitors.

On the other hand, the non-market driven approach to regulation is premised on the view that markets are inherently flawed and lead to an inefficient distribution of outcome including disadvantages for consumers (Dassler, 2006: 33). This approach further emphasizes that regulation should be introduced to concentrate more on public interest or social values, such as benefiting all classes of consumers (Dassler, 2006: 33). Dassler (2006: 33) further states that the non-market driven approach to regulation should conduct regular market reviews to identify, for example, areas of inadequate service, potential competition or least-cost supply options.

As can be seen from the above discussion, these two approaches and or categories of regulatory theories are mainly concerned with the circumstances under which regulation is necessary. Furthermore, the approaches are also interested in the beneficiaries of regulation. For instance, while the market driven approach seems to favour the industry or markets, the non-market driven approach seems to be targeting consumer benefit.

There are various other theories that seek to explain how regulation arises and develops further over time. These theories highlight power play amongst stakeholders within the regulatory process. They are collectively referred to as ‘interest theories’ (Baldwin & Cave, 1999: 19). Below is a discussion of these theories:

A. Public interest theory

The public interest theory centre on the idea that those seeking to institute regulation do so in pursuit of public interest related objectives, rather than group, sector or individual self-interests (Baldwin & Cave, 1999: 19; Eerma, 2005: 222). According to public interest theory, government regulation is an instrument for overcoming the disadvantages of imperfect competition, unbalanced market operation, missing markets and undesirable market results (den Hertog, 1999: 225; Eerma, 2005: 222). Christensen (2010: 12) concurs by stating that the theory of public interest regulation presumes the existence of a merit bureaucracy, operating within the strict constraints of public and administrative law. Christensen (2010: 12) further states that the principles and procedures of this theory rest on the non-acceptance of discrimination among regulatees and other affected interests, and it assumes the respect for procedures that allowS clients first to be heard and second to have their case tried by another instance, ultimately in the courts.

As alluded to above, the public interest theory explains that regulation exists to achieve certain socially acceptable and desired outcomes particularly in instances where markets would fail to yield these outcomes. This theory provides some level of insight into the reason behind the imposition of USOs on MNO licencees by ICASA.

B. Private interest theory

The private interest theory of regulatory development stresses the extent to which regulatory developments are driven by the pursuit of private interest instead of public or group interest (Eerma, 2005: 223). Den Hertog (1999: 235) concurs by stating that in the course of time, regulation will come to serve the interests of the branch of an industry involved. Den Hertog (1999: 235) further states that regulatory agencies tend to avoid conflicts with regulated companies since they (agencies) are dependent on them (companies) for information requirements, and there are career opportunities for the regulators in the

regulated companies. This could be regarded as the reason for regulatory agencies to be seen to represent the interest of regulated industries over time. Baldwin and Cave (1999: 22) state that the private interest theory is also known as the ‘economic theory’, ‘Chicago theory’, ‘public choice theory’, ‘special interest theory’ or ‘capture theory’ of regulation.

Even though similar to the private interest theory, the Chicago theory of regulation further states that regulation is acquired by the industry and is designed and operated primarily for its benefit through government grant subsidies, or through restricting the entry of competitors to the industry so that the level of prices rise (den Hertog, 1999: 236). It is important to highlight that the current framework for regulating universal service and access in South Africa lends itself more to regulation for public than private interest.

From a theoretical point of view, the regulation of universal service and access seeks to further public interests by ensuring accessibility of ICT services rather than interests of a particular firm or group. If anything, the interests of communities and certain designated groups are and should be served by universality initiatives including USOs.

C. Interest group theory

The interest group theory sees regulatory developments as a product of relationships between groups, and between such groups and the state (Eerma, 2005: 223; Baldwin & Cave, 1999: 21). Furthermore, this theory does not see regulatory development imbued with public spiritedness but rather with competition for power between various interest groups (Eerma, 2005: 223; Baldwin & Cave, 1999: 21). In the case of universal service obligations in South Africa, various groups have an interest in the initiative and how it gets implemented. These include government, the mobile industry, regulatory authorities and beneficiaries of the USOs. However, the challenge seems to have

been the lack of close cooperation between these interest groups, particularly the involvement of its beneficiaries.

The objective to ensure universal service and access to ICT services also lends itself to this theory by default. Governments, on behalf of their citizens, would see it necessary to use various mechanisms of ensuring that their citizens have access to ICT services often using social approaches to regulation. On the other hand, operators would want certain market driven considerations during the roll out of universality initiatives, if they support these initiatives at all. It is these interests that regulation would always have to balance.

D. Institutional theory

The institutional theory centres on the notion that institutional structure, arrangements and social processes significantly shape regulation, rather than mere aggregation of individuals' preferences (Baldwin & Cave, 1999: 27). This theory further sees individual actors as influenced by rules, organizational and social settings as well as institutional procedures, principles, expectations and norms encountered in cultural and historical frameworks (Eerma, 2005: 223). Spiller and Levy (1996: 1) concurs with this view by stating that credibility and effectiveness of a regulatory framework depends on the fit between the regulatory scheme chosen and the country's political and social institutional endowments. In particular, the independence of the courts, the strength of the administrative bureaucracy, the structure of the legislature and executive, the unity and division of the government, and informal norms of government behaviour and legitimacy have been identified as relating to the socio-political conditions as well as institutional endowments that determine the effectiveness of a regulatory system and process (Spiller and Levy, 1996: 1).

As can be seen from the above, this theory focuses on the determinants of an effective or ineffective regulatory system. The effectiveness or lack thereof, according to this theory, of any regulatory system is very much dependent on numerous socio-political conditions of the country within which the system

operates. In addition, the capacity within and capability of regulatory institutions including other interested stakeholders within the regulatory process, also determines the effectiveness of such system.

2.1.4 Regulatory strategies

There are various strategies that could be used by governments and regulatory authorities in regulating the industry. Below is a brief discussion on the three regulatory strategies seen as most relevant to the universal service obligation initiative in South Africa.

The power to coerce is one resource that could be used by government and other relevant authorities as a regulatory strategy. Such an approach lends itself to the command and control as a regulatory strategy. The essence of command and control regulation is the exercise of influence by imposing standards (including technical standards) backed by criminal sanctions. The force of law is used to prohibit certain forms of conduct or to demand some positive actions or to lay down conditions for entry into a sector (Baldwin and Cave: 1999: 35).

The issuing of incentives (mainly economic incentives) to the regulated firms is another strategy that could be used to encourage regulatory compliance. For instance, taxes can be used to penalize those who do not comply while financial assistance (subsidies) can be given to firms (in the case of universal service obligations) who have rolled out or want to roll out the imposed obligations (Baldwin & Cave, 1999: 42).

Disclosure of information is another strategy to use in encouraging regulatory compliance. While this strategy normally prohibits provision of wrong or misleading information, it is also not interventionist since it does not regulate the production process, the level of output allowed, prices charged or the allocation of products (Baldwin & Cave, 1999: 49).

Irrespective of the type of the regulatory strategy adopted in a particular jurisdiction or industry, a single or combination of these regulatory strategies can

effectively be used to regulate for the achievement of universal service and access to ICT services. For instance, the disclosure of information can be used to publish information on operators not comply with the universal service requirements, while the incentives strategy can be used to encourage and or recognise operators for having rolled out services as per the regulatory requirements. Give that regulation for universal service and access always involve competing interest, it is important for regulatory authorities to ensure some balancing act in pursuit of these diverse interests.

2.2 Universal service, universal access and universal service obligations

The introduction of competition in the global telecommunications sector has drastically reduced, if not eradicated, the usage of cross subsidies as a mechanism to roll out of ICT services to un-served areas. This could be attributed to the inefficiencies created by cross-subsidies, combined with the possibility that they have a potential to create unfair competitive practices and benefits to incumbent operators (Mariscal, 2005: 412). This calls for a new policy trajectory and appropriate regulatory mechanisms in ensuring universal accessibility and availability of ICT to all people.

Universal service and universal access are terms often used interchangeably. This could be attributed to their complementary nature since they are both about availability and accessibility of ICT services by people. Universal service is defined to mean that everyone in an area has a telephone line (or the right to one if they can afford one) in their house (Benjamin & Dahms, 1999: 3). Intven (2000: 6-1) concurs by stating that universal service focuses on promoting or maintaining "universal" availability of connections by individual households. On the other hand, universal access is defined to mean every person has a reasonable means of access to a publicly available telephone (Intven, 2000: 6-1). Msimang (2006: 217) concurs by stating that universal access refers to a publicly available telephone (not necessarily in one's home), which might be provided through payphones, tele-

centres, multi-purpose community centres or other community based centres. It is worth mentioning that universal service and access concepts are changing given the expansion of telecommunication networks combined with their (the networks) integration into socioeconomic life of the people. From the above definitions, it can be concluded that universal access is a stage before the realization of universal service. This is because the former focuses on ICT access at a community level while the latter focuses on such access at a household level. The definitions further make it possible to deduce that South Africa has thus far prioritised the achievement of universal access over universal service given the CSTs, cyber labs, Multi-Purpose Community Centres and numerous other community level ICT access initiatives pursued in the country thus far.

There are various mechanisms used by regulatory authorities across the globe to fund or facilitate the attainment of universal service. These include the broad uniform tariff policies sustained by cross-subsidisation although on a more limited scale; specifically-targeted subsidies paid directly by government and funded by general taxation revenue; specifically-targeted subsidies paid by government, but funded through universal service levy; specifically-targeted schemes with costs borne by the dominant operator; and specifically-targeted schemes with costs shared among all operators (Xavier; 1995: 79). Intven (2000: 6-16) states that market based reforms (privatisation, competition, and cost based pricing), mandatory service obligation (also known as USOs), cross-subsidies (between or within services), access deficit charges (paid to subsidise the access deficit for the incumbent) and universality funds are some of the mechanisms that can be used as options for promoting universality.

As indicated above, USOs are an optional mechanism to use when promoting universality. “USOs can be characterised as universal service and access implementation strategy” (Lewis, 2010: 4). A USO is defined as “the obligation of an operator to provide all users with a range of basic services of good quality at affordable rates” (Cremer, Gasmi, Grimand & Laffont, 2001: 7). In defining USOs, Valleti (2000: 205) states that “universal service obligation is typically viewed as the obligation of an operator to provide all users a basic package of services of

‘good’ quality, and at affordable prices”. Such an obligation can be “imposed upon the dominant telecom operator (usually the incumbent), and its intention is to ensure national coverage of a particular telecom service also in remote rural areas, where provision of telecommunications service may become less profitable” (ITU, 2010: 13). Intven (2000: C-15) concurs with Cremer and Valleti by stating that USO generally refers to the obligation imposed on a telecommunications operator to meet the policy objective of connecting all, or most, households to the public telecommunications network. Universal service obligations are normally imposed on operators during the privatization process, the introduction of competition, the release of spectrum, or the allocation of significant cash subsidies for universal service (Peha, 364: 1999). If not imposed as licence conditions, they are imposed as independent targets that need to be achieved by network operators.

The above definitions postulate that universal service obligations emanate from policy, and are frequently used to target uneconomic users and areas. The definitions further state that obligations are used as one mechanism (amongst many) to promote the realization of universal access and universal service of ICT services. Lastly, USOs are normally allocated when there is a new licence (spectrum licence, market entry licence, etc).

The importance of clearly specifying USOs in terms of their nature, extent and standard of services required cannot be over emphasised (Xavier, 1995: 20). Xavier further states that ambiguity in defining USOs (and sometimes lack of any specification) allows the telecommunications operator to define the specific requirements of the universal service objective, set targets for meeting these objectives, and decide on how, and how quickly these targets are to be achieved. Loose or ambiguous specification of universal service obligations also permits considerable room for their alteration and reinterpretation even by government, making it difficult to assess whether their delivery was in line with government’s objectives and policies. It also makes it easier for operators to abandon or curtail them, and lastly makes universal service programmes vulnerable to overt and covert political pressures rather than being based on a clear strategy and plan (Xavier, 1995: 20).

2.2.1 Measuring universal service and access

There are three key criteria with which universal service and access is measured. These are (1) universal geographical availability or provision of service on demand irrespective of whoever, wherever and whenever it is requested (availability), (2) non discriminatory access (which means that groups of users are treated alike in terms of price and provision of service quality (accessibility), (3) and reasonable costs or affordability (which is a more subjective concept relating the comparative cost of the service and the relative purchasing power of the user) (Blackman, 1995: 172; Xavier, 1995: 22). Hudson (1994: 659) refers to these as the four fundamental criteria critical for the implementation of universal service vision. Commenting on the affordability criteria, Xavier (1995: 26) states that "affordability and reasonable costs carry important implications for the price charged for telecommunication services and the profitability of network operators". Furthermore, what is affordable and at a reasonable cost for a household may differ from what is affordable and at reasonable cost for business (Xavier, 1995: 26). Flexibility is another key criterion, in addition to the above mentioned criteria, which is used to measure universal service and access. This criterion states that universality policies need to be flexible enough in setting targets and adjusting to changes given the related change in technologies and introduction of new services (Hudson, 1994: 649). This confirms the fluidity of universal service and access concepts and definitions.

2.2.2 Why Universal Service Obligations

The benefits of extending access to ICTs service to the entire population can be understood from both social and economic perspectives. From a social perspective, ICTs allow people (including the elderly) to keep in contact with the outside world, provide access to information which makes them informed societies, and facilitate the provision of various social service including health, education, security, and other critical public services (Graham, Cornford & Marvin, 1996: 6). From an economic perspective, ICTs allow businesses to engage in telemarketing and other activities given the need to personalise services to customers (Graham,

Cornford & Marvin, 1996: 6). The directly proportional relationship between ICT access and the GDP also points to economic benefits of ICT to the economy.

As indicated above, USOs are just one option, amongst many, of promoting universal service and access. There are numerous reasons for the imposition of USOs. In line with the rationale or explanations behind the promotion of universal service and access, the imposing of USOs can also be explained in socioeconomic terms.

USOs are imposed as a remedy for a network externality (Cremer, Gasmi, Grimand & Laffont, 2001: 15). As indicated earlier, network externalities arise when the benefits of using a network depend on the number of individuals who are connected to the network. The USOs can be used to correct the adverse effect of low participation in the network by individuals, due to some form of market failure associated with network externalities (Cremer, Gasmi, Grimand & Laffont, 2001: 15).

The USOs can also be used as a policy instrument meant to redistribute ICT services through price subsidies instead of income taxation and or direct transfer (Cremer, Gasmi, Grimand & Laffont, 2001: 16). This could be achieved through targeting high costs users like rural communities (customers difficult to service through market mechanisms) or low income households (people who can't afford the service). The South African universal service and access policy refer to these categories of people as "underserviced communities and the needy people" (Department of Communications, 2008:18-23) .

USOs can also be used as means to supply ICT services as a public good. This is premised on the view that telecommunication services are seen as having an ability to bind the nation together, are essential for the functioning of democracy (which are features of public goods) which causes the society to find it unacceptable for anyone to be excluded from these services (Cremer, Gasmi, Grimand & Laffont, 2001: 16). In referring to ICT as a public good, Xavier (1995: 33) states that the public good model views telecommunication services using the public interest standard, which constantly evolves to incorporate the deployment of

the latest available technology and service capability. Xavier (1995: 33) further states that the public good model is a supply driven approach to telephone infrastructure development which fosters a potentially expansive and expensive application of universal service. Xavier (1995: 32) compares this model with the private good model which is demand driven in its approach to ICT deployment, and is considered to be producing efficient regulatory outcomes consistent with effective competition. The USOs can also be used as an outcome of a political economy process between various parties or interest groups. This resonates with the first issuing of USOs in South Africa before the existence of any regulatory framework.

Lastly, Xavier (1995: 35) states that USOs can be used as a tool to ensure “equity” and “fairness”. However, this “equality of access” objective “could be an empty promise since it ignores the possibility that equality of participation” would require other interventions (Xavier, 1995: 36). In the case of the USOs initiative in South Africa for instance, availability of ICT backbone infrastructure combined with the level of ICT literacy are some of the few issues that need attention before equal access to ICT could have been regarded as a reality to bridge the digital divide.

2.2.3 Universal service policy process

Policy is a conscious, goal setting process undertaken by actors in the decision making system and it includes identification of the means of achieving such goals. An important aspect of this process is that the decisions made must, in principle, be within the capabilities of the main actors to achieve (Saasa, 1985: 309) Dunn (1994: 85) concurs by stating that policy is a complex pattern of interdependent collective choices, including decisions not to act, made by governmental bodies and officials. There are various models that can be used by policy makers in developing policies. These models have their advantages and disadvantages. One such model relevant for this study due to its rational approach to policy development is the linear model. The linear model (also known as mainstream model) is regarded as a problem solving process which is rational, balanced,

objective and analytical, where decisions are made in a series of sequential phases starting with the identification of a problem or issue and ending with a set of activities to solve or deal with it (Sutton, 1999: 9). The linear model consists of the following phases: (a) “recognising and defining the nature” of the issue to be dealt with, (b) “identifying possible courses of action” to deal with the issue, (c) “weighing up the advantages and disadvantages” of each of these alternatives (cost-benefit analysis), (d) choosing the “option which offers the best solution”, (e) implementing the policy, (f) and possibly “evaluating the outcome” (Sutton, 1999:9).

The implementation of a development-based communication policy is a four step process. These are (a) developing a plan (setting goals), (b) translating goals into telecommunications targets; (c) implementing the plan; and (d) monitoring progress (Hudson, 1994: 663). The goal setting step of this process requires coordination amongst various governmental bodies and departments. In particular government departments responsible for health, education, social services and other might need to be involved if their services are to be supported by ICTs. This could be attributed to the facilitative nature of ICT in allowing such departments to deliver on their mandates. During the step to translate goals to telecommunications targets, universal access to basic communication needs to be defined, at minimum, in terms of population (a telephone for every permanent settlement with a minimum population), distance (a telephone within *X* kilometres of all rural residents), and time (a telephone within an hour’s walk or bicycle ride of all rural residents. Strategies to achieve these goals would then have to be devised during the third step (implementing the plan). Lastly, a set of performance indicators and measurements to track progress towards implementing the plan will have to be established and utilised during the progress monitoring step (Hudson, 1994: 663). It is important to highlight that planning for each of these steps should place even before the policy is implemented.

2.2.4 Policy perspectives on universal service and access

There seems to be a lack of consensus amongst policy makers regarding the appropriate policy to use in trying to achieve universal service and access to ICT services. The different approaches adopted by policy makers and regulators in various jurisdictions attest to this lack of consensus. These include policies that use market mechanisms to achieve access using market based mechanisms, usage of universality funds, mandatory obligations and other approaches. Generally, the approaches to universal service and access policy and practice have occurred along the contradictory views which argue, on one hand, that the market place has self correcting mechanisms that are able to correct any abnormality inside, while the other view argues that government should subsidise access to ICT services in one way or the other. Irrespective of the policy perspective adopted during policy development, it is important for governments and regulators to always choose a perspective that is in line with their institutional capabilities.

According to Mariscal (2005: 413) there are three contrasting schools of thought regarding the development of universal service policies and practices. There is a market economy school of thought whose central argument is that no special policy should be developed to encourage the consumption of ICT services since there is nothing extra special about these services. This perspective continues to argue that a competitive market place will encourage technological innovation, lead to a decrease in prices for many users thus driving the deployment of ICT. Lastly, this school of thought argues that wealth causes higher ICT penetration levels and not the other way round. Therefore, fostering of economic growth and efficient regulatory policies through open competitive economy is seen as the most effective universal service policy (Mariscal, 2005: 413). This makes this perspective to be seen as promoting a demand driven approach to ICT diffusion. On the other hand, the IT-for development or social equity school of thought argues that the bridging of the digital divide needs to be achieved through subsiding access to telecommunication services because of ICT's contribution to economic development. This perspective further argues that IT has the potential of

improving the living conditions of disadvantaged groups by helping them increase their income, and further leads to poverty reduction through education (Mariscal, 2005: 414). This makes the IT for development school of thought to be seen as promoting the supply driven approach to ICT diffusion. Importantly, the two schools of thought are contradictory since one school of thought (market economy) sees economic development as a requirement for ICT deployment while the other view sees ICT deployment as a requirement for socioeconomic development (IT for development). This creates a "chicken and egg" debate on the relationship between these two variables (ICT deployment and economic development).

The social capital school of thought to universal service policy development argues that IT, despite its ability to help people to learn how to absorb knowledge generated elsewhere and thus help raising their income, cannot leapfrog institutional obstacles as well as skill and resource deficiencies. This perspective further argues that a policy aimed at addressing the digital divide must consider that IT is in danger of being captured by existing organisational inefficiencies. Lastly, this perspective stresses the socio political importance of accessing IT (Mariscal, 2005: 415). Irrespective of the theoretical perspective followed by a universal service policy, there are policy implications associated with each perspective. The table below provides a summary of various universal service policy approaches discussed above, and their implications:

Table: 5. Theoretical perspectives of universal service policies

Theoretical perspective	Policy implications
Market economy – market is the engine of growth and thus expansion of telecommunications	Policies that promote competition
IT- for development – IT as the engine for growth	Pro-active support to the consumption of telecommunications services.
Social capital – community based economic growth	Integral policies that promote access

Source: Mariscal (2005)

As can be seen from the above, while the market economy and IT for development perspectives can be seen as contradictory, the social capital perspective appears

to complement the two perspectives through focusing on institutional capabilities as another consideration.

2.2.5 Universal service and access policy considerations

As highlighted earlier, universal service and universal access have three dimensions, the social, IT-for development and economic dimensions. Consequently, the development of a universal service and access policy needs to exhibit or consider both these dimensions for the resultant policy to be effective. Expressing his view on the need for compatibility between universal service policy and the type of intervention required, Milne (1998: 775) states that there are five stages of network development which any country needs to pass through. These are stage 1, whose main thrust is the establishment of the network, and with an associated tele-density of zero to 5% network coverage. Stage 2 of network development intends ensuring the wide geographical reach of network coverage, and has an associated tele-density of 1% to 20% network coverage. The thrust of stage 3 level of network development is to ensure mass market take up of ICT services, and has an associated tele-density of 15% to 40% network coverage. Stage 4 of network development seeks to ensure the actual completion of the network, and has an associated tele-density of 35% to 60% network coverage. Lastly, stage 5 of network development intends providing the ICT services to individuals (universal service), and has an associated tele-density of 50% to 100% network coverage (Milne, 1998: 775).

As can be seen from the above discussion, these stages of network development overlap with each other. This makes it necessary for any universality policy to consider such overlaps. Secondly, any universality policy or intervention needs to consider the distinct socioeconomic characteristics of each stage (Milne, 1998: 775), for it to be effective. This will also ensure relevance of such an intervention and policy.

A. Universal service as a moving target

Technological convergence has had an impact on telecommunications policy amongst other things. While the previous policy focused on traditional and distinct services that were offered through various platforms, the current policy needs to cater for data and other multimedia services provided through a single technological platform. This has implications for the definition of universal service and access. In addition, Milne's five stages of network development also implies that each country will have to define its universality policy and intervention differently depending on the stage of the network development in that particular country. Commenting on the same issue, Benjamin and Dahms (1999: 1) states that universal access and service definitions should be seen as moving targets, when one level is achieved, a higher goal should be set. The fluidity of universal service definition can be attributed to factors like systems capacity *(high capacity technologies are able to carry various kind of information including highly detailed images),* digitization *(telecommunications networks have become digital thus allowing them to carry any kind of information compressed as streams of bits),* ubiquity *(the ease of deployment of wireless systems allows provide an affordable means of reaching isolated rural communities)* and convergence (the data processing and imaging technologies are ushering in the era of multimedia services to satisfy customer needs) (Hudson, 1994: 658).

Given the fluidity of universal service definition, it can be concluded that universal service objectives and targets may also vary from one regulatory jurisdiction to another. This further implies that network operators might, after some time, be required to roll out new and advanced obligations in line with technological changes. This calls for flexibility by universal service policies and subsequently the related obligations in recognition of the changing nature of technology (Hudson, 1994: 660). Such flexibility should ensure that obligations are specified in terms of availability of services and thereby ensuring that they remain technology neutral. Flexibility should further encompass ability, by operators, to trade obligations

amongst themselves (Peha, 1999: 369). These policies have to be forward looking and anticipate the roll of new and advanced services like broadband connectivity to key public access spaces and later to homes.

B. The scope of universal service and access

The scope of universal service and access initiatives is one of the key issues that an efficient and effective universal service and access policy needs to consider. Such scope can be viewed both in terms of the geographical areas to be covered by the USO intervention as well as the types of technologies, services and products that need to be rolled out as part of the intervention. The scope for universal service and access needs to be defined so as to identify access requirements at multi-levels, within the households (level 1), within communities (level 2) and within education, health and other social service institutions (level 3). At level 1, access to basic and affordable telephone service (including free emergency services) of specified quality is important. Mobile services also need to be universally available to customers at this level) (Hudson, 1994: 660). At levels two and three (community and institution levels), access to ICT services requires capacity (bandwidth) beyond basic telephone service. Such capacity should be able to provide services like Internet access for schools and libraries, bandwidth on demand for distance education and telemedicine applications (Hudson, 1994: 660). The importance of availability and affordability of services, at levels two and three, cannot be overemphasised. These will determine whether communities and institutions have access to ICT infrastructure and services, and secondly the extent to which these services can be utilised by communities and institutions.

There is a general debate around the specific types of technologies and services that need to be covered as part of USOs. One side of the debate states that all types of technologies and services (including broadband and related services) need to be made universally accessible through government intervention and regulation. The other side states that certain ICTs technologies and services need

to be made universally accessible only after market demand and preference for those services has been established. This side of the debate further calls for the periodical review of universal service and access definition to ensure that services are categorised as USOs only if the level of penetration reaches a point at which unacceptable social and economic disadvantage is placed on customers lacking access to those services possibly due to some form of market failure (Xavier, 1997: 832).

An effective universal service and access policy needs to outline a process to identity technologies and services that should be included as part of USOs. Such a process should include (a) adequate identification and definition of the product to be included; (b) determining that the product is sufficiently 'essential' to justify major policy interventions associated with USO designation (public interest perspective); (c) has the product, through the operation of market choices by customers, been subscribed by a substantial majority of customers; (d) do most customers in that customer class already use the product; (e) an assessment of the nature and extent to which the service or product will not be made available by the market and why; (f) consideration of the social and economic disadvantages incurred by those without access to such a product or service if there is no government intervention in the market; (g) assessment of the costs of intervention through USO mechanisms compared to the costs (benefits should outweigh costs); (h) determine and consider the likely impact on any other policy goals (Xavier, 1997: 831). Lastly, a universal service and access policy also needs to specify quality and functionality requirements for obligations. Reliability and throughput speed, where applicable, also need to be specified in policy if it is to be effective (Hudson, 1994: 664).

The above discussion clearly highlights the reality of contesting views and approaches by stakeholders in ensuring the realisation of universal service and access. Despite the contest in views, it is important for governments and regulators to choose an approach that suites their capacities and capabilities. A delay or

failure to do so will ensure that inhabitants of those jurisdictions remain passive participants within the global information superhighway. This further implies that an efficient universal service and access policy also needs to include activities to promote or stimulate the actual take up and use of ICT services (demand side policy) in addition to guaranteeing provision of access to basic ICT service at an affordable cost (supply side policy). Such policy also needs to face lack of human knowledge and skills around ICTs (Mariscal, 2005: 416). This is important given the positive role of ICT literacy on ICT usage and hence the functioning of the economy and reduction of social costs.

C. Costs of universal service and access

The IT-for development school of thought (discussed earlier) seems to view ICT services as a 'social good', hence its argument that government needs to intervene to make these services available to all. This is despite the reality that USOs are costly, and someone has to incur such costs for their roll out. More often than not, network operators incur the costs of USOs roll out directly and indirectly. These costs of are defined as the financial burden imposed on universal service provider (Valletti, 2000: 209). The costs of USOs are defined in terms of two factors, profit and welfare. Profitability costs are measured both in terms of loss in profits incurred by operators due to USOs, and the financial burden that USOs impose on operators. On the other hand, welfare costs are measure in terms of dead weight loss implied by USOs (Cremer et al, 2001: 20). Consequently, a universal service and access policy needs to consider costs of USO roll out if it is to be effective. For instance, regulators should allow geographical de-averaging of prices and greater flexibility to price discriminate (Xavier, 1995: 51). Alternatively, operators which are able to efficiently deliver universal service in their licence area should be given the option of doing so instead of contributing to the fund (pay or play) (Blackman, 1995: 174). Such a move should go a long way in reducing the effect of these costs upon network operators.

Furthermore, universal service and access policy can be seen as putting restrictions on the pricing of ICT services. In particular, its emphasis on non discrimination (in terms of price and availability) exacerbates such price restrictions especially given that some geographical locations are more expensive to connect than others (Cremer et al, 2001: 22). Such heterogeneity in costs and possibly even demand conditions makes averaging to hide the true costs of rolling out USOs. Cross subsidy mechanisms are also increasingly unsustainable in the presence of competition given that the two (competition and cross subsidy) are at odds with each other (Valletti, 2000: 209). Such price restrictions, combined with the heterogeneity of roll out costs, inflate the total costs of rolling out universal service and access programmes, thus putting pressure on network operators. To minimize costs, an effective universal service policy and practice should allocate the right set of USOs to be rolled out at the right time by the right firm. This should be in addition to reduced costs for the actual policy management process.

D. Funding of universal service and access

There are numerous approaches used by policy makers and regulators to fund and or facilitate the roll out of universal service and access programmes. These approaches include market base reforms *(privatization, competition and cost based pricing),* mandatory service obligations *(imposed by licence conditions or other regulatory measures),* cross-subsidies *(within and between services provided incumbent operators),* access deficit charges *(paid by telecommunications operators to subsidize the access deficit of incumbents),* and universality funds *(independently administered funds that collect revenue from various sources and provide targeted subsidies to implement universality programs)* (Intven, 2000: 6-2). The main challenge always faced by regulators and policy makers is choosing the correct approach to use.

The management of universal service and access funds differs from country to country. This is despite the common perception that funds administered by independent regulators and agencies are less likely to be influenced by

government or political interests (Malik & Da Silva, 2005: 7). Universal service funds are generally meant to be used to subsidize both commercial providers' infrastructure expansion into un-served areas as well as users of telecommunications services (Peha, 1999: 367). Given the inefficiencies associated with any form of subsidy in a competitive market, it is important to ensure that funds are used to target 'needy' people with subsidies instead of providing a uniform subsidy to all people in a particular area. This is to avoid a situation where rich people from targeted areas (normally rural areas) benefit from funded ICT access initiatives at the expense of poor urban people. Importantly, it is only when true access gap is apparent that government and regulators should consider the targeted and limited "smart subsidies" in order to spur extension of services to people not covered by services (Dymond & Oestmann, 2003: 58).

An efficient universal service and access policy should not mix the universal service fund with general funds. When funds supposedly for universal service flow from telecommunication operators and users to general coffers, they are often diverted to other national priorities and needs, effectively becoming another form of tax on operators (Peha, 1999: 365). Malik and Da Silva (2005: 10) state that it is also important for governments to disburse the amount of USO funds collected by giving them to the fund administrator. This allows effective usage of funds towards the achievement of universal service and access. If anything, the strategic importance and economic impact of ICT access allows universality initiatives to be funded from general taxation rather than from within the telecommunications sector (Graham, Cornford & Marvin, 1996: 10). Consequently, an efficient universal service and access policy needs to focus on ensuring the least distortionary approach to funding universal service and access initiatives.

E. Competition and universal service

There are two contrasting views relating to the relationship between competition and universal service and access. One view states that telephone access

increases with liberalisation and competition such that equity in distribution of telephone services improves substantially (Barros & Seabra, 1999: 47). Such a view seems to support and perpetuate the existence of competitive markets given innovation and price reductions associated with them. The other view state that competition impedes network roll out thus the achievement of universal service. Perfect competition occurs when none of the individual market participants (buyers or sellers) can influence the price of a product. The price is determined by the interaction between demand and supply and all participants have to accept that price (Mohr & Fourie, 2004: 252). Cave and Fair (2003: 105) concurs by stating that a perfect competition refers to an industry structure in which there are many firms, each small relative to the industry, producing virtually identical products and in which no firm is large enough to have any control over price. As can be seen from the above definitions, price and product homogeneity seems to key characteristic of a competitive industry. This is in addition to many firms operating within that industry. More importantly, the introduction of competition in the global telecommunications industry has made a case for competitive neutrality in the provision and funding of USOs (Xavier, 1997: 829). This implies that the universal service and access policy, and by extension the USOs and funding thereof, should not encourage or discourage competition amongst competitors (network operators) in an industry. This maintains incentives for competing network operators to provide the universal service using various technologies and approaches. Lastly and most importantly, an efficient universal service and access policy needs to facilitate the expansion of ICT infrastructure, and access to telecommunications services such that social benefits are maximized (Peha, 1999: 364). This can only be achieved through the encouragement of investment in infrastructure roll out and thus infrastructure based competition.

It is clear that regulation exist for the achievement of certain social and economic policy objectives. However, before any regulatory intervention can occur, it is important for governments and regulatory agencies to understand the implications of such intervention. This will go a long way in ensuring efficiency and

effectiveness of the resultant universal service and access policy. Furthermore, this will ensure that stakeholders are not overburdened by the need to roll out USOs, thus ensuring progress towards the achievement of universal service and access.

2.3 What is Regulatory Impact Assessment (RIA)?

Regulatory Impact Assessment (RIA) is a term used to describe the process of systematically assessing the costs and benefits of a new regulation or an existing regulation (Kirkpatrick, Parker & Zhang, 2003: 1). Parker (2006: 2) concurs by stating that regulatory impact assessment is an information-based analytical approach to assess the probable costs, consequences, and side effects of planned policy instruments (laws, regulations, etc). Parker (2006: 2) further state that the impact assessment can be used to evaluate the real costs and consequences of policy instruments after they have been implemented. Defining RIA, Welch (2005: 1) states that RIA is a methodology for designing precise, targeted regulations that achieve legitimate policy aims with the minimum burden on those affected. The above definitions emphasises that RIA is an approach to developing and implementing policy that takes into cognisance views of other interested policy stakeholders. With USOs being the program aspect of policy, RIA is able to ensure that their development or imposition have been informed by the needs of the communities and other beneficiaries.

There are five methods used by policy makers, regulators and other delegated authorities in making regulatory decisions (Kirkpatrick, Parker & Zhang, 2003: 6; OECD, 2005: 6). These are (a) the expert method (*where a decision is made by a trusted expert*), (b) consensus method (*where a decision is reached by a group of stakeholders who reach a common position that balances the interests of all concerned*), (c) political method (*where a decision is reached by political representatives, based on a consensus view of the issues of importance to the political process*), (d) benchmarking (*where a decision is reached by referring to*

an external model such as an international regulation), and an empirical method (*where a decision is based on research, fact finding and analysis, which define the parameters of action according to established objective criteria*) (Kirkpatrick, Parker & Zhang, 2003: 6; OECD, 2005: 6).

Amongst the five identified decision-making methods used by policy makers, it can be concluded that RIA is an empirical form of policy analysis instrument that compares costs and benefits of the implementation of policy and or regulation. It can further be concluded that the cost effectiveness analysis conducted during the RIA process, in essence, seeks to determine the means of achieving a given outcomes at the lowest cost, or maximizing the benefits to be obtained from a given regulation. More importantly, the above definitions elucidate that RIA could be ex ante (before regulatory intervention) or ex post (after regulatory intervention) in nature. RIA is a useful tool that provides decision-makers with valuable empirical data on the impact of regulatory measures, and a comprehensive framework which they can use to assess their policy options and the consequences their decisions may have (OECD, 2005: 5). RIA also assesses whether regulations contribute to strategic policy goals (OECD, 2005: 5). In the respect of universal service and access as a strategic goal in South Africa, it can be concluded that RIA can facilitate the investigation of the impact of USOs on the achievement of this goal. This will allow stakeholders to pass judgement on whether USOs are the correct measures in the quest to bridge the digital divide in South Africa.

2.3.1 Principles of RIA

The RIA process can be viewed as the basis for good regulatory governance and better regulation (Knight-John, 2006: 6). Regulatory governance is defined as the systematic implementation and operation of government-wide policies on how to use regulatory powers to produce quality regulation within the procedural values of the governing system (World Bank, 2007: 6). The principles of upon which the

RIA process is based can be said to be a key contributor to good regulatory governance. Such principles further determine the direction and activities of a RIA process. Transparency, accountability and consistency are some of the principles upon which the RIA process is based (Radealli, 2005: 4). Regulatory transparency refers to capacity of regulated entities to express views on, identify, and understand their obligations under the rule of law (Kim, Kim & Yang, 2002: 2). Transparency, as a core principle of good regulatory governance, creates credibility for regulatory decisions and help foster sustainable investment in infrastructure (Bertolini, 2006: 1). Kirkpatrick and Parker (2003: 3) concurs by stating that policy makers and regulators need to account for their regulatory actions, and further be consistent and transparent in decision making in order to avoid uncertainty, arbitrariness and ensure accountability to stakeholders. Regulatory transparency reassures investors (investors seek legal and regulatory frameworks that most clearly and predictably define their rights and obligations), builds legitimacy around sensitive decisions, and reduces corruption (the need for regulators to justify their decisions helps ensure that they will reach well reasoned decisions and reduce corruption) (Bertolini, 2006: 2).

There are five main dimensions of transparency. These are clarity (the rights and obligations of the regulated entities need to be clearly stated), predictability (regulatory decisions must be made according to established rules, methodologies and processes), autonomy and accountability (regulators need to be shielded from undue interference by policy makers and special interests, and regulatory instruments should allow stakeholders to challenge regulators' decisions and obtain redress), participation (stakeholders should actively participate in the regulatory decisions making process and provide regulators with as much information as possible about their views and impacts of regulatory decisions), open access to information (information on regulatory decisions need to be ready available and dissemination of such information also need to take into cognisance the characteristics of diverse stakeholders) (Bertolini, 2006: 2). On the other hand, Kim et al (2002: 2) state that transparency includes

consultation with interested parties, usage of plain language in drafting laws and regulations, appeals process that is clear, predictable and consistent, and controls on regulatory discretion established through standardized, transparent procedures for making, implementing and changing regulations.

Regulators need to demonstrate their accountability by documenting how the views of stakeholders were considered and used during the development of regulations. Where stakeholder input could not be reflected in the proposed regulations, the regulator should be able to outline the reasons behind such omissions (Treasury Board of Canada, 2007: 2).

Radaelli (2005: 4) complements Kirkpatrick and Parker by stating that RIA is also based on the principles of necessity, proportionality and simplicity. These principles are interpreted to mean that regulatory action should be implemented only when it is necessary to regulate and after considering the option to do nothing. Regulatory action also needs to be proportionally related (not to over or under regulate) to the conditions that requires regulation and should be simple to implement and enforce (Radaelli, 2005: 4). As indicated earlier, it is these principles that ensure efficiency and effectiveness of a RIA process, as well as effective regulation.

2.3.2 Why RIA

According to McConnell (2010: 349), there are three different dimensions of policy. Understanding of these dimensions makes it possible for stakeholders and interested parties to judge the perceived level of success for any policy. There is the process dimension (which is concerned with who, when and how to consult including all other activities involved in weighing the pros and cons of different choices)programme dimension (concerned with what governments do to give concrete forms of their generalised intentions policy statements), and the politics dimension (which is concerned with the political repercussions of government choices of including the timing of decisions and the symbolism of particular forms of action or inaction) (McConnell, 2010: 349).

Given the explanation provided for each of the above mentioned dimensions, the USOs initiative can be regarded both the process and programme dimensions of the South African universal service and access policy. Policy (regulatory policy) in this context refers to the way policy makers and regulators draft, update, apply and enforce regulations and foster public understanding of these processes (OECD, 2005: 9).

As indicated earlier, the overriding purpose of RIA is to establish the positive and negative impact (costs and benefits) of regulatory policy before, during and after its implementation. Such an overarching purpose is made possible by the below discussed benefits of RIA.

The high regulatory burden reduces the resources that businesses have available for investment in equipment and human capital. In turn, this affects the country's national competitiveness within the global economy. RIA has the ability to reduce regulatory burden to all stakeholders (regulator and industry) thus enhancing their competitiveness (Welch, 2005: 2). For regulatory authorities, such burden could be in the form of administrative costs while for business they could be in the form of compliance costs.

Furthermore, RIA can be used to examine the impact of new or existing regulations on the competitive environment (Welch, 2005: 2). Commenting on this issue, Parker (2006: 4) state that RIA needs to also consider the implications for competition by a regulatory proposal. Applied before and during the USOs implementation process in South Africa, the RIA process would have made a case for scrutinising the possible impact of imposing 22000 CSTs to Vodacom while MTN got 7500 CSTs while the MNOs were both new market entrants. Furthermore, the impact of the requirement for Cell C to roll out its CSTs in areas with 10% and less fixed line penetration, might have been investigated and anticipated given the then general level of tele-density in the country.

RIA contributes to increased transparency and accountability by requiring regulatory authorities to explain the reasons for a given regulatory proposal, how the proposal addresses an identified problem and the expected benefits (Welch,

2005: 2). Commenting on the same issue, RIA promotes accountability for regulatory actions and outcomes, and transparency in decision making to avoid arbitrariness and promote accountability.

RIA has the potential to improve monitoring of existing regulatory interventions (Kirkpatrick et al, 2003: 5). Commenting on the same issue, Welch (2005: 2) state that RIA provides a tool for monitoring and evaluation, which in turn help governments to review the effectiveness of their interventions, businesses advocate for improvements in burdensome regulations, and citizens hold their governments to account for delivery of the benefits promised. Commenting on the impact of RIA on monitoring, Kirkpatrick et al (2003: 5) state that RIA has the potential to improve the monitoring of existing regulatory policies, and may help to constrain economically damaging regulatory discretion and expose cases of regulatory conflict between stakeholders.

RIA increases integration between sectors (Backlund, 2009: 1081). This is particularly true in instances where a regulatory proposal has an impact across various sectors. Given the facilitating nature of ICT, the departments of education, health, social development and communications were definitely impacted by the imposed USOs.

RIA also serves as a communication and information tool (Backlund, 2009: 1081). This purpose is served by consultations that are frequently part of this process. The analytical nature of the RIA process, particular consideration of cost and benefits of a regulatory proposal, also help in decision making. The vague description of regulatory requirements opens an opportunity for their reinterpretation by stakeholders. In some instances, this might lead to some “corrupt” activities. RIA then reduces any opportunity for corruption by any stakeholder that might arise out of a realisation of such vagueness.

Lastly and most importantly, RIA is concerned both about the outcome and process dimensions of any regulatory intervention (Parker, 2006: 6). Commenting on this issue, Kirkpatrick et al (2003: 4) state that RIA can contribute to both the outcome and process dimensions on national objectives.

As can be seen from the above discussion, there are numerous benefits associated with the RIA process. Some benefits and rationales for RIA can also be explained in terms of the constituent parts of the whole process (RIA process).

2.3.3 Stakeholders in the RIA process

The various theories of regulation discussed above seek to provide an explanation of how regulation arises and develops. Furthermore, explicit in some of these theories is the fact that regulation can sometimes be viewed as furthering or protecting the interests of certain stakeholders over others within the regulatory process. The same could be said with the RIA process. There are various stakeholders (actors) in a RIA process. RIA has the expert, the civil servant, the politician, the citizen and the firm as actors (stakeholders) in the process (Radaelli, 2005: 14). These different actors bring diverse logics, criteria and quality assurance mechanisms into the RIA process (Radaelli, 2005: 14). This makes RIA mean different things to each of these stakeholders, and probably the criteria they each apply to measure the success of regulation process. The experts (the economists) are neutral and rational actors seeking to achieve efficiency objectives out of the RIA process, while the civil servants approach RIA by following proper and legitimate procedures in the regulatory process (Radaelli, 2005: 16). Politicians are best-described by public choice theory and use consensus as the main criterion of the process. Politicians further evaluate success of the RIA process in terms of the outcomes of a negotiation process (Radaelli, 2005: 16). Lastly the citizens are attentive, seek effective protection and want participation in the RIA process as a measure of success while the firm perceives the opportunity of minimizing costs and profit maximization from the RIA process (Radaelli, 2005: 16). This clearly shows diverse interests by stakeholders in the RIA process. As a process, RIA is designed to take care of the diverse interests of stakeholders, in addition to improving regulation.

2.3.4 The RIA process

As alluded to earlier, RIA intends to improve the quality of new or existing regulations in the hope that it will achieve the minimum adverse impacts, especially in relation to business and economic performance (Carroll, 2010: 1). The ability of the RIA process to improve the regulatory process and associated regulations makes it relevant for USOs initiative in South Africa.

As seen above, the problem identification step purports to ensure that all stakeholders have a common understanding of the problem. More importantly, goals are set towards the resolution of such a problem. The consultation process step seeks to legitimize regulatory action, through giving all stakeholders an opportunity to state their views and interests in relation to the problem.

Below is a discussion of steps within the RIA process highlighting various pertinent issues on monitoring and evaluation (as the focus of the study) as well as other steps within the process. These steps are a prerequisite in trying to balance the competing interests of stakeholders within the RIA process.

A. Problem identification

Problem identification is the first and key step of a RIA process. Problem identification step involves the acknowledgment that there is a problem and attempts to distinguish it from perceived problems (Regenesys, 2002: 11). In order to understand the problem clearly and within its context, the responsible regulator and or government need to start by asking some fundamental questions about the problem and factors contributing to the problem. Importantly, these questions should involve trying to understand what the problem is, groups affected by the problem and how they are affected, key concerns of the public and key stakeholder groups, the cause of the problem, events or behaviour that contribute to the problem, what motivates key players to contribute to the problem, and many other relevant questions that will improve the regulator's understanding and ability to resolve the problem (German Agency for Technical Cooperation, 2005: 13). As many as possible alternative solutions to the problem are also generated during this step, and the most appropriate alternative is

chosen for implementation (Regenesys, 2002: 11). The process of generating various alternative solutions in this step involves the option to do nothing about the problem. In the context of USOs in South Africa, this could mean allowing the market forces to bridge the digital divide.

Accurate analysis (costs-benefits analysis) is the cornerstone for credibility of the RIA process. Cost benefit analysis involves the careful definition of goals, the exploration of alternative means of achieving these, including a rigorous analysis of the costs and benefits of each option, and then selection of that option which predictably will maximize the net expected benefits (Froud & Ogus, 1996: 222). If properly done, RIA should present the decision makers with correct and important issues they have to address (Radaelli, 2005: 18). This aspect of the RIA process is also part of this very first step of the process.

B. Consultation

There are various mechanisms that can be used by governmental bodies as a way of keeping stakeholders informed about programmes or policy. These vary between mere sharing information with them after a decision has been made to engaging and discussing with them until a shared decision is arrived at. Interaction with stakeholders through using any mechanism between these extremes can be regarded as consultation. Consultation is a two-way exchange of ideas and information in which stakeholders are given an opportunity to provide input and affect the outcome of the regulatory process (Treasury Board of Canada, 2007: 2). Consultation engages stakeholders in a dialogue in order to pre-empt implementation problems and cultivate policy legitimacy, thus resulting in viable and successful programmes (McConnell, 2010: 348). For consultation to be effective, it is important for regulator to recognize the multiplicity of stakeholders, with their different levels of interests, points of view, and expectations concerning the nature and content of a proposed regulatory regime. Furthermore, consultation has to be ongoing and constructive between the regulator and stakeholders (Treasury Board of Canada, 2007: 2).

Consultation, as part of the RIA process, serves to bring about legitimacy in regulation. The start of consultation within the RIA process should be preceded by answers to the following questions: What do we want to talk about? Who do we want to talk with? When should we talk? How should we communicate? (Milligan, 2003: 5). Consultation of other interested stakeholders also provides an alternative in trying to understand and resolve the regulatory problem at hand. As indicated earlier, different actors bring diverse logics, criteria and quality assurance mechanisms into the RIA process (Radaelli, 2005: 14). Commenting on the consultation process, Prosser (2010: 17) state that regulation provides a forum for participation and deliberation (common place for regulatory debates) with key characteristics being regulatory transparency, regulatory consultation, accountability and openness in general. Problems of imperfect information, discussed earlier, can also be tackled through consultation.

There are various tools that can be used to consult stakeholders. These include public meetings, usage of video conference facilities, focus groups, bilateral meetings, etc. However, no single-size-fits-all tool works for all consultations (Treasury Board of Canada, 2007: 12). The appropriateness of any consultation tool depends, largely, on the attributes of consulted stakeholders. For instance, a special and appropriate tool or approach might have to be used when consulting deaf people, or people of a specific literacy level.

As highlighted earlier in this study, the USOs initiative impacted on various stakeholders including school communities, rural and probably illiterate communities, people with disabilities, as well as ordinary communities. Given the diverse nature of these stakeholders, various consultation tools and approaches should have been used to consult them on the initiative. For consultation to be effective, it must be meaningful *(officials should be open and take stakeholders' views and opinions into consideration when proposing regulations)*, open and balance *(all stakeholders whether directly or indirectly affected should be consulted)*, transparent and accountable *(where stakeholder views could not be accommodated in the proposed regulations, officials should be able to provide*

the reasons) (Treasury Board of Canada, 2007: 12). Furthermore, it needs to be ongoing, constructive and professional.

When policy or regulatory tools lack legitimacy and hence credibility, at best they become bureaucratic tick-the-box routines, and at worst they are highly contested (Radaelli, 2005: 8). Lack of consultation, particularly with the regulated industry, fuels knowledge gaps between the regulator and the industry. This further result in the interests of the industry being ignored, thus increasing the inability to comply by the industry (regulatory risk) (Shulz & Held, 2001: A-6).

From the above discussion, it can be concluded that regulations produced via participation and deliberation result in efficient and fair regulation. While deliberation may inevitably lead to conflicts between regulatory principles, it could be argued that this helps in highlighting various perspectives of the problem, thus making possible to resolve it. Lastly, the mere fact that all stakeholders participate in the deliberations by raising issues, and push for certain positions in relation to the issue at hand, serves as a catalyst for improved regulatory policy.

C. Monitoring

Monitoring is a key ingredient for the successful implementation of any policy, programme and or initiative. It is an integral part of policy development and management cycle. Monitoring is defined as an ongoing, systematic collection of information to assess progress towards the achievement of objectives, outcomes and impact (Roseborough, 2009:7). In defining monitoring, Gyorkos (2003:275) states that monitoring is a process of collecting and analyzing information about the implementation of a program for the purpose of identifying problems such as non-compliance and taking corrective action.

The setting of indicators to measure progress on input (input indicators), activities (process indicators), outputs (output indicators), outcomes (outcome indicators) and goals is important both for the monitoring and evaluation processes (Fuentes, 2006: 11). Indicators are defined as a quantitative or qualitative factors or variables that provide a simple and reliable means to measure achievement or to reflect the changes connected with an intervention or process (UNDP, 2002:

50) The setting of indicators helps managers to identify those parts of the initiative or policy that may or may not be achieving results as planned (Kusek & Rist, 2004: 66). It is important to ensure that the selected indicators are clear and allows managers to be able to measure progress. Kusek and Rist (2004: 68) emphasizes the importance of ensuring that indicators are clear (precise and unambiguous), relevant (appropriate to the subject at hand), economic (available at a reasonable costs), adequate (provide sufficient basis to assess performance), and monitorable (amenable to independent validation). He refers to such indicators as “CREAM” indicators.

The above definitions emphasize that monitoring occur during the implementation of a policy, project or programme. This renders it as an informative process since the information collected during the process informs (“real time”) stakeholders of the level of success in policy or project implementation. The definitions further imply that monitoring is an internal responsibility of the implementing organization. This makes monitoring to be the responsibility of managers and officers of the implementing agent. In the case of USOs in South Africa, relevant managers and officers working for ICASA are responsible for monitoring their implementation. However, it is clear the extent to which monitoring was done.

However, for it to be implemented successfully, planning for both monitoring and evaluation activities should happen before the project, programme or policy is implemented (Kusek & Rist, 2004: 53).

D. Evaluation

Evaluation refers to the selective exercise that attempts to systematically and objectively assess progress and the achievement of an outcome (United Nations, 2002: 6). Gyorkos (2003:275) concurs by stating that evaluation is a process that attempts to determine as systematically and objectively as possible the relevance, effectiveness, and impact of activities in the light of their objectives. Gyorkos further state that the primary objective for an evaluation process is to measure the impact of a programme and or policy, which in turn will inform the

implementation of the future or ongoing programme or policy. This helps stakeholders to use the output of the process with insight and thus effectively.

Evaluation can be applied either by internal or external stakeholders of the implementing agent, and for it to be effective, it is dependent on proper planning. Stakeholders responsible for an evaluation step (and process) need to know what needs evaluation, when and how (Kusek & Rist, 2004: 14). Key to an evaluation process is knowledge, by programme and or policy implementers and relevant stakeholders, of the main objective(s) for the step or process.

Evaluation is not a one-time event, but an exercise involving assessment of differing scope and depth carried out at several points in time in response to evolving needs for evaluative knowledge and learning during the effort to achieve an outcome. From the above definitions, it can be realized that evaluation is a systematic and objective process which seeks to produce knowledge and information about the attainment of policy objectives or intervention against its objectives. The definitions further depict the evaluation process as summative in nature given the kind of information it provides to programme managers and other stakeholders.

Evaluation can be performed before the implementation of a development intervention (axe ante evaluation) or after the development intervention has been completed (ex post evaluation). When done before the implementation of a development intervention, evaluation process produces both qualitative and quantitative data and information (baseline information) which informs implementers of their current position in relation to a given initiative or policy (Kusek & Rist, 2004: 33). When done after the development intervention has been completed, evaluation process identifies factors of success or failure, assess sustainability of the results and impacts, and draws conclusions that may inform other future interventions (Kusek & Rist, 2004: 225). This renders evaluation to be regarded as summative in nature since it provides the status of a after its implementation.

On the other hand, monitoring signals potential weaknesses in the programme design, allowing adjustments to be made (Roseborough, 2009:7). This enhances transparency and accountability within programmes and policy implementation initiatives. Monitoring and evaluation further act as a source of knowledge capital through developing a knowledge base of the types of projects, programmes, and policies that are successful, and more generally what works, what does not, and why (Kusek & Rist, 2004: 20). Monitoring and evaluation also provides feedback to management of progress towards the achievement of the predefined goal(s). Combined, these steps enhance the importance of RIA as a process.

The above discussion on monitoring and evaluation depicts these two processes as complementing each other. They both inform the policy and or programme implementation process. Monitoring informs the actual implementation process while evaluation assesses the effectiveness and impact of the implemented policy and or programme. Annecke (2008: 2840) highlights this point by stating that monitoring and evaluation are conducted for two major reasons, first is to track the implementation process (monitoring), second is to learn from the experience and use this learning to design future projects better (evaluation). Below is a table indicating the complementary roles of these two processes:

Table: 6. Complementary roles of monitoring and evaluation

Monitoring	Evaluation
Clarifies program objectives	Analyzes why the intended results were or were not achieved
Links activities and their resources to objectives	Assesses specific causal contributions of activities to results
Translates objectives into performance indicators and sets targets	Examines implementation process
Routinely collects data on the indicators, and compares actual results with targets	Explores unintended results
Report progress to managers and alerts them to problems.	Provides lessons, highlights significant accomplishment or program potential, and offers recommendations for improvement.

Source: Kusek and Rist (2004: 14)

Table 6 above, depicts the complementary nature between monitoring and evaluation processes during the implementation of a development intervention. Monitoring helps clarify programme objectives to ensure that all stakeholders are equally informed on what the programme is trying to achieve. The translation of objectives into indicators through the monitoring process step seeks to ensure that identifiers of success and or failure of the intervention are also known upfront before the intervention gets implemented. The routine data collection aspect of this process step seeks to inform managers of the intervention (and other interested stakeholders) about progress made, and alert them of the problems, if any.

On the other hand, the evaluation process step is first implemented just before the development intervention gets implemented (axe ante evaluation). This is done to collect base line information of the conditions before the implementation of the intervention. During the implementation process, the evaluation process step would seek to provide the reasons for achieving or not achieving the intended objectives, causes for these reasons, examines the implementation process and provide lessons learnt on the intervention and its implementation process.

2.4 Frameworks for monitoring and evaluation

There are various frameworks used to monitor and evaluation the implementation of development interventions. Formulation of monitoring and evaluation objectives, identification of indicators, monitoring, reports on results and evaluation are all generic characteristics of these various frameworks. Below is a table of various monitoring and evaluation frameworks highlighting their distinct characteristics.

Table: 7. Frameworks for Monitoring and Evaluation

Demand Oriented Approach	Output Based Approach	Outcome Mapping Approach	Results Based M&E Approach
Demand driven paradigm (understand the needs of end users)	Focuses on output delivery of any input	Organisational oriented monitoring and evaluation approach	Results oriented
Understands possible impact of a intervention before implementation	Focuses on funding and delivery of services	Enables organisations to document, learn from, and report on their achievements	Four layered approach with inputs, outputs, outcome, and impact
Understanding of problematic situations requiring intervention	Define objectives and specify expected output in terms of performance rather than input	Evaluation oriented	Focuses much on outcomes and impacts achieved by an intervention
Information collected through participatory assessment	Focuses on accountability and production of results	Views outcomes as behavioural change	Indicators at each stage (input, outputs, outcome , and impact indicators)
.Project level monitoring	A policy level monitoring and evaluation approach	Focuses on programme learning and improvement	Focuses on long term and cognisance that long term changes may not be achieved directly
Integrates monitoring and evaluation from the preparation phase of the project	Contracting is based on performance through this approach	Stresses that development is accomplished by and for the people	More applicable at a policy making level but can be used for a project
Focuses on participation, needs and impact	User and beneficiaries can get involved in monitoring and evaluation	Organisation and programme level approach	Focus on objectives, indicators, monitoring, reporting on results, evaluation, and learning
Focuses on the socioeconomic impact of interventions	Tied up with contractual framework due to its focus on outputs	Focuses on planning, monitoring, and evaluation of targeted behaviour than impact	

Source: Compiled from Fuentes, 2006: 10-14

A key challenge facing monitoring and evaluation processes is that the impact of an initiative or policy is not always evident immediately after implementation of a

policy or initiative. The more removed the impact (in time) from the implementation the more difficult to attribute any impact on the intervention. This is referred to as the “attribution gap” and it very important for managers to also take it into cognisance when implementing an intervention (Annecke, 2008: 2842). This will help managers not to wrongfully attribute success or failure of an intervention to themselves.

2.5 Conceptual framework

The above review of literature has emphasised numerous critical issues on regulation, regulatory impact assessment and universal service and access. In particular, various theories, approaches, rationales and reasons for regulation have been discussed as part of the literature review. The normative theory postulates that regulation ought to be introduced when there is market failure, and the positivist theory postulates that regulation exists since it is a powerful means to redistribute wealth in the society (Hodge & Theopold, 2001: 17-18). The public and private interest theories have also been discussed in the literature review. Furthermore, economic regulation and social regulation as types of regulation have also been discussed. Social regulation comprises of regulation in the area of the environment, labour conditions, consumer protection and other areas while economic regulation refers to reforms aimed at increasing the economic efficiency by reducing barriers to competition and innovation, often through deregulation and use of efficiency-promoting regulation, and by improving regulatory frameworks for market functioning and prudential oversight (den Hertog, 1999: 224; OECD, 1997:6). The rationale for regulating universal service and access in South Africa can be located within these regulatory theories and types of regulation, and the theories, types and rationales for regulation will then be used as the basis for the study.

The literature review further discusses universal service, universal access and universal service obligations. Universal service obligations are an implementation strategy for universal service and access (Lewis, 2010), which assist in improving

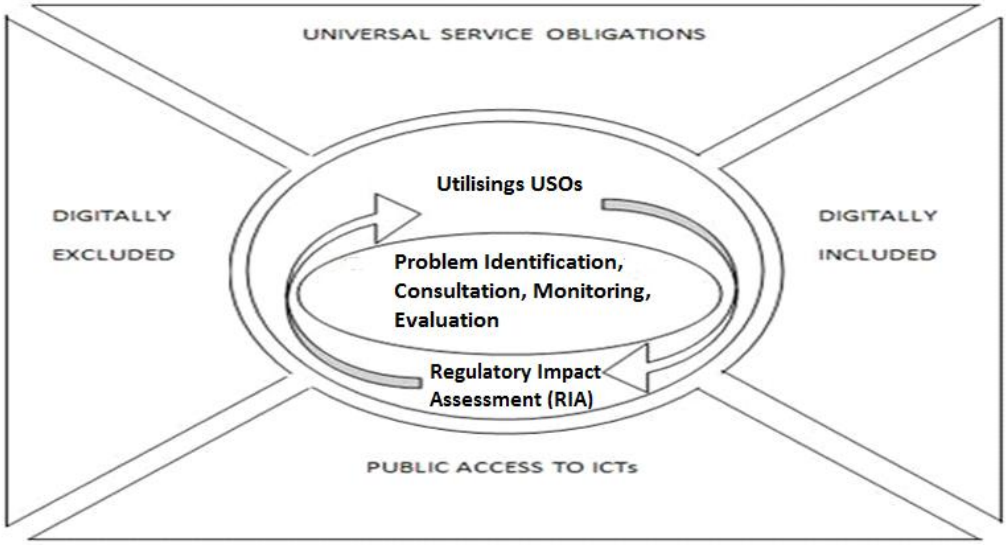
people's access to ICT services. As indicated earlier, Castells (1999: 3) states that" the crucial role of information and communication technologies in stimulating socioeconomic development is a double-edged sword", which allows people and communities to leapfrog stages of economic growth on the one hand while ensuring cumulative retardation for those people and communities who cannot adapt to these technological systems. The implementation of universal service obligations in South Africa is informed by the digital divide between the digitally excluded on one hand (*communities and individuals without access to ICT services*) and the digitally included (*communities and individuals with access to ICT services*) within the country. As indicated by Castells above, the retardation of the digitally excluded is worsened by lack of access to such ICT services. The USOs are then implemented as a tool, amongst many other possible tools, to bridge the digital divide thus ensuring harmonious and almost equal socioeconomic development of communities and individuals.

The literature also discusses the RIA process and principles, as the basis for good regulatory intervention. These principles and process form the basis of this research. The RIA process and principles will act as the yardstick to measure regulatory policy and practices in South Africa within the context of this research. RIA has the potential to strengthen regulation by systematically examining the possible impacts arising from government actions, thus enabling communication with decisions makers in a way that allows them to consider the full range of positive and negative effects (costs and benefit) that are associated with a proposed regulatory change (Kirkpatrick et al, 2003: 5).

The research then looks at the possible impact and outcome, had RIA been used in respect of USOs in South Africa. This is done by comparing what occurred during the imposition and roll out process of USOs on one hand, and the impression of interviewees and what the literature has to say about RIA. The resource intensiveness of USOs (as an intervention) necessitates the implementation of an effective monitoring and evaluation process and system by regulators, using RIA or at least RIA aligned processes. These processes – problem identification, consultation, monitoring and evaluation – are used to

inform the data collection, analysis, conclusions and recommendations. This will allow regulators to understand their socioeconomic impact of using USOs, and also compare such implication in relation to other mechanisms to promote mobile access.

Figure: 5. Generic model for M&E on USOs



Source: Ngcobo: 2012

.Generally, attempts to bridge the digital divide have had mixed success depending on the approach used in each country. This has often led to the widening of the divide and or maintenance of the status quo.

2.6 Chapter conclusion

As indicated in the beginning of this chapter, regulation is a mechanism through which the digital divide can be bridged. As part of the regulatory interventions, many mechanisms can be used to bridge the digital divide including USOs. However, given that regulation sometimes lead to unintended results, it is important for regulatory authorities to understand the impact and implications of any regulatory intervention on their part. The RIA process is one tool that can be used by regulatory authorities in evaluating such impact. RIA, if implemented, will

ensure efficient implementation of USOs using its process and principles of transparency, accountability, consultation, monitoring and evaluation amongst other tools.

Chapter 3: Research methodology and design

This chapter focuses on the research methodology and research design of this study. The data collection and analysis approach is also the focus of this chapter. The chosen research methodology, design, data collection and analysis approach is in line with the identified research problem of inability, by MNOs, to implement all the imposed USOs thus bridging the digital divide. Based on the purpose for this research, the main research question has been formulated as follows:

> To what extent would ICASA have benefited from using regulatory impact assessment in respect of universal service obligations for MNOs?

In order for the researcher to be able to answer this main research question in line with literature review already conducted for this study, below are the research sub-questions covering the themes of the RIA process and other pertinent issues already discussed:

- Which problem identification and consultation processes were followed for USOs for mobile network operators?
- Which monitoring and evaluation processes did ICASA use for USOs for mobile network operators?
- Which aspects of regulatory impact assessment did ICASA take into account in such monitoring and evaluation processes?
- What improvements can be made with respect to the regulatory implementation of USOs for mobile network operators?

3.1 Research design and methodology

The research methodology used in this study is the qualitative research method. Leedy and Ormrod (2005: 133) states that the qualitative approach to research focuses on phenomena that occur in a natural setting, that is in the “real world”,

and it involves studying those phenomena in all their complexity. Babbie and Mouton (2001: 272) complements this view by stating that the qualitative researcher has a preference of understanding events, actions and processes in the context. This methodology allows the researcher to investigate and understand the approach, processes and systems used by ICASA while monitoring the USOs implementation progress. In particular, this methodology allows the researcher to identify the characteristics of such an approach, processes and systems. Furthermore, this methodology allows the researcher to investigate and understand issues and complexities encountered by mobile network operators while implementing the imposed USOs in the country. Leedy and Ormrod (2010: 137) state that qualitative design provides the means through which a researcher can judge the effectiveness of a particular policy, practice, or innovation. On the other hand, Creswell (2003: 31) seems to complement this view by stating that qualitative inquirers use theory in their studies as broad explanation for behaviour and attitude. Creswell (2003: 31) further states that qualitative researchers increasingly use a theoretical lens or perspective to guide their studies and raise the questions they would like to address, and are important to examine. Consequently, regulatory theory and the regulatory impact assessment theory are used to provide a theoretical lens to this research study, and further guide the researcher on the important issues to examine during the research process. These theories further provide the researcher with a yardstick to judge the effectiveness of a monitoring and evaluation approach, processes and systems used by ICASA in respect to USOs. Lastly, the regulatory impact assessment theory also provides the researcher with a yardstick to judge ICASA's effectiveness in monitoring and evaluating the USOs implementation progress.

The research design for this study is a descriptive exploratory design. Babbie (2005: 91) states that a major purpose of social science research is to describe situations. Leedy and Ormrod (2010: 182) elucidates this view by stating that descriptive research involves either identifying the characteristics of an observed

phenomenon or exploring possible correlations among two or more phenomena. As alluded to earlier, this design allows the researcher to identify the characteristics of a process used by ICASA to impose, monitor and evaluate the implementation of USOs. De Vaus (2001: 2) complements Leedy and Ormrod by stating that accurate descriptions of any phenomenon have historically played a key role in social policy reforms. De Vaus (2001: 2) further state that by demonstrating the existence of social problems, competent description can challenge accepted assumptions about the way things are and can provoke action. Good description provokes the "why" questions of explanatory research (de Vaus, 2001: 2). As alluded to earlier, the descriptive exploratory design allows the researcher to identify the characteristics of a monitoring and evaluation approach, processes and systems used by ICASA with respect to the USOs implementation progress. Furthermore, the research seeks to identify correlations, if any, between the characteristics of the implemented approach, processes and systems on the one hand as well as the level of success of USO implementation by MNOs on the other hand.

Babbie (2005: 89) states that social research is conducted to explore a topic, that is, to start to familiarize a researcher with that topic. Babbie (2005: 89) further states that exploratory studies are most typically done for three purposes: (1) to satisfy the researcher's curiosity and desire for better understanding, (2) to test the feasibility of undertaking a more extensive study, (3) to develop the methods to be employed in any subsequent study. Sparks (2010: 1) seems to agree with Babbie by stating that researchers have no machines to peer inside a decision problem, so they may use certain research techniques to "open up" the problem and look around. Sparks (2010: 1) further states that the entire notion of "exploratory" research suggests that it precedes a larger, more formal research project. When used to prepare for more extensive studies, exploratory techniques can: (1) assist market researchers in finding and developing a list of possible causes to the problem, (2) assist in developing a list of realistic strategy options which are most likely to achieve the objective (Sparks, 2010: 1) Exploratory

research involves conversation between a researcher and people being studied, and it produces qualitative data (Sparks, 2010: 2). McKenzie and Danforth (2009:43) concur by stating that exploratory research may be conducted to obtain greater understanding of a concept or to help crystallize the definition of a problem. McKenzie and Danforth (2009: 43) further states it is used to identify important variables to be studied. The usage of the descriptive exploratory design allows sufficient flexibility for the researcher to explore the issues and complexities encountered by MNOs when implementing USOs, while also exploring the characteristics of the monitoring and evaluation approach used by ICASA with respect to USOs, though as post graduate research it may not succeed in fully understanding the process and issues.

3.2 Data collection and analysis

The research starts by reviewing existing literature on regulation, universal service, access and universal service obligations as well as regulatory impact assessment. This is done to extract some themes from this literature so that they serve to guide the kind of data that needs to be collected during the research process. Creswell (2003: 31) states that theory provides a lens to guide the researchers as to what issues are important to examine.

This study uses both primary and secondary data sources. The researcher observes that using multiple sources of data assists in getting more relevant and complementary data. Further, this should help in cross referencing and hence verifying the validity of information collected. Leedy and Ormrod (2005: 89) states that primary data is often the most valid, most illuminating, and the most truth-manifesting. Such validity could be attributed to the fact that this kind of data is extracted directly from the source. A single strategy was used to select interviewees. A purposive non probability sampling technique was used to identify the subjects (interviewees) of the interview. Non probability (also known as random) sampling technique is arbitrary and subjective, and is normally done

with a pattern or scheme in mind (Cooper & Schindler, 2008: 379). Neuman (2006: 220) concurs by stating that the relevance of interviewees in relation to the research topic is more important for qualitative researchers rather than their representativeness of their population. This approach is used given the researcher's understanding of the industry and interest in getting to understand issues relevant to this research. Purposive (also known as judgement or purposeful) sampling addresses specific purposes related to the research questions, and therefore the researcher selects cases (interviewees) that are information rich in regard to those questions (Teddlie & Tashakkori, 2009: 173). Merriam (2002: 98) concurs by stating that purposeful sampling is a technique which seeks information-rich cases. Purposive samples are often selected using the expert judgement of the researchers and informants, and are typically small (usually 30 or fewer cases) (Teddlie & Tashakkori, 2009: 174). The purposeful sampling technique was chosen since the researcher wants to identify interviewees with experience of working with universal service and access issues, including universal service obligations in South Africa.

Before the commencement of the detailed interviews, a preset set of questions was piloted using subjects who understand the industry. A pilot is a small experiment designed to test and gather information prior to a larger study, in order to improve the latter's quality and efficiency. A pilot study can reveal deficiencies in the design of a proposed experiment or procedure and these can be addressed before time and resources are expended on the large scale studies (National Centre for the Replacement, Refinement and Reduction of animals in Research, 2006: 1). The research subjects involved in the pilot were not included as participants in the larger study. However, useful and relevant information received from the pilot process was used to enhance the quality of research questions and design for the study. Once the initial set of questions had been piloted and corrected if necessary, participants to the pilot assist the researcher by identifying other relevant subjects who can be interviewed later in the larger study. The identified subjects further identify other potential subjects of

the interview after they have been interviewed. This is known as the snowball sampling technique, and is a specific type of purposeful sampling technique. Snowball sampling, also known as chain sampling, is a well known purposive sampling technique that involves using informants or participants to identify additional cases who may be included in the study (Teddlie & Tashakkori, 2009: 175). Snowball sampling technique is commonly used to locate, access, and involve people from specific populations in cases where the researcher anticipates difficulties in creating a representative sample of the research population (Cohen & Arieli, 2011: 427). Given that the issue of universal service obligations is still an ongoing discussion in the South African telecommunications industry, the snowball sampling technique is used so as to limit the potential resistance which may be encountered by the researcher during the research process.

Primary data was collected using the semi- structured interviews technique as a data collection method. Representatives from the three MNOs, Universal Service and Access Agency of South Africa (USAASA), ICASA, the Department of Communications (DoC) and a group of experts on universal service issues will be interviewed. Leedy and Ormrod (2010: 188) state that in a semi structured interview the research may follow the standard questions, with one or more individually tailored questions to get clarification or probe a person's reasoning. Noor (2008:1604) concurs with this view by stating that a semi structured interview offers sufficient flexibility to approach different interviewees differently while still covering the same areas of data collection. The usage of semi structured interviews, as a data collection technique, allows the researcher flexibility to discuss pertinent issues with each of the representatives from various identified stakeholders with respect to USO implementation and monitoring processes. Questions asked during the interviews were based on open ended questions. A total of seventeen (17) interviews with representatives from the identified stakeholders was conducted. Five experts were interviewed and two representatives from each of the above mentioned six stakeholders were

interviewed. The reason for the researcher to choose to interview more experts than representatives from each of the above mentioned stakeholders is to get more insight into the universal service obligation phenomenon from neutral and objective sources. The semi structured interviews were recorded using a digital recorder, and after seeking permission from the interviewees. This was done to enhance the quality of information and the flow of discussions during the interview.

Given that there is a single set of interview questions which was used for all interviewees, irrespective of the stakeholder they represent, the researcher recognises that some interviewees may provide more insightful information when answering certain questions as compared to others. However, the researcher believes that the interviewees can study provide more insight on issues that are pertinent and relevant to their respective organisations. For instance, the interviews with MNO representatives sought to get information on their (MNOs) experiences during the USOs implementation process, and how that impacted on their USO roll out ability and plans. The MNO interviews further sought to understand whether any reporting was done by them, on USOs implementation progress, to ICASA. The researcher believes that interviewing representatives from ICASA helped in providing more information on the characteristics of the monitoring and evaluation approach, systems and process used in respect of USOs. Representatives from USAASA were also interviewed due to the organisation's legal mandate on universal service and access in general. The researcher hoped that USAASA would provide a more objective view of the whole USO programme, given this mandate and their involvement on universality programmes. The researcher believed the DoC representatives would provide more insight on policy matters in respect of USOs.

Document analysis was used to collect secondary data sources. Cooper and Schindler (2008: 147) define document analysis as the evaluation of historical or contemporary confidential or public records, reports, government documents, and

opinion. While the focus of the research is to collect secondary data from reports on USOs implementation progress submitted to ICASA by MNOs, other relevant industry documents including studies on the implementation of USOs in South Africa were used. The researcher first reports the findings of the research project as they emanate from the interviews as well as document analysis. These are reported following the themes in the literature review section of the research.

The researcher then analyzes the collected data using themes of the RIA process identified in the literature review section of this research. Where necessary, each of these themes is divided into sub-themes. As part of the analysis chapter, new themes are created as informed by the research findings chapter. The researcher is of the view that creating sub-themes allows him to analyse specific information that may come up from supporting questions of each theme. The sub-themes further enable the analysis of universal service and access policy issues discussed in the literature review section of this research. Mouton (2001: 108) states that analysis involves “breaking up” the data into manageable themes, patterns, trends, and relationships. Mouton (2001: 108) further state that the aim of analysis is to understand the various constitutive elements of data through an inspection of the relationship between concepts, constructs or variables, and to see whether there are any patterns or trends that can be indentified or isolated, or to establish themes in the data. The monitoring and evaluation activities by ICASA are analysed using the characteristics of the demand oriented approach of monitoring and evaluation framework discussed earlier in this research.

As a mechanism to further facilitate the data analysis of this research, interviewees are categorised as MNO interviewees (for all interviewees representing the three MNOs), expert interviewees (for all representing a group of experts), and government interviewees (for all representing the DoC, ICASA This takes care of ethical and confidentiality issues promised to interviewees.

An exploratory data analysis approach is used for this research. Cooper and Schindler (2008: 445) state that exploratory data analysis provides the researcher with flexibility to respond to the patterns revealed in the preliminary analysis of data. Cooper and Schindler (208: 445) further state that patterns in collected data guide the data analysis or suggest revisions to the preliminary data analysis plan.

The study concludes by making general recommendations on the characteristics of a good monitoring and evaluation system or mechanism that should be used by ICASA to monitor USOs. In doing so, the study considers views raised by interviewees on how they would like to see future universal service and access initiatives being rolled out. These recommendations should be of benefit to ICASA in terms of a more effective approach to follow should they decide to impose USOs in future.

3.3 Chapter conclusion

The research methodology used in this study is the qualitative research method. Qualitative researchers use a theoretical lens or perspective to guide their studies and raise the questions they would like to address, and are important to address (Creswell, 2003: 31). The research takes an exploratory research design approach. Exploratory research may be conducted to obtain greater understanding of a concept or help crystallize the definition of a problem (McKenzie & Danforth, 2009: 43). A purposive sampling technique known as snowballing technique was used to identify interviewees. Semi-structured interviews were used to collect data from primary sources while document analysis was used to collect secondary data. Data was analysed using themes from the RIA process, principles and universal service policy issues discussed in the literature review section of the research.

The next chapter reports on findings of the interview process. Themes coming out of the interview process are integrated into the RIA themes used for analysis. This chapter has a section on information collected from primary data sources (interviews) and another on secondary data sources (document analysis).

Chapter 4: Views on the implementation of USOs

As mentioned in the previous chapter, the research findings are reported in this chapter using four themes from the conceptual framework. These themes are problem identification, consultation, monitoring and evaluation. Sub-themes, where appropriate, are created by the researcher guided by responses to the sub-questions. The problem identification theme seeks to get the interviewees' views (and hence an understanding by the researcher) on the rationale and or the actual problematic situation(s) that USOs were trying to rectify or address. In line with this theme, the researcher is of the view that there should have been "something" that USOs were addressing or meant to address. In other words, the USOs were not an end in themselves but a means to an end. The problem identification theme has (a) the USOs identification process, (b) the scope of USOs, and (c) the cost-benefits of USOs, and the funding of USOs as the sub-themes. The consultation theme seeks to understand, from the interviewees' perspective, the processes followed by ICASA and government in soliciting the views and wishes of all stakeholders that were to be impacted by the USOs implementation. There are no sub-themes that constitute this theme.

The monitoring theme seeks to get more information on complexities or issues encountered by stakeholders during the USOs implementation process, how they (the issues) were monitored and resolved. This theme has one sub-theme, namely the USOs implementation complexities. The evaluation theme seeks to get information from interviewees about the success of the USOs initiative. The theme has (a) the relevance and success of USOs, (b) the impact of competition on USOs, and (c) the impact of RIA, as sub-themes. Other relevant market dynamics (demand, supply, etc) are also highlighted under the USOs and competition sub-theme. All these themes are process steps within the RIA process.

4.1 Phases of USOs for MNOs

Below is a summary of USOs imposed on MNOs during each phase, and an indication of progress made towards their fulfilment. This summary could partly be regarded as the information upon which interviewees' views and responses were based.

Table: 8. Phases of USOs for MNOs

Phase	Universal Service Obligation
1	22000 CSTs and 7500 CSTs to Vodacom and MTN respectively
2	Same as the previous phase
3	52000 CSTs for Cell C only, 2.5 million SIM cards per MNO, 125000 terminal equipment per MNO, Internet connectivity for 5000 public schools per MNO, 1400 terminal equipment for institutions for people with disabilities per MNO, Internet access to 140 institutions for people with disabilities per MNO
4	Carried over from the above phases

Source: ICASA, 2010a; 2010b; 2010c

4.2 Four themes pertaining to RIA and USOs for MNOs

As indicated earlier, a total of seventeen (17) semi-structured face to face interviews were conducted. The interviewees were selected based on the experience they posses (as individuals and as a collective) in working with universal service and access issues in South Africa. Below is a discussion of key issues raised by the interviewees, using the above mentioned themes and sub-themes. Data obtained from document analysis is integrated with data obtained from interviews.

4.2.1 Problem identification

The following questions were asked by the researcher in trying to solicit views of interviewees about the problem identification process in respect of USOs.

- Why were USOs imposed?
- How were USOs identified?
- How do you think USOs should be identified in future?

- What were the costs (not only financial) to stakeholders of implementing USO?
- What were the benefits (not only financial) to stakeholders of implementing USO?

When responding to the questions, interviewees had numerous and diverse views in respect of the rationale for USOs, and what they (the USOs) were trying to address. Despite these sometimes diverse views, six common categories emerged amongst the majority of interviewees. One reason for imposing USOs, according to the majority of interviewees, was to correct the wrongs committed by the pre-1994 government. This related to unequal or skewed service delivery of ICT services in areas inhabited by Blacks compared to those inhabited by Whites during the apartheid years (MNO interviewee 4: 17 February 2012). MNO interviewee 4 stated that "from a political angle, South Africa consisted of a privileged few in terms of access to ICT services, which created some social gap that had to be closed through the USOs, amongst other mechanisms".

The majority of interviewees saw Telkom's failure to roll out its fixed telephone lines to certain areas (particularly remote and rural areas), as another reason for the imposition of USOs by regulatory authorities. Expressing his view on the influence of Telkom's failure on the introduction of USOs, expert interviewee 2 (1 December 2011) stated that "USOs were imposed to avoid network roll out failure similar to that of Telkom by MNOs". Expressing a similar view on this issue, government interviewee 2 stated that "the new government wanted to avoid what had happened under Telkom's monopoly in terms of ICT service delivery failure particularly in rural areas" (interview: 13 January 2012) .

Another major reason for imposing USOs on MNOs was because of the need to achieve universal service and access to ICT services given the access gaps in some parts of the country that needed to be closed. Government interviewee 6 stated that "South Africa is still a developing country, with ICT access gaps that needs to be closed" (interview: 1 November 2011). The interviewee further stated that the "USOs were used as a tool to bridge the digital divide".

Government interviewee 2 expressed a similar view on this issue by stating that "USOs were imposed to achieve universal service and access to ICT in South Africa" (interview: 13 January 2012). The interviewee further stated that they (the USOs) were to be rolled out to previously un-served areas. In support of this view, MNO interviewee 5 stated that "South Africa had a low ICT network penetration particularly in rural areas (referred to as underserved), and one way of trying to accelerate infrastructure and service deployment in these areas was to stipulate obligations to licensees" (interview: 19 December 2011). MNO interviewee 3 expressed his view on the issue by saying USOs were imposed "to bring the dial tone to grass roots level particularly in previously disadvantaged areas" (Interview: 18 January 2012).

Another reason for imposing the USOs was because it is an International Telecommunications Union's (ITU) best practice meant to increase access to ICT, which government benchmarked against. "The issue of universal service and access to ICT services is in line with the international telecommunication reform agenda" stated expert interviewee 1(interview: 15 November 2011). Expressing his view on this issue, MNO interviewee 5 highlighted that "in terms of the ITU, this is a best practice that has already happen *(sic)* in other countries" (interview: 19 December 2011).

A further reason for imposing USOs, according to expert interviewee 2 (interview: 1 December 2011) and government interviewee 6 (interview: 1 November 2011), was to "limit cherry picking" by the recently licensed MNOs. On this issue, these two interviewees highlighted that both government and the regulator felt that the then recently licensed MNOs were likely "to service urban, highly populated, profitable and growing markets at the expense of rural" and previously disadvantaged areas. Expressing his view on this issue, MNO interviewee 3 stated that "government simply used a theory of economics which states that business would not serve certain areas if left alone" (interview: 18

January 2012), in deciding on USOs. The sixth reason for imposing USOs, according to an expert interviewee 2 (interview: 1 December 2011) and MNO interviewee 6 (interview: 1 February 2012) was for MNOs to "pay" for having been allowed to access the frequency spectrum (a national resource) at a relatively low price. The expert interviewee 2 further mentioned that this was because "the licence fees for spectrum access could not be set too high since operators would have struggled to establish themselves and expand". In further expressing his view on this rationale, MNO interviewee 6 stated that "USOs were imposed as a form of tax on MNOs" (interview: 1 February 2012), clearly suggesting that this (the tax) was some form "punishment" to MNOs.

Many of these categories and or reasons were corroborated by an independent research (ICASA, 2010d: 2) stating that "the fundamental justification for introducing and or continuing with USAOs is based on the reality that, in their absence, there will be numbers of residents within a country who inevitably do not have, or are denied access to specific telecommunications services". The review report (ICASA, 2010d: 2) further states that the lack of access arises for two reasons, namely (a) "uneconomic areas for operators to provide network coverage due to the country's territory", (b) "some residents incomes may be too low for them to afford access at reasonable prices to the network available at the locations". Lastly, USAOs are necessary, although not sufficient, for overcoming the "digital divide" which inhibits all the residents of a country from being able to enjoy equal economic and social opportunities and exploit their individual and cooperative capabilities to the utmost of their potential (ICASA, 2010d: 2). The independent review report on compliance with USAOs points to particular strengths and weaknesses with the regulatory design of USOs.

From the above views, it is clear that the main reason for imposing USOs was due to ICT service being seen as a "social good" that everybody had to access, particularly the previously disadvantaged people. However, there was an

antagonistic feeling towards USOs such that one interviewee implied that they were a “punishment” or “tax” levied on MNOs.

A. The USOs problem identification process

As indicated in Table 8, USOs were imposed on MNOs over a period of time that can be divided into four phases. During this period, numerous regulatory tactics and approaches, to be highlighted in this section, appear to have been used by ICASA and DoC in identifying and communicating the USOs to MNOs and other interested stakeholders. For instance, the first set of USOs was imposed using an approach or tactics that appeared political in nature, the schools connectivity was announced through a policy statement by the then Minister, and other tactics will be highlighted later on in this chapter. Despite the multiplicity of the approaches used, it is still not clear how the decision makers arrived at the specific USOs that were imposed, and this lack of clarity seems to have led to some stakeholders supporting or being against the USOs initiative.

There is a lack of consensus amongst interviewees on the effectiveness and efficiency of the process used by the regulator and government to identify the USOs. One group of interviewees, even though in the minority, feels that a proper approach was followed in imposing the USOs. Statements like “the imposition of USOs was entirely a regulatory process, and ICASA benchmarked against international best practices” were uttered in support of this view (government interviewee 2: 13 January 2012).

On the other hand, another group of interviewees used various statements to indicate that the imposition of USOs was flawed from the beginning. “The initial set of USOs came from the DoC (then Department of Post and Telecommunications)” highlighted (expert interviewee 2: 1 December 2011). “There were weaknesses and glitches in how these USOs were identified” stated (MNO interviewee 5: 19 December 2011). The interviewee further stated that the weaknesses and glitches related “to policy as well as regulatory matters”. Government interviewee 5 confirmed the existence of “glitches” during the USOs identification process,

stating that “the approach to identify USOs was problematic” (interview: 25 October 2011). This view was further corroborated by statements like “the approach to identify USOs was a lucky packet really”, expressed by expert interviewee 4 (interview: 25 January 2012), and “there was no empirical reason used for USOs” stated expert interviewee 1 (interview: 15 November 2011).

Furthermore, government interviewee 6 saw the imposition of the first set of USOs, as a “flawed political decision” (interview: 1 November 2011). This is because “there was no regulatory framework used for GSM 900 USOs” (government interviewee 6: 1 November 2011). The interviewee further stated that “this set of USOs was imposed even before SATRA was established, using the Post Office and Radio Acts as regulatory frameworks’. “There were also no definitions for universal service, universal access and the needy people, which should have been used to frame the target parameters for achieving universal service”, said government interviewee 6 (interview: 1 November 2011). Government interviewee 4 felt “no clearly defined approach” was followed in identifying these USOs, they were “just imposed arbitrarily” (interview: 6 January 2012). The interviewee further stated that “the USOs were politically seen as a good idea”.

There were no changes with respect to USOs when licences were issued to MNOs. The same set of USOs imposed during the first phase was carried over to the second phase. Again, interviewees felt no proper process was used to decide on carrying over this set of USOs. Statements like “the chosen model for USOs identification was a thumb suck without any scientific basis” were uttered (government interviewee 6: 1 November 2011). The interviewee further stated that “government’s shareholding at MTN ended up making the MNO (MTN) to get fewer USOs”. Expert interviewee 4 is of the view that these USOs were identified “based on incorrect market projections, and could not be adjusted with market conditions” (interview: 25 January 2012). Despite the lack of evidence, it is worth

mentioning that MNOs have indicated compliance with this set of USOs (ICASA: 2010d: 4).

As indicated in Table 8 of this study, the third phase of USOs was from the year 2001 to 2004. During this phase, new USOs (1800MHz and 2100MHz obligations) were added on to those of phase 1 and 2 (also discussed in chapter 1 of this study). The USOs imposed during this phase seem to have been identified through a slightly different process. Furthermore, there is some consensus amongst interviewees on the existence of some "credible" approach to USOs identification process by regulatory authorities. Expert interviewee 3 stated that "it appears census information in respect of people with access to ICTs" was used to identify recipients of the phase 3 USOs (interview: 11 November 2011). During this phase "the DoC would grant the licence and ICASA would then have to administer the process" (expert interviewee 2: 1 December 2011). MNO interviewee 6 was of the view that the USOs identification process is "ICASA's prerogative" (interview: 1 February 2012). In fact, "the Internet service provision quotas were given to each MNO by ICASA" agreed MNO interviewee 1 (interview: 8 November 2011).

On the other hand, some interviewees emphasised different but seemingly complementary aspects of USOs problem identification process during this phase. Government interviewee 3 stated that "a beauty contest and competitive bids by MNOs" was used thus ensuring that "licensees got access to the 1800MHz and 2100MHz spectrum" (interview: 24 January 2012). The interviewee further stated that MNOs "requested the licences in exchange of rolling out services" and USOs. Lastly, the interviewee stated that "major promises, even beyond the ITA- Invitation to Apply, were made by MNOs that got licences". In reference to the same issue, expert interviewee 1 stated that "these USOs were based on offer by MNOs themselves, ICASA then regulated by putting them into a framework and licences" (interview: 15 November 2011). Further corroborating the "participation" of MNOs in the USOs identification process, MNO interviewee 6 stated that "Cell C actually pushed to have CSTs obligations imposed on them as the MNO had been dealt with slightly different from others" (interview: 1

February 2012). MNO interviewee 3 stated that “the 1800MHz and 2100MHz obligations came about as part of a negotiation process between operators and the DoC” (interview: 18 January 2012). During the negotiations between DoC and MNOs, MNOs agreed to offer 1.5 million SIM cards per operator. “However, about 1 million more SIMs per MNO somehow crept into the licences” (MNO interviewee 3: 18 January 2012). As a result, licences were issued together with these USOs (expert interviewee 5: 21 November 2011). The interviewee further stated that MNOs had to accept the licence, given its commercial importance of 2100GHz spectrum to them (to MNOs).

The public schools, public health facilities and institutions for people with disabilities were all identified through a process led by ICASA, as beneficiaries to receive USOs (government interviewee 3: 24 January 2012). While the reason for choosing these beneficiaries largely remains a mystery, a statement like “guess work approach to identifying schools seem to have been used”, according to expert interviewee 4 (interview: 25 January 2012). This is supported by statements like “For instance, the actual number of schools was less than the target of 5000 schools allocated per operator” said expert interviewee 1(interview: 15 November 2011). The interviewee further stated that “it was not like 15000 schools were in need and ready to accept the Internet”. Lastly, the interviewee seemed to acknowledge that while the schools’ USOs appeared to have been based on “goodwill”, which was “very commendable”, they proved unworkable. In reference to similar issues raised by expert interviewee 1, expert interviewee 2 stated that “the messy situation in USOs identification makes it unclear even why they (the USOs) were rolled out to schools” (interview: 1 December 2011).

Despite this problem identification process, numerous other critical and related issues seemed to have gone wrong with the process. Expert interviewee 3 stated that Cell C was required to roll out its CSTs based on the percentage (10%) of fixed line penetration in the country, while Vodacom and MTN had been given

specific areas to roll out their CST (interview: 11 November 2011). The interviewee further stated that “this created a blunder with Cell C licence since the operator was able to install its CSTs in suburban areas given that the fixed line tele-density was generally below 10% in the entire country”. Indicating his view on the process followed to identify the problem that USOs were meant to address, expert interviewee 5 highlighted that “the USOs were identified based on what was seen as general needs of the people in certain areas, using a closed process only known to ICASA” (interview: 21 November 2011). Lastly, expert interviewee 3 highlighted that the USOs were never updated as various licences were issued during the USOs roll out phases (interview: 11 November 2011). Thus the USOs imposed before the establishment of the sector regulator remain in force today.

Commenting on the problem identification process, the independent compliance review report (ICASA, 2010d: 19) states that there is no evidence of a systematic approach to identifying ICT access gaps and addressing them appropriately through universal service obligations. The review further (ICASA, 2010d: 5) further states that “the issuing of Universal Service and Access Obligations (USAO) seems to have partly been influenced by the evolution of the South African telecommunication industry”. In particular, “the entry of new industry players” accompanied by “new” services made the USAOs a necessity.

Referring to any possible future USOs, all interviewees (including government interviewees) unanimously agreed that future USOs would need to be informed by a known and identified access gap. Furthermore, the expert interviewee 4 stated that future USOs would have to be demand driven as opposed to the current supply driven approach (interview: 25 January 2012). Referring to the same issue, Vodacom, MTN and Cell C (12 November: 2010) feel that USOs should be based on consumer demand for the service (*response to USOAs discussion document published by ICASA*).

The above views by interviewees clearly suggest that there was no streamlined USOs identification process. Expert interviewee 5 stated that “RIA could have

resolved the challenges associated with the USOs problem identification process given its focus on outcomes and process" dimensions of any regulatory intervention.

B. The scope of the USOs

The scope of USOs imposed on MNOs has been clearly outlined in chapter 1 of this study. It included network coverage requirements, CSTs roll out, internet access to ordinary public schools, public health institutions, further education and training institutions as well as institutions for people with disabilities (expert interviewee 4: 25 January 2012). The emergency 112 and 1020 call centres were also included as part of the scope for USOs.

It is worth mentioning that when the researcher probed on the reasoning behind imposing these specific types of USOs, and why the specific beneficiaries were selected, most interviewees did not have a definite answer. A response like "a guess work approach was used" was given as an answer. However, government interviewee 3 conceded that "the whole issue of ICT access was a green field since no information of those with such access existed before" (interview: 24 January 2012). The interviewee further stated that "SIM cards and Internet to schools" were then seen by government as important to improve ICT access. In relation to the same issue, government interviewee 1 highlighted the fact that SIM cards used to be very expensive and were then also seen by government as another barrier to ICT access (interview: 17 January 2012). This partly accounted for the reason these types of products were imposed as USOs.

In addition to the above mentioned USOs, Cell C committed to spend R1 billion over 10 years in respect of Joint Economic Development (JED) (ICASA: 2010d: 17). JED places obligation on Cell C to assist government in economic development through job creation, local exports, boosting foreign investment, forging international linkages, R&D, training local personnel, establishing regional headquarters in RSA and developing local value added technology (ICASA: 2010d: 17).

Commenting on the scope of USOs, all MNOs stated that the scope of USOs should also be determined based on consumer demand for services rather than the current supply led approach.

C. The costs and benefits of USOs in South Africa

There were two divergent strands of views expressed by interviewees in relation to the costs of implementing USOs. One strand of views postulated that there were costs associated with USOs implementation, while the other view negates this. The view which acknowledges the existence of costs further divides them into financial and non financial costs. It is worth mentioning that while industry and expert interviewees generally held the former view, government interviewees held the latter view.

Government interviewee 5 stated that “operators did not incur any USOs roll out related costs given that most USOs imposed on them were never implemented” (interview: 25 October 2011). The interviewee further stated that “operators looked for loop holes in the regulatory process and used them to avoid rolling out the imposed USOs”. Referring to the same point, government interviewee 4 mentioned that “MNOs did not lose anything” given that they did not implement the imposed USOs (interview: 6 January 2012). MNO interviewee 6 corroborated this view by stating that “to be quite honest, most of these USOs have not been fulfilled, so I can’t really say there were huge costs incurred” (interview: 1 February 2012). The beneficiaries of USOs also did not incur any financial costs due to their non implementation (expert interviewee 5: 21 November 2011).

The other strand of views indicated that there were costs incurred by stakeholders with respect to USOs implementation. MNO interviewee 4 stated that the contribution to the Universal Service and Access Fund was a cost, “while it is a funding mechanism”, but was also “a major financial cost to MNOs associated with the rolling out USOs” (interview: 17 February 2012). This view is

exacerbated by the fact that such contribution ended up not being used for its purpose. Commenting on this issue, the independent review report (ICASA, 2010d: 18) states that “section 67(2) of the Telecommunications Act obliged all operators to pay not more than 0.5% of their turnover”, which ICASA initially set at 0.16% and later revised it to 0.2 percent. Providing slightly more detail on this issue, compliance and review reports (ICASA, 2010a, 2010b, 2010c: 3) further states that in the 2009/10 financial year USAF contributions by the three mobile operators were as follows, Vodacom paid R88 million, MTN paid R45 million, while Cell C paid R16 million.

Commenting on this issue, Vodacom, MTN and Cell C are of the view that the current 0.2% contributions are enough and should not be upwardly adjusted until a full needs analysis and USOs costing exercise is done (12 November 2010). MNO interviewee 1 stated that the other financial costs associated with USOs implementation (particularly CSTs) related to the “acquisition (buying) and modification (creation of ventilation, etc)” of shipping containers (interview: 8 November 2011). These shipping containers were and are still used as CSTs to house ICT services. In reflecting on this issue, Reck and Wood (2003: 1) state that the entrepreneurs (as beneficiaries of USOs) also seemed to have incurred costs. Specifically for Vodacom CSTs, entrepreneurs had to pay R26000 to own and operate this shipping container with five lines. In addition, each entrepreneur would have to pay transport costs for shipping containers from where they were modified to sites identified by them. Such costs varied between R200 and R1000 per container, depending on the distance (Reck and Wood, 2003: 1). While these cost figures related to Vodacom’s CST initiative, other MNOs also incurred possibly similar costs for their CST initiatives given that the franchise approach of using shipping containers to create CSTs was adopted and used by all MNOs. The procurement of telephone devices, their installation in these containers, and their continued maintenance was also another cost to MNOs (MNO interviewee 3: 18 January 2012). It can be concluded that the entire preparation of shipping containers, including branding, had financial implications for operators.

MNO interviewee 6 indicated that MNOs also had to develop business units and employ people to manage them (the units) given that the CSTs had created a market which needed attention (interview: 1 February 2012). These business units were and still continue to run on a day to day basis as part of MNO operations. In reference to the same issue, MNO interviewee 3 stated that "there were human capital costs since MNOs had to create full universal service or community service business units" (interview: 18 January 2012). The interviewee further stated that "even the tariffs on CST calls were subsidized heavily by MNOs", despite them being owned by independent entrepreneurs. Expert interviewee 5 mentioned that the other costs to MNOs related to the fact that e-rate calls were charged at 50% discount (interview: 11 November 2011). As a result MNOs had to subsidize the other 50% which impacted on their profit margins.

The other costs incurred by MNOs, according to expert interviewee 4, related to "research and development of appropriate technologies" to roll out as USOs (interview: 25 January 2012). The interviewee further highlighted that "Vodacom's initial iteration of CSTs (before the shipping containers) was a GSM hand held phone using a card". This phone was distributed to teaching (lecturers) and non teaching staff (administrative staff) in some of the previously disadvantaged tertiary institutions. These staff members were expected to encourage students to use these phones since they were cheap at R0.45 a call per minute. However, this technology was changed after an audit by USAASA which indicated that this concept of a CST was not working effectively. This led to the idea of a shipping container CST. The interviewee further stated that "Cell C in particular had to pay for the Human Science Research Council's GIS capability". "This capability was used by the MNO to identify areas with less than 10% tele-density, since they were required to roll out their USOs in such area". Such capacity also had to be duplicated at ICASA so that they could monitor the roll out each time this MNO submitted information on their roll out progress.

Another key cost to Cell C and MTN, in particular, related to the legal battle which ensued between these MNOs due to the USOs initiative. Given that Cell C was installing the CST containers even in suburban areas, this meant that Cell C had to pay a termination rate of R0.06 cents per call per minute to MTN from its CST containers. On the other hand, MTN would pay the R1.25 cents commercial termination rate per call per minute for a call originating from its network and terminating into Cell C's network. This made Cell C to get higher termination revenue from the off-net calls between these operators (expert interviewee 4: 25 January 2012). MTN viewed Cell C's behaviour as being anti-competitive, lodged a grievance with ICASA, and even refused to pay the commercially agreed upon termination rate to Cell C given the dispute. This legal battle carried a huge financial cost for both MNOs. The special call rate of 90cents per call per minute plus the special termination rate of R0.06 cents per call per minute, associated with CSTs, meant that MNOs had to subsidise these services since they were below the normal commercial rates. Furthermore, this then posed lower revenue for MNOs.

Commenting on costs to MNOs, Reck and Wood (2003: 1) states that Vodacom had a budget of about R5 million which was used to launch the Vodacom CST initiative, including the team to manage this new business. This budget covered most capital investment activities related to the then new business. This included the acquisition of containers and payment of about R30000 for the modification of each shipping container to house the CSTs.

Reputational costs were also "paid" by implementing stakeholders (MNOs, ICASA, USAASA and DoC), given their failure to deliver on USOs. Expert interviewee 1 stated that "parliament was upset at DoC given the failure to implement USOs" (interview: 15 November 2011). Such anger extended to MNOs since they were "seen as not supporting government's initiative", while ICASA and USAASA "were accused of failing to regulate" effectively (expert interviewee 1: 15 November 2011). This was despite the CSTs and coverage

obligations seem to have been well implemented. On the other hand, government interviewee 5 stated that “the failure of the USOs initiative reflected badly on USAASA than any other stakeholder in the sector” (interview: 25 October 2011). Such a feeling could probably be attributed to USAASA’s legal mandate in relation to universal service and access in the country.

A number of interviewees suggested that one critical cost element associated with USOs roll out related to time. Expert interviewee 1 stated that “a lot of time was wasted when MNOs were travelling and trying to identify schools that had been allocated” to them (interview: 15 November 2011). This was because “no one seemed to know the actual location” of these schools. Some of the allocated schools, in terms of the roll out list, “did not even exist” (expert interviewee 1: 15 November 2011). In relation to the same issue, expert interviewee 3 stated that “a lot of time was wasted while MNOs were trying to figure out the requirements” (interview: 11 November 2011).

The beneficiaries of USOs also seemed to have carried some costs given the roll out process. MNO interviewee 2 stated that “CST entrepreneurs had to procure land (as in sites) where CSTs were to be located or get permission to use it” from municipalities or rightful owners (interview: 17 February 2012). “The poor schools, including no fee schools, were required to pay the remaining 50%” for Internet access in line with the e-rate regulations (expert interviewee 2: 1 December 2011). This cost element was a turn off for many schools given that (a) principals and or schools were to be held liable for the payment of the other 50% for Internet service, and (b) there were other government sponsored initiatives that were free of charge to schools. Gauteng online was one such initiative (expert interviewee 5: 21 November 2011). The interviewee further stated that these schools also had to have physical space to accommodate the USOs (computers), and further train some of the teachers on ICT literacy, so that these computers could be used.

ICASA did also incur some costs due to USO implementation. Firstly, “studies were commissioned and consultants were used by ICASA to try and understand

the country's level of ICT penetration" (expert interviewee 5: 21 November 2011). This was due to such information not being easily available to the regulator. The interviewee further stated that "ICASA also had to prepare regulations trying to ensure that USOs are implemented". All this amounted to some non financial cost to the regulator.

Reflecting on the costs and benefits of USOs, expert interviewee 5 stated that "problems associated with the USOs initiative stemmed from the fact that no cost benefit analysis" was ever done before any regulatory intervention (interview: 21 November 2011). Commenting on the same issue, expert interviewee 1 stated that "RIA also focuses on the costs and benefits of any regulatory intervention" (interview: 15 November 2011). "Its application with respect to USOs would have shed some light" on these two variables.

The biggest cost that could be associated with the USOs initiative, according to government interviewee 4 "was failure to provide a service to the people" (interview: 6 January 2012). Expressing his view on this issue, expert interviewee 2 stated that "an opportunity was missed of connecting communities since operators did not do anything despite USOs being imposed" (interview: 1 December 2011). The interviewee further stated that "operators waited for a perfect USOs scheme" before they could roll out services to communities. Lastly, the interviewee highlighted that such waiting might have been exacerbated by "an absence of a mechanism to credit MNOs" should they had gone ahead and implemented USOs in the absence of a proper system. While these costs could be expressed in financial terms, the aggregate amount of these costs is still not clear.

There seem to be numerous benefits associated with USO roll out according to the interviewees. This was despite the initiative being seen, by the majority of these interviewees, as a costly exercise for MNOs. According to all interviewees except two, all stakeholders benefited from USOs roll out even though to various degrees.

The two interviewees have a slightly different view on the benefits that flowed from USOs implementation. MNO 3 stated that "there were no financial benefits for MNOs in the short term" since CST services had to be subsidises from commercial operations, due to the R0.90 cents per minute call rate plus a special termination rate of R0.06 cents (interview: 18 January 2012). "This had an impact on the MNOs' profit margins" said the interviewee. Furthermore, "the e-rate regulations required MNOs to give a 50% discount on participating e-rate institutions to ensure affordability of services" (expert interviewee 5: 21 November 2011). This further limited what could have been benefits to MNOs. Commenting on this issue, the independent review report (ICASA, 2010d: 22) states that the "Minister of Communications through a policy directive issued on 3 September 2004 in Government Gazette n. 30308 determined 18 January 2005 as the date from which all public schools and public further education and training institutions shall be entitled to a 50% discount". The report (ICASA, 2010d: 22) further states that "the Ministerial determinations unfortunately did not prescribe internet access components on which the 50% discount had to be levied". This should have made it difficult for MNOs to understand and or determine the components of the internet service impacted by the 50% discount.

Other interviewees are of the view that all stakeholders, particularly the MNOs, benefited from USOs roll out. MNO interviewee 4 stated that the rolling out of USOs particularly to "certain areas that operators had initially regarded as unprofitable, ended up creating a market for them" (the MNOs) (interview: 17 February 2012). An increase in network coverage, which was a requirement, also benefited communities in terms of getting them affordable access to voice services. "This is due to the fact that a call originating from a CST was R0.90 cents a call per minute, and was thus very affordable" (Government interviewee 6: 1 November 2011). Commenting on this issue, Reck and Wood (2003: 7) state that the CSTs provided affordable voice service at one third (R0. 85 cents) of the commercial rate of R2.75 per call per minute (Reck and Wood, 2003: 7). Such affordability further had an impact on people's calling behaviour, even when they

had access to cell phones. For instance, it was not uncommon for CST customers to look up contact information from their personal cell phones books prior to making a call through a CST (Reck and Wood, 2003: 7). With the CSTs located within the communities, they also facilitated ease of access to ICT services. The government interviewee 6 further stated that the rolling out of USOs also "helped improve people's appreciation of the role of cell phones". "Learners in the few schools that got connected" were then able to access the internet, and MNOs "got to be known better by communities" since they were working closely with them (MNO interviewee 5: 19 December 2011). This increased the brand awareness, within communities, for MNOs that were working with them including schools (MNO interviewee 5: 19 December 2011). Speaking on the same issue, government interviewee 4 also stated that "USOs roll out increased brand recognition for operators" (interview: 6 January 2012). Furthermore, "operators used schools as sites to erect their base stations", which was easier and cheaper to secure than going through municipalities (MNO interviewee 5: 19 December 2011). "Each school that worked with a specific operator would end up using it (that operator) for internet and other ICT services" (MNO interviewee 5: 19 December 2011). This "network locked" the schools with the respective MNO thus creating a guaranteed revenue stream for them – the MNOs (MNO interviewee 5: 19 December 2011).

Another benefit for USOs roll out, particularly the CSTs was "the identification and nurturing of entrepreneurs from previously disadvantaged communities" where these CSTs were located (government interviewee 6: 1 November 2011). They were given training and subsidies to start their own CST businesses. Subsequently, jobs were created. "Each entrepreneur was able to employ at least two people" (MNO interviewee 1: interview: 8 November 2011).

An increase in calling traffic was another benefit which accrued to MNOs due to CSTs roll out. As a result, "there was a time when most of Vodacom's call traffic was generated by the operator's CSTs" (expert interviewee 4: 25 January 2012).

The interviewee further stated that this was because the MNO “approached CSTs as a business rather than an obligation”. The CSTs generated a lot of revenue for MNOs. For instance, “the CST business was a R600 million business per annum” for one of the MNOs (MNO interviewee 2: 5 December 2011). Commenting on these two issues, Reck and Wood (2003: 1) states that the CST entrepreneurs paid for their airtime upfront, thus guaranteeing revenue for MNOs while reducing the risk of non payment at the same time. Reck and Wood (2003: 1) further states that a well located CST with five lines would, on average, experience more than 100 hours of calling per month per line, generating a total average revenue of R27, 000 per month. The entrepreneur would retain two thirds of this revenue (R18, 000) and pass the remainder (R9, 000) to an MNO (Reck and Wood, 2003: 1). While this ensured another revenue stream for MNOs, it further ensured an additional distribution channel for their services. Given that CSTs were owned by entrepreneurs, MNOs were not liable for any damages, theft, or business mismanagement for CSTs. MNO interviewee 3 stated that “CST business units had to be created by MNOs, and run as part of the day to day operations of business” given the magnitude of the market they had created (interview: 18 January 2012). The rolling out of USOs (CSTs in particular) also “helped boost the reputation for MNOs” in particular (expert interviewee 3: 11 November 2011). They were seen as having delivered on the government’s mandate, the USOs.

Another benefit for rolling out CSTs relates to the manner in which it changed people’s calling behaviour patterns. MNO interviewee 3 stated that “people became creative and used their cell phones as pagers”, given the “please call me” facility (interview: 18 January 2012). In response to receiving a please call me, people would then go to a CST to make a call. This ensured that people used CSTs as an affordable facility to make calls.

Given the numerous challenges encountered by stakeholders in rolling out USOs, expert interviewee 2 is of the view that one of the main benefits for USOs roll out was the lessons it provided to stakeholders “on how not to approach such an initiative in future” (interview: 1 December 2011) .

From the above views, it is clear that there were costs and benefits to USOs roll out for all stakeholders. For beneficiaries, the costs of USOs were high such that in some instances they were not affordable for recipients. The case of no fee schools in as an example. On the other hand, there were no huge costs for MNOs. The benefits of USOs were very huge for communities, particularly when considering the CST services. They were affordable and accessible to communities. On the other hand, MNOs seem to have benefited immensely from the CST initiative in particular. It seems their financial benefits far outweighed the costs they had incurred. This partly provides an explanation behind the level of success they seem to have enjoyed.

D. Funding for USOs

As indicate earlier in this study, USOs are costly to implement and hence their roll out needs to be funded from somewhere. The establishment of universal service funds and imposition of mandatory service obligations (also known as USOs) are some of the mechanisms, amongst many, that can be used to fund USOs roll out. As an international best practice, one of these two mechanisms is normally adopted and used to implement USOs or any universality initiative. “Against the international best practice of either playing or paying, South Africa opted to use both of these mechanisms simultaneously” in funding USOs (MNO interviewee 2: 5 December 2011). The interviewee further stated that MNOs contributed a percentage towards the USAF every year, as a funding mechanism for USOs. Consequently, the funds have accumulated over the years due to their non usage for the purposes they were meant to fulfil in the first place (MNO interviewee 1: 8 November 2011). Referring to the 2009/10 financial year contributions to the USAF by the three MNOs, a combined total revenue of R150 million was contributed by the MNOs alone (ICASA, 2010a: 3; ICASA, 2010b: 3; ICASA, 2010c: 3). Commenting on contributions to the USAF, Vodacom (12 November 2010) states that the amount of contributions to the USAF are believed to be in excess of R 1 billion over the past 13 years given non usage of

the fund. Expert interviewee 3 was of the view that “obligations should never be a bottomless pit where operators need to keep on investing forever” (interview: 11 November 2011).

In addition to USAF contributions, MNOs also subsidized the capital acquisition and operation of USOs. The 50% discount as per the e-rate regulations and the discount issued to CSTs owners are a case in point (MNO interviewee 4: 17 February 2012). This situation could be said to have created a “double edged sword” for MNOs with respect to the funding of USOs. In summing up the costs of USOs implementation, government interviewee 3 was of the view that as much as time might have been wasted, “confusion ensued during the USOs implementation process” thus delaying the monitoring and evaluating of what was working and not (interview: 24 January 2012).

4.2.2 Consultation

The following questions were asked by the researcher in trying to solicit views of interviewees about the consultation process which occurred in respect of USOs.

- How were the interests and views of all impacted stakeholders solicited for the USOs initiative?
- What issues of interest to your organisation/ to you would need to be considered for future USOs?

The consultation process amongst stakeholders seemed to have differed from one phase of USOs roll out to another. For instance, during phase 1 of the USOs roll out, consultation appeared to be very weak if not non-existent. Such poor or lack of consultation can partly be attributed to the fact that USOs, particularly during phase 1, seem to have been treated as part of the political negotiation process. For the GSM 900 USOs, expert interviewee 3 stated that “the schools were not consulted” (interview: 11 November 2011). On commenting on the same issue, government interviewee 6 stated that this set of USOs was “a political instruction” (interview: 1 November 2011). The interviewee further stated

that the USOs “were mooted and imposed when the democratically elected government” was about to come into power, which “did not leave much time for consultation”.

During phase two of USOs imposition, an independent sector regulator had already been established. However, no consultation took place between the regulatory authorities on the one hand and most of the interested and impacted stakeholders on the other. The USOs which had been imposed during phase 1 were merely transferred into phase 2, and put into MNOs licences. Given that these USOs had been arrived at through some political process, expert interviewee 5 was of the view that ICASA used a “one size fits all approach” to this set of USOs by using old and possibly outdated studies in identifying problems and solutions of ICT access (interview: 21 November 2011). This is because “the USOs were similar for all beneficiary institutions irrespective of their possibly diverse specific needs” (expert interviewee 2: 1 December 2011). Furthermore, they were still the same with the phase one USOs. Expert interviewee 5 further stated that “ICASA used a tit for tat approach (licences were issued with obligations already attached) to impose these USOs” (interview: 21 November 2011). The interviewee further stated that “this led to MNOs not having an opportunity to reject or accept the USOs” given that they were “embedded in the required licences”. Referring to the same issue, expert interviewee 4 was of the view that “stakeholder views on CST obligations were never solicited” (interview: 25 January 2012).

MNO interviewee 3 stated that “no specific instructions were given to MNOs around the GSM 900 set of USOs” (interview: 18 January 2012). As a result, “MNOs created ‘franchises’ for this set of USOs” (MNO interviewee 4: 17 February 2012). In further clarifying this issue, the interviewee indicated that “local and previously disadvantaged people were encouraged to become entrepreneurs” for CSTs. This approach had its own dynamics. For instance, when USAASA conducted its audit around the platinum mines in the North West provinces, “communities and mine workers around the areas indicated that they simply saw a CST having been erected in the area without being informed of

anything" (expert interviewee 4: 25 January 2012). Such roll out could partly be interpreted as having left beneficiaries without knowledge and or interest in the USOs initiative. Having said the above, it is important to highlight that neither the Telecommunications Act nor the ECA and respective regulations, made specific provision for monitoring compliance with USOs (ICASA, 2010d: 22).

When asked whether they were consulted during phase three of USOs imposition, most interviewees were unanimous in indicating that there was some consultation process during this phase. However, some of these interviewees felt that the process could have been handled better. MNO interviewee 2 indicated that "there was a public process" whose intention was to consult stakeholders on USOs (interview: 5 December 2011). The interviewee further indicated that "this was done through the publishing of universal service and access regulations in the government gazette". Expert interviewee 1 also stated that "there was a consultation process for Cell C's CSTs and negotiation with MNOs for SIM cards" (interview: 15 November 2011). Expressing his view on this issue, MNO interviewee 3 stated that "there was a negotiation process for the SIM cards obligations" (interview: 18 January 2012). The interviewee further stated that "the MNOs had promised to give out 1.5 million SIM cards per MNO when they 'discovered' a figure of 2.5 million SIM cards per MNO in their respective spectrum licences". "This was due to that shrewd Director General in the DoC" (MNO interviewee 3: 18 January 2012). The terminal equipment obligation, both for needy people and institutions for people with disabilities, were also included in the spectrum licences. "This did not give MNOs an opportunity to discuss with ICASA" on USOs before being included in the licences (MNO interviewee 3: 18 January 2012). The MNOs then had to accept the USOs "given the importance of accessing the spectrum to them – the MNOs" (expert interviewee 5: 21 November 2011).

It appears that the approach adopted by the regulatory authority and government in issuing USOs somehow made “MNOs feel coerced” to roll them out. MNO interviewee 6 stated that “a directive approach rather than consultation” was used to impose the USOs (interview: 1 February 2012). The interviewee further stated that “this made MNOs to feel insufficiently consulted”. “The MNOs did not feel the partnership between themselves and the regulator” in trying to implement the USOs (MNO interviewee 6: 1 February 2012). When probed further on the consultation process which occurred, the interviewee felt “consultation was done for the sake of it” and “to a limited extent”, and was thus not sufficient. Expressing her view on the same issue, expert interviewee 4 felt that “the 1800MHz and 3G obligations were arbitrarily imposed by ICASA” (interview: 25 January 2012). This was because “the views of MNOs were never taken into cognisance” when the USOs were crafted, according to the interviewee. This was despite the importance of considering stakeholder inputs as part of a consultation process (government interviewee 1: 17 January 2012).

From the above views, it is clear that there was some consultation between the regulatory authorities and MNOs in particular. However, there was never any consultation with beneficiaries (communities, schools, and other institutions) of the USOs. The consultation process between the regulatory authorities and MNOs was nowhere similar to the consultation process that would have happened had RIA been utilised. For instance, it appears MNOs were merely informed of these USOs and their views were never taken into cognisance. It was not a two way exchange of ideas and information. It further appears that the regulatory authorities would simply inform MNOs about USOs, call for comments from them, and then unilaterally impose them without taking into cognisance the views of MNOs. When MNOs were still waiting for further consultation to concretise the obligations, licences would be issued with USOs embedded, thus not allowing MNOs to negotiate preference for implementable USOs. This approach seems to have put MNOs in a predicament where they have had to

decide whether they want to do business or to ensure that a smooth process to identify USOs was being followed.

MNO interviewee 3 stated that, as much as there was a consultation process for the schools connectivity obligation, “the Department of Education was not consulted before the obligation was issued” (interview: 18 January 2012). Commenting on the same issue, expert interviewee 5 stated that “this made the schools’ obligation to be informed by the general knowledge” that schools did not have skills and access to ICTs (interview: 21 November 2011). Expressing her view on the consultation issue, expert interviewee 4 felt that the schools and other beneficiaries of USOs were never consulted about the initiative (interview: 25 January 2012). “This would have assisted in gauging their level of readiness to receive these USOs” (expert interviewee 4: 25 January 2012).

From the above views, feelings and impressions, it can be concluded that there was poor consultation with MNOs on these USOs, while the beneficiaries were never consulted. Furthermore, the MNOs still wanted to be consulted more on USOs, and be given an opportunity to influence their imposition, which unfortunately never happened. On the other hand, the regulator used a give or take approach when issuing licences with embedded USOs. With prospective beneficiaries of USOs having never been consulted, “their interests were taken care of by the Ministry of Communications and the regulator” (MNO interviewee 1: 8 November 2011).

Contrary to the above views and feelings, government interviewee 3 was of the view that “MNOs were consulted for phase 3 USOs, and they came forward and promised to roll them out in rural areas provided they were given licences” (interview: 24 January 2012). The interviewee further stated that “MNOs should have known the conditions of the areas they were expected to roll out USOs

before making any promises". "The conditions discovered by MNOs, during the USOs implementation process, did not appear immediately after licences were granted" said the interviewee. Lastly, the interviewee further highlighted that "the current situation makes the regulator feel cheated" by MNOs. Expressing his view on the same issue, MNO interviewee 4 stated that "there was a promise of performance by MNOs" in exchange for the licences (interview: 17 February 2012). Government interviewee 3 stated that the USO beneficiaries were "unfortunately not properly consulted" on the initiative (interview: 24 January 2012). This could be attributed to the fact that "the beneficiaries (specifically ordinary people) do not read government gazettes once published" (expert interviewee 2: 1 December 2011).

Asked on the potential impact of using a RIA consultation process, MNO interviewee 3 stated that RIA would have assisted in "informing the stakeholders about the real impact" of the USOs initiative (interview: 18 January 2012). The interviewee further stated that "the consultative nature of RIA" would have ensured that stakeholders, particularly MNOs, had "knowledge of the thinking and processes" which led to the "increase of the number of SIM cards promised", from 1.5 million to 2.5 million per operator, for instance. Still referring to the relevance and possible impact of RIA, expert interviewee 4 stated that RIA would have "ensured that all stakeholders were consulted and their views were incorporated into the USOs programme (interview: 25 January 2012).

4.2.3 Monitoring

The following questions were asked by the researcher in trying to solicit views of interviewees about the monitoring process used by ICASA in respect of USOs.

- How was the baseline information established to assist in measuring the USOs implementation progress?
- What issues were raised in the USOs implementation progress reports submitted to ICASA by MNOs?

- What regulatory action emanated from ICASA due to such reports?
- Why did MNOs fail to implement some of the imposed USOs, in particular internet in IPWD, 5000 schools per MNO, e-rate, 1020, etc?
- What made it possible for MNOs to implement the CSTs obligations to the extent they did?

The MNOs are still required to submit their annual reports to ICASA on the USOs implementation progress as part of the monitoring process (MNO interviewee 6: 1 February 2012). As part of their annual reports to the regulator, MNOs normally report on numerous issues pertaining to their operations (as a requirement) including the USOs implementation progress. Commenting on this issue, the independent review report (ICASA, 2010d: 4) states that “MNOs were required to submit USOs implementation compliance reports within two months after the end of each roll out period in relation to the internet access/ connectivity, in terms of clause 2.3 of schedule 5 in their spectrum licences”. The report (ICASA, 2010d: 4) further states that “licensees could agree with the regulator on performance indicators to assess compliance with schedule 5 of obligations”, and the regulator was “authorised to periodically assess the MNOs level of compliance with their schedule 5”.

Further commenting on this issue, the review report (ICASA, 2010d: 4) states that “it does not appear that monitoring and evaluation of the operators’ compliance with the USAOs was ever done”. In addition, no verification of whether the licensees did comply or not could be done given the lack of records to that effect, combined with the fact that MNOs were not willing to provide this information given that ‘they had given it to ICASA before (ICASA; 2010d: 4). If anything, both “Vodacom and MTN stated that they conduct voluntary monitoring of CSTs implementation and internet connectivity to schools” (ICASA: 2010d: 23). However, the quality of information generated by such monitoring activities, and the extent to which such information would meet the requirements of the regulator is not clear.

When asked about the monitoring activities in relation to the USOs initiative, the interviewees unanimously agreed that the USOs implementation process was not monitored. Expert interviewee 2 stated that “there never was any M&E scheme” for USOs initiative (interview: 1 December 2011). The interviewee further stated that “since the 1800MHz and 3G obligation, compliance monitoring was done once during the year 2010 review process”.

Expressing his view on the monitoring issue, MNO interviewee 6 stated that “no monitoring took place for the USOs initiative” (interview: 1 February 2012). The interviewee further stated that “a goal was merely given at the beginning without any timelines and plans”. Lastly, the interviewee highlighted that “the SIM cards are currently over supplied, and yet they are still a requirement in terms of the current converged licences”. Expressing his view on the monitoring issue, MNO interviewee 5 stated that “there was no monitoring” and such a situation “existed even during SATRA’s era” (interview: 19 December 2011). The interviewee further stated that “the DoC performed some monitoring related activities in the year 2009”, which culminated in the former Minister “General Siphiwe Nyanda writing a letter to MNOs informing them of the need to roll out the outstanding USOs in preparation for the 2010 soccer world cup”. “ICASA was very unhappy with the Ministry driven process arguing that it was not their responsibility to do so” (MNO interviewee 6: 19 December 2011). However, and in response, “the MNOs complied by giving the DoC 80000 (26600 per MNO) terminal equipments (smart phones) as per the Minister’s directive” (MNO interviewee 5: 19 December 2011). These were to be given specifically to police personnel and community based health care workers during the soccer tournament. Lastly, the interviewee raised a concern that these devices seem to have never been distributed appropriately given the DoC inability to account for them, after they had been given to the Department of Safety and Security.

The list of schools and health institutions was compiled by the DoC, from the other departments. MNO interviewee 5 (interview: 19 December 2011) state that “MNOs were invited, and duly accompanied former Minister Nyanda on a trip to uMsinga in northern KwaZulu-Natal, where they were required to roll out the

schools obligation in 137 rural schools in the municipality". It is unfortunate that the DoC led process was never finalised due to high turnover of political heads (the Minister).

Commenting on the issue of 80000 handsets, Cell C (12 November 2010) states that the old USOAs need to dissipate since their continued presence has led to some "abuse" of the system. Cell C (12 November 2010) further raises the fact that "the suggestion by the Department of Education to build a VPN as part of the USOAs as well as the Msinga rapid roll out project" are clear instances of such "abuse". Lastly, Cell C (12 November 2010) states that the requirement to donate 80000 handsets to SAPS in preparation for the 2010 World Cup is a clear example of such "abuse" given that this was never part of any discussions. This situation is exacerbated by DoC's failure to account for these handsets, and knowledge that these handsets have not been used months after the tournament despite the urgency from DoC when they were required (Cell C, 12 November 2010).

From the above views, it is clear that there was no monitoring of USOs roll out process similar to what would be expected in a RIA aligned process. Such lack of monitoring meant that stakeholders did not even agree on indicators that were to signal any success or failure of the roll out process. For instance, an increase in the number of SIM cards penetration in the country did not trigger any action from the regulator to either drop the SIM cards requirement or negotiate with MNOs to convert this requirement to a different type of relevant obligation.

The lack of transparency and proper monitoring process seems to have allowed numerous issues to develop and impede MNOs in their attempt to implement the imposed USOs. Interviewees indicated that they encountered numerous challenges when rolling out USOs. Below is a discussion of these challenges.

A. USO implementation complexities

The interviewees indicated that there were various challenges faced by MNOs during the USO implementation process. These challenges were communicated

with various stakeholders during the process, and some might to have been resolved in one way or another.

The USO implementation process was to be based on the implementation plans that were submitted by MNOs to ICASA for approval (ICASA, 2010d: 3). However, the very first challenge for MNOs was that the regulator did not approve the implementation plans, which meant that “the regulator was either unhappy with the plans or they were not in line with the intentions of the regulator” (expert interviewee 4: 25 January 2012). In reference to the same issue, MNO interviewee 6 was of the view that “the responsibility for approval of USOs implementation plans was squarely that of ICASA” by virtue of being the regulator, and “MNOs had no such responsibility” (interview: 1 February 2012). As a result, the MNOs expectations seem to have been that ICASA should take the lead in finalising the plans approval process. The lack of approval for these plans caused some delays and uncertainties towards the USOs implementation endeavours (MNO interviewee 6: 1 February 2012).

As indicated earlier, South Africa did not have definitions for the “needy people”, underserviced areas, universal service and universal access when the USOs were imposed. MNO interviewee 4 confirmed this by stating that “there were no agreed upon definitions for universal service and universal access” (interview: 17 February 2012). In reference to the same issue, MNO interviewee 2 stated that even “the definition for the needy people did not exist” (interview: 5 December 2011). “These definitions are generally very important since they form the cornerstone for universal service policy in any country, and further frame the target and parameters for achieving universal service” (government interviewee 6: 1 November 2011). This issue was raised with ICASA as “impeding USOs roll out” process since the MNOs were not sure which areas to go and who to target (expert interviewee 4: 25 January 2012). As indicated earlier, the 10% fixed line penetration criterion was only to be used by Cell C in rolling out its CSTs.

The interviewees indicated that a lack of clarity on specific implementation requirements was another challenging issue for MNOs which was raised with ICASA. Expert interviewee 4 stated that MNOs were required to “provide connectivity” to schools and other public institutions (interview: 25 January 2012). The interviewee further stated that such a definition of the requirement did not assist MNOs in rolling out USOs particularly since they understood “connectivity” to mean “network coverage” or “a cloud in the sky”. In reference to the same issue, government interviewee 5 stated that “the obligation was not clear whether it required MNOs to provide a link” to the school or “even end user equipment” as well (interview: 25 October 2011). The interviewee further stated that “bandwidth or through put speed” for technologies to be used for this obligation was also not specified. This generally allowed MNOs to use different types of “inferior” technologies to fulfil the obligation (government interviewee 5: 25 October 2011).

The interviewees also indicated that a lack of effective coordination amongst stakeholders was an issue which acted as a hindrance for MNOs to be able to roll out the USOs. Expert interviewee 3 stated that “there was a long delay and struggle for MNOs to get a list” of targeted schools from the Department of Education, and other institutions from relevant departments (interview: 11 November 2011). The interviewee further stated that when such a list was provided, it turned out some of the schools (physical structures) did not even exist as “teaching and learning was conducted under trees” and open spaces. Furthermore, some of the schools had been merged due to the dwindling number of learners and teachers in certain localities. This was discovered by MNOs when they went to roll out the obligation. In reference to the same issue of lists, MNO interviewee 5 stated that “the lists for schools and other beneficiary institutions did not exist” for MNOs to roll out the USOs (interview: 19 December 2011). It is important to highlight that the MNOs might have either not got the list or got an incorrect one, however they frequently roll out computer centres to schools as part of their corporate social investment. It is therefore not clear how the non-availability or “wrong list” would have stopped them from rolling out the schools’

requirement. However, the hindrance to USOs roll out can also be understood in terms of a lack of a mechanism to “credit” MNOs for having rolled out connectivity in schools which have not been prioritised by the regulator.

MNO interviewee 4 stated that “political meddling with the list process” was another challenge related to the list for schools (interview: 17 February 2012). The interviewee further stated that due to schools’ location in areas under the rule of certain political parties, the whole list process ended up being seen as part of a political process by recipient communities. Expert interviewee 4 stated that “the number of schools allocated to MNOs (5000 per MNO) exceeded the actual available physical schools” (interview: 25 January 2012). As highlighted earlier, it was not like there were 15000 schools ready and able to receive the Internet (expert interviewee 1: 15 November 2011). It is important to highlight that the issue of lack sufficient schools to roll out USOs to, is contradicted by the year 2002 total number of ordinary public and independent schools reported to be 27760 (DoE Stats: 2002: 1). The reported 24460 total number of ordinary public schools in terms of government’s schools infrastructure report of 2009, further negates this “fact”.

The interviewees also indicated that a lack of requisite infrastructure seems to have posed a serious challenge to MNOs when trying to roll out USOs. In some instances, this led to schools not being connected. The absence of energy infrastructure (electricity) exacerbated the USOs roll out challenge “since ICT needs some form of energy to function” (expert interviewee 4: 25 January 2012). MNO interviewee 3 stated that “some rural schools were located in remote areas where there was no proper road” infrastructure (interview: 18 January 2012). In reference to the same issue of infrastructure, expert interviewee 1 stated that “there was no backbone ICT infrastructure in some areas”, where schools were located (interview: 15 November 2011). This meant MNOs could not roll out USOs in such situations. In relation to the schools’ e-readiness, the independent review report (ICASA, 2010d: 27) states that “operators had difficulty with

recipients' lack of infrastructure, abilities, funds and willingness to cooperate". The report (ICASA, 2010d: 27) further states that "there is a lack of coordination and subsequent overlap with provincial projects such as Gauteng Online, the Khanya project, and as well as the DoC's Dinaledi schools and also e-NEPAD schools project". It is important to highlight that the above views contradict the reported increase in the number of schools with access to some form of energy. According to the year 2000 school register of needs published by the education department, 57.1% of schools had access to electricity which was an increase from 41.8% (Department of Education, 2002: 11).

The interviewees also reported that the existence of other government sponsored ICT initiatives like Gauteng Online and others, posed a challenge to MNOs in rolling out USOs. According to expert interviewee 4, this was due to "conflict between national and provincial authorities" around which initiative was to be rolled out in specific areas (interview: 25 January 2012). The implementation challenge might have been exacerbated by the fact that the Gauteng Online initiative, for instance, was to be rolled out free of charge to schools while the USOs initiative carried some financial "burden" for schools (due to e-rate regulations). This led to schools not being interested in the USOs initiative as a way of avoiding the associated financial commitment (expert interviewee 3: 11 November 2011).

Other issues that were of concern to MNOs, according to interviewees, and needed some attention from the stakeholders included lack of physical security in schools. This led to vandalism on implemented USOs, thus a need to replace stolen or vandalised equipment (MNO interviewee 3: 18 January 2012). A lack of feedback mechanism to MNOs on implementation progress was concern raised with the regulator, according to interviewees. This occurred since each MNO would report on its USOs implementation progress to ICASA. However, such reporting would not give each MNO a sense of aggregated USOs implementation status by all MNOs (MNO interviewee 4: 17 February 2012).This kept operators

in the dark about progress made and hence did not encourage them in any way. The interviewees also highlighted that MNOs were dissatisfied with the usage of both “pay and play” mechanisms as a way of promoting the USOs roll out. According to MNO interviewee 3, “the MNOs wanted to pay or play” since the then current practice was not in line with international best practices, and imposed a bigger ‘burden’ upon them (interview: 18 January 2012).

Expert interviewee 2 felt that the “MNOs were not very honest” when raising the issue above. The interviewee further stated that MNOs simply raised generic issues as “reasons for their non compliance” (interview: 1 December 2011).

The MNO interviewee 5 indicated that “ICASA only established the project team to deal with the 3G obligations”, as a mechanism to respond to some of the issues raised by MNOs (interview: 19 December 2011). The project team was to coordinate the implementation of these obligations. Unfortunately, the project team ended up being a “talk show” since nothing was ever delivered by the team (government interviewee 5: 25 October 2011).

Commenting on a range of issues raised by MNOs, as reasons for their non-compliance, the independent review report on compliance (ICASA, 2010d: 5) states that the development of the USAOs and coordination of the implementation process were major reasons for non-compliance by MNOs. These issues ranged from “legislative/ regulatory issues” (such as lack of definition of key concepts such as rural areas) to “implementation issues” (such as un-researched/ thumb-suck allocation of obligations and lack of allocation of roles and responsibilities for the implementation of USAOs) (ICASA: 2010d: 5).

In addition to issues raised during the interviews, the following issues were raised by MNOs as causes for non compliance. Cell C indicated that it was not clear whether to count commuters as part of inhabitants of a particular area given the definition provided (ICASA: 2010d: 25). This issue also included “difficulty in determining whether people were inhabitants of a particular area”, according to the MNO. Lastly, the MNO also highlighted a “challenge of counting inhabitants

of an area to arrive at the 10%" that the operator had to use in determining roll out areas (ICASA: 2010d: 25).

Cell C is of the view that despite some challenges related to the ECA, "this had no bearing on the implementation of USAOs". The MNO is of the view that the "implementation and enforcement of the ECA combined with the institutional managerial challenges at USAASA and ICASA led to non compliance to USAOs requirements" (ICASA: 2010d: 23).

The challenges faced by MNOs, as raised by interviewees above, seems to have emanated from logistical and planning processes during the USOs roll out process. These processes were far from being effective and efficient. This opened an opportunity for MNOs to use genuine and known issues in the country as an excuse for non compliance. While the MNOs may have encountered many of the challenges raised by the interviewees above, the general need for improved access to various services by schools puts the severity of these issues into doubt.

4.2.4 Evaluation

The following questions were asked by the researcher in trying to solicit views of interviewees about the evaluation process used by ICASA in respect of USOs.

- Were the imposed USOs relevant in relation to their purpose? Please elaborate;
- Are USOs still relevant today? Please elaborate.
- What was the impact of USOs, if any, on market dynamics?
- Did the USOs initiative achieve its purpose? Please elaborate.
- Do you think RIA would have helped in resolving some of the issues discussed during the interview? Please elaborate.

When asked about the evaluation process for the USOs initiative, all interviewees unanimously agreed that no evaluation was ever done as part of the USOs

initiative. MNO interviewee 4 stated that “baseline information was never collected thus creating an impression that there was nothing at all in the beginning” (interview: 17 February 2012). In relation to the same issue, MNO interviewee 1 stated that there was no baseline information for CSTs and schools (interview: 15 November 2011) against which to measure implementation. Government interviewee 3 stated that “she was not sure whether there was any baseline information since MNOs provided the information” (interview: 24 January 2012). The lack of baseline information, as indicated by interviewees, had implications for the planning process of the USOs initiative. Furthermore, this limited the stakeholders’ ability to track and evaluate progress made over time. Government interviewee 5 stated that there was no proper planning for USOs given that “they were a reaction” to marginalisation of particular racial groups, and were formulated close to the then first democratic elections(interview: 25 October 2011) . The interviewee further stated that “this resulted to baseline information not being collected”.

With the USOs having been imposed on MNOs for over a decade, since 1993, ICASA (using a third party-BMI-Tech) only evaluated compliance to USOs implementation requirements in the year 2010 (ICASA: 2010d). This was despite the annual reports that were supposedly submitted to the regulator by MNOs. The year 2010 USAO compliance evaluation was done through a questionnaire to MNOs which sought to understand their implementation progress. As indicated earlier, the USOs were not fully implemented by MNOs according to the report emanating from this evaluation (ICASA, 2010d).

The above views on evaluation highlight that evaluation of USOs was not done for 16 years. Secondly, the views indicate that the imposed USOs might, indeed, have been a product of guesswork. This is because the baseline information, had it been collected, would have helped inform stakeholders on whether the USOs were required or not, the relevance and type of USOs required, and the impact of implemented USOs. With the gradual increase of ICT services in the country, evaluation would have allowed stakeholders to correctly attribute such an increase either to the USOs initiative or other market forces.

As a way of trying to understand some of the reasons for such failure, the researcher also looked at the relevance of the imposed USOs as perceived by interviewees. Below are the findings on the relevance and success of USOs.

A. Relevance and success of USOs

According to the majority of interviewees, the USOs are still regarded as relevant in some instances. All interviewees except two agreed that the concept of USOs is still relevant today, however with some qualification. MNO interviewee 4 stated that the concept of USOs "is still very relevant today" (interview: 17 February 2012). In reference to the same issue, MNO interviewee 3 stated that "for as long as there is an ICT access gap, USOs will always be relevant" (interview: 18 January 2012). Generally, these interviewees felt that the USOs are still relevant depending on their implementation approach. Government interviewee 3 stated that "there are still areas that are underserved, with no network signal, no TV signal, and where calls can't be made" (interview: 24 January 2012). "This makes USOs to be still relevant today" (government interviewee 3: 24 January 2012). On the other hand, MNO interviewee 6 felt that South Africa is "a different country than what it was 20 years ago in terms of ease of diffusion for ICT devices" (interview: 1 February 2012). There is also "organic growth" for ICT services. The interviewee further stated that "this makes USOs irrelevant today in the country".

In relation to the USOs imposed, interviewees unanimously agreed that the CSTs obligations were relevant at the time in relation to their objectives. Expert interviewee 3 stated that "this set of USOs was relevant at the time it was imposed" (interview: 11 November 2011). The interviewee further stated that the CSTs actually expanded voice service penetration to areas which had not been serviced before, and their services were very affordable at R0.90 cents per call per minute. In relation to the relevance of the USOs imposed, expert interviewee 5 stated that "this set of USOs actually came in very handy given the massive fixed line disconnections" that were done by Telkom (interview: 21 November

2011). The interviewee further stated that the CSTs obligation allowed people to continue having access to voice services even after disconnection by Telkom. However, “preference for individualised and private ICT services” by people (instead of public ICT services) has led to “the dwindling call traffic for the CSTs thus impacting on their relevance” (expert interviewee 4: 25 January 2012). Many people started to own cell phones as time progressed, said the interviewee. In relation to waning relevance for CSTs, MNO interviewee 4 stated that the introduction of “promotional price plans like MTN Zone, Yebo4Less and Woza Weekend by operators”, has actually made CSTs to be irrelevant over time (interview: 17 February 2012). These price plans offer some percentage discounts up to 100% to customers who are making on-net calls, provided they recharged at some stage within a seven day period or other specific duration, said the interviewee.

The majority of interviewees questioned the relevance of 1800 MHz and 2100 MHz obligations. This is partly due to numerous issues which impacted on their implementation, some of which have been discussed as part of implementation complexities. MNO interviewee 4 stated that “these USOs are now irrelevant except the schools’ and those targeting institutions for people with disabilities” (interview: 17 February 2012). In reference to the same issue, expert interviewee 2 stated that USOs are still relevant but in a “limited sense” (interview: 1 December 2011). The interviewee further stated that the schools’ and health institutions’ USOs are however still very relevant. This is understood in terms of the generally low levels of ICT penetration in these institutions. The 2.5 million SIM cards per MNO are now seen as” irrelevant given the current levels of cell phone penetration” (MNO interviewee 2: 5 December 2011). Government interviewee 3 stated that there are still underserved areas without any telecommunications signal, which necessitates USOs (interview: 24 January 2012).

Expert interviewee 4 stated that as much as the schools’ connectivity obligation was a commendable sign of goodwill, rural schools in particular lacked ICT backbone as well as energy infrastructure thus making the obligations irrelevant

(interview: 25 January 2012). The fluid nature of universal service and access, highlighted earlier in this study, was raised as government interviewee 6 stated that “universal service is a moving target, which made USOs to be irrelevant as time progressed” (interview: 1 November 2011). This was exacerbated by the fact that “ICASA did not seize the opportunity to revise the USOs” from one phase to another (expert interviewee 4: 25 January 2012). The interviewee further states that the USOs should have been changed from time to time. Lastly, the interviewee stated that the USOs “were never based on the demand focus” which made them irrelevant. Expert interviewee 2 (interview: 1 December 2011) stated that the uniform nature of USOs made them to be somehow irrelevant since, for instance, “the ICT requirements for a school are different to that of a health institution”.

On enquiry about the success of imposed USOs in achieving universal service and access to ICT services, the interviewees unanimously agreed that only the CSTs were successful in ensuring affordable access to voice services. The interviewees further agreed that the success of other USOs cannot be determined since they were not implemented due to complexities already discussed above. This might imply failure of these USOs. This is despite MNOs having provided just over 80000 cell phones (as part of their USOs) to the DoC in the year 2010 in preparation for the soccer World Cup (MNO interviewee 5: 19 December 2011). Some of these devices were “to be given to police as a way to ensure security during” the tournament, while other were “to be given to community based health care workers”, said the interviewee.

In relation to the relevance and success of USOs, the independent compliance report (ICASA, 2010d: 5) states that there has been minimal compliance with USAOs. With regards to CSTs, “all the three mobile operators exceeded their roll out targets” (ICASA, 2010d: 5). This is despite a lack of any verification for such compliance. The SIM card and handset (terminal equipment) obligations were never rolled out. The Internet connectivity obligation was partially complied with

(ICASA, 2010d: 5). However, health institutions and institutions for people with disabilities requirements were not complied with at all. This could be attributed to numerous reasons discussed in the implementation complexities of the document analysis section but it is not clear why no attempt was made to address teh needs of clinics. Below is the summary of the current status of USOs implementation by MNOs.

Table 9.The current status of USAOs compliance by MNOs

MNO	Internet access to schools	Internet access to FETs	CSTs	Handsets/SIM cards
Vodacom	706	None	115,713	None
MTN	486	None	Over 7500	None
Cell C	63	None	Over 52000	None

Source: ICASA (2010d: 14)

As can be seen from Table 9 above, there has been limited compliance with USAOs, particularly the internet and handsets. As indicated earlier, MNOs were required to provide 80000 handsets to the Safety and Security department, via the DoC, in preparation for the 2010 Soccer World. Furthermore, Cell C (12 November 2010) states that the "MNOs were informed that the departments of Social Development as well as Land Affairs and Rural Development were to request 40000 handsets in the year 2011". While it is not clear whether the 2011 requirement was met, the 2010 requirement to provide 80000 handsets should have changed the compliance status on this set of USAOs. This is despite the arbitrary approach taken when imposing them.

B. Competition and the USOs

There were two divergent views amongst interviewees on the impact of competition on USOs. One view stated that there was no influence of competition on USOs, while the other view stated that there was influence between the two factors during USOs roll out.

MNO interviewee 6 stated that the impact of competition on USOs “was very invisible” (interview: 19 December 2011). The interviewee further stated that, “If anything, banks and mining companies started to connect schools as a way for future consideration on government tenders”. In relation to the same issue, expert interviewee 3 stated that the schools’ obligations did not cause any competitive manoeuvring amongst MNOs (interview: 11 November 2011). Government interviewee 1 stated that “there was no impact of competition on USOs particularly in rural communities” (interview: 17 January 2012).

On the other hand, one interviewee believed there was an impact of USOs on competition and vice versa. Firstly, “the CSTs created demand and or activated the latent demand for voice services” (expert interviewee 1: 15 November 2011). This created a “market for MNO voice services, and fast tracked the penetration of mobile voice services” (government 4: 6 January 2012). In particular, a prepaid market was created by CSTs roll out (government interviewee 6: interview: 1 November 2011), since they provided the first form of prepaid telecommunications voice services in the country. In reference to the impact of USOs on competition, expert interviewee 3 stated that “USOs stimulated competition”, and MNOs had to “improve the quality of their services” (interview: 11 November 2012). Government interviewee 1 stated that “MNOs managed to increase their access points” due to CSTs in particular (interview: 17 January 2012). The competitive market led to MNOs having to create community service business units as part of their day to day operations. Furthermore, this triggered some competitive actions amongst MNOs for this market. “Such competitive action was specially induced by the special termination rates of R0.06 cents with respect to calls originating from CSTs” (MNO interviewee 2: 5 December 2011). Consequently, after Cell C’s request to be issued with USOs had been answered by the regulator, through imposing 52000 CSTs as part of its USOs, the MNO rolled out these CSTs even in areas regarded as sub-urban areas given the operator’s licence conditions which required it to roll them out in areas with less than 10% fixed line penetration (MNO interviewee 1: 8 November 2011).

Consequently, instead of paying the commercial termination rate of R1.25 cents per call per minute, Cell C was paying both Vodacom and MTN a termination rate of R0.06 cents per call per minute (MNO interviewee 2: 5 December 2011). According to MNO interviewee 2, this led to fierce competition amongst MNOs with Vodacom rolling out far more than the imposed 22000 CSTs. MTN also exceeded the imposed 7500 CSTs (interview: 5 December 2011).

The rolling out of Cell C's CSTs in urban and suburban areas led to both Vodacom and MTN lodging a compliant with ICASA against Cell C. These MNOs were the net receivers of traffic from Cell C CSTs, given that they were the only cellular networks in the market. MTN and Cell C ended up being engaged in a protracted litigation process, with MTN refusing to pay even the agreed upon normal commercial termination rate for calls originating from the Cell C network. This had a huge impact on Cell C and led to some market distortion (expert interviewee 4: 25 January 2012). As a way to remedy this situation, ICASA divided CSTs into three categories. "There is currently cell 1 category of CSTs which are located in underserved areas, and where an unlimited special termination rate of R0.06 cents per call per minute applies" (expert interviewee 5: 21 November 2011). The interviewee further stated that cell 2 category of CSTs is found in between underserved and served areas. The special termination rate of R0.06 per call per minute in this category only applies from zero to 500 minutes originating from these CSTs, after which the normal commercial termination rate applies. The cell 3 CSTs are found in urban and affluent areas with a normal commercial termination rate applicable to all calls emanating from this category of CSTs (expert interviewee 5: 21 November 2012). This categorisation of CSTs according to location was a clear case of ICASA responding to operators' complaints rather than acting on the basis of its own evaluation.

In addition to competitive action amongst MNOs spurred by the special termination rate on calls originating from CST, the e-rate obligation was also

impacted by what could be explained as competitive action by MNOs. The single and most critical directive emanating from e-rate regulations was that MNOs were supposed to give a 50% discount to internet services offered to schools. In response to this, some MNOs continue to provide this service to schools at a commercial rate (expert interviewee 5: 21 November 2011). Commenting on the same issue, expert interviewee 4 (interview: 25 January 2012) stated that some "MNOs would discount their most expensive Internet service by 50%, and offer it as an e-rate service as per the requirement". This allowed them to continue making profit out of offering such a service to schools. The interviewee further stated that "such an approach by MNOs was caused by the fact that there was no minimum or maximum price cap" the schools were supposed to pay for e-rate services, for as long as the service had been discounted by 50 percent.

In relation to the impact of competition on USOs, Reck and Wood (2003: 12) states that MNOs would first brand their CSTs using their respective bright and strong colours. After that, "they would position their CSTs as close as legally possible" to each other as competitive action to lure customers.

From the above views, it is clear that competition was one unintended outcome of the USOs initiative. Such competitive action seems to have emanated from poor definition of USOs roll out areas for Cell C. As indicated above, Cell C was allowed to roll out its CSTs to areas with 10% and less fixed line telephone penetration, even where these were in suburban areas.

C. The impact of RIA

The interviewees agreed that the usage of RIA could have been very helpful in addressing some of the problems associated with the USOs implementation process. Expert interviewee 5 stated that "problems associated with the USOs initiative stemmed from the fact that no RIA" was ever done before the initiative (interview: 21 November 2011). Government interviewee 1 indicated that the needs analysis is a requirement to identifying any critical and strategic needs of the society, and this needed to have happened for USOs (interview: 17 January

2012). “This could have been achieved through the RIA process”, further said the interviewee. However, government interviewee 3 stated that the “political transition was one key issue around the issuing of the first set of USOs”, which made it impossible to engage in “long and intensive processes” (interview: 24 January 2012). Commenting on the potential impact of RIA, MNO interviewee 3 stated that RIA would have assisted in “informing the stakeholders about the real impact” of the USOs initiative (interview: 18 January 2012). The interviewee further stated that “the consultative nature of RIA” might have ensured that stakeholders, particularly MNOs, had “knowledge of the thinking and processes” which led to the “increase of the number of SIM cards promised”, from 1.5 million to 2.5 million per operator. Still referring to the relevance and possible impact of RIA, expert interviewee 4 stated that RIA would have “helped stakeholders to understand the full costs and benefits” of the USOs initiative, for instance (interview: 25 January 2012). Talking about the potential impact of RIA, if implemented, MNO interviewee 5 indicated that “continuous appraisal of policy implementation” is a key strength of RIA which would have “ensured that the USO implementation is tracked and acted upon where needed” (interview: 19 December 2011). Referring to the same issue, MNO interviewee 6 stated that “the ex ante RIA could have resolved” all if not most of the challenges encountered. “For instance, the issue of transparency around the identification of USOs could have been addressed” (1 February 2012). Referring to the possible impact of RIA, USOs are one mechanism, amongst many, emanating from the South African universal service policy. As part of “monitoring and evaluating policy implementation”, RIA would have ensured the monitoring and evaluation of the USOs initiative (expert: interviewee 1: 15 November 2011). Commenting on the same issue, MNO interviewee 2 stated that “continuous usage of RIA as a tool would have limited the arbitrary imposition” of some of the USOs by ICASA, like the 1020 obligations that were never discussed.

The above views indicate that interviewees believed that RIA would have assisted the USOs implementation process given its methodical approach. These views seem to suggest that real issues that they encountered during the

implementation process are normally taken care of by the RIA process if implemented.

4.3 Chapter conclusion

Various issues and views came up from interviewees in relation to the USOs implementation process and RIA. In the main, interviewees had negative views and experiences about the identification of USOs, related consultation process, monitoring and evaluation. The majority of interviewees are of the view that none of the issues investigated above were handled correctly by the regulator. One or two interviewees are of the view that MNOs were not entirely honest in dealing with

various issues as they arose during the USOs implementation process. While the majority of interviewees felt that non compliance by MNOs was due to logistical, implementation and regulatory challenges which should have been sorted by the regulator before and during the implementation process, the few other interviewees are of the view that MNOs took advantage of the situation and used some genuine issues as a reason for not complying.

The next chapter provides an analysis of issues and views highlighted by interviewees during the interview process.

Chapter 5: Analysis: Any alignment with RIA?

As highlighted earlier, the main purpose of this chapter is to analyse the research results from the previous chapter, and to look at them in relation to the themes from the literature discussed and research questions. The aim of analysis is "to understand the various constitutive elements of data through an inspection of the relationship between concepts, constructs or variables, and to see whether there are any patterns or trends that can be indentified or isolated, or to establish themes in the data" (Mouton: 2001: 108). This will be achieved through analysing responses provided by interviewees during the interview process, and against the themes for this study. As indicated earlier, an exploratory data analysis approach is used. This necessitates the need to uncover new themes.

5.1 Problem identification

This sub-theme is the first step of the RIA process, whose main aim is to identify the problem before any intervention. The questions that were put to interviewees to provide their insight and views into this theme have been highlighted in the previous chapter. When trying to answer these questions, numerous and sometimes diverse answers were provided by interviewees.

Before analysing their answers, two issues are important as a foundation for analysis. Firstly, the researcher indicated that the USOs were not an end in itself, that is there is or should have been a problem that USOs were trying to address. This requires stakeholders, particularly the regulator, to have an in-depth understanding of the problem, including ability to identify it.

In identifying the problem, there are fundamental questions to be asked by stakeholders which should involve trying to understand what the problem is, groups affected by the problem and how they are affected, key concerns of the public and key stakeholder groups, the cause of the problem, events or behaviour that contribute to the problem, what motivates key players to contribute

to the problem, and many other relevant questions that will improve the regulator's understanding and ability to resolve the problem (German Agency for Technical Cooperation, 2005: 13).

When answering questions related to this theme, an overwhelming majority of interviewees provided answers whose central theme or message was that the "USOs were used as a tool to bridge the digital divide" and "achieve universal service and access to ICT in South Africa" (government interviewee 6: 1 November 2011, government interviewee 2: 12 January 2012). MNO interviewee 4 indicated that South Africa had a low ICT penetration particular in rural areas, and one way of trying to accelerate infrastructure and service deployment in these areas was to stipulate obligations to licensees (interview: 17 February 2012).

The reason or rationale provided by interviewees is in line with "the degree to which regulation benefits non-regulated individuals such as consumers", as opposed to the extent "it benefits the regulated industry" (Christensen, 1989: 226). From the above rationale it can be concluded that the actual reason for imposing USOs was to ensure "continuous availability of public goods" (Baldwin & Cave 1999, 257) in the form of ICT services. The rationale lends itself to social regulation, in terms of the literature discussed, and is also in line with the public interest theory of regulation. This makes it possible to conclude that the overriding reason for USOs was to achieve equity and social inclusion of certain social groups.

Having clearly outlined the main reason for USOs imposition in South Africa, it is important to highlight that the approach used by the regulator in identifying the problem was not in line with the RIA process. Firstly, it was not all inclusive as some key stakeholders like beneficiaries were never consulted, while the MNOs felt insufficiently consulted. This had implications for the initiative moving forward as it is to be highlighted in the analytical themes below.

While the main reason for imposing USOs has been highlighted above, it appeared to be at too high a level to implement it efficiently and effectively. “Effective in the sense of achieving the planned goal and efficient in the sense of achieving these goals at least cost, in terms of government administration costs and costs imposed on the economy in terms of complying with regulations” (Kirkpatrick et al, 2003: 2). From the way the reason was provided by interviewees, it still required some agreement or consensus amongst stakeholders, and some planning by these stakeholders so that it is implementable. As a result, most interviewees felt that the USOs identification process was not conducted properly. This finds expression in statements like “the approach to identify USOs was a lucky packet really” (expert interviewee 4: 25 January 2012) and “there was no empirical reason used for USOs” (expert interviewee 1: 15 November 2011). Government interviewee 6 confirms this through statements like “the USOs were a flawed political decision”, “there was no regulatory framework used for GSM 900 USOs”, and “there were also no definitions for universal service, universal access and the needy people which should have been used to frame the target parameters for achieving universal service” (interview: 1 November 2011). The imposition of USOs before any agreed upon definitions of concepts seen to be the cornerstone for successful roll out of USOs, suggests that the regulatory authorities “put the cart before the horse” in dealing with the identification process.

On the other hand, RIA is defined as “an information-based analytical approach to assess the probable costs, consequences, and side effects on planned policy instruments” (Parker, 2006: 2). Parker (2006: 6) further states that RIA is concerned “about the outcome and process dimensions of any regulatory intervention”. The implementation of RIA in identifying the problem would have ensured that it was identified in a structured and analytical way involving all impacted stakeholders. Firstly, the regulator would have had to decide whether to regulate given the problem or to leave the situation to market dynamics including demand for specific ICT services. MNO interviewee 3 stated that “the usage of

RIA would have assisted in informing stakeholders about the real impact of the USOs initiative". In particular, implementation of RIA would have ensured that the costs and benefits of choosing the imposed USOs were also understood, and possibly supported by all stakeholders. This would have ensured that the imposed USOs were justified and hence supported by all stakeholders.

5.2 Lack of proper definition of USOs

As highlighted in the literature review chapter, problem identification also involves generating options for resolving the identified problem. Amongst the various available options identified by Xavier (1995: 79), the universal service fund and universal service obligations are chosen by regulatory authorities to address the identified the problem. These two mechanisms are not without their challenges.

The imposition of the USOs had its own challenges. These challenges could be linked to a number of issues already highlighted in this research. One main challenge identified above relates to the lack of "definitions for universal service, universal access and the needy people which should have been used to frame the target parameters for achieving universal service" (government interviewee: 1 November 2011). Furthermore, the interviewees highlighted that the identified USOs were too loosely specified to allow proper implementation. This was expressed by expert interviewee 4 when she highlighted that MNOs were required "to provide connectivity" which was understood or could be interpreted to mean "network coverage" or "cloud in the sky" (interview: 25 January 2012). Government interviewee 5 stated that "the obligation was not clear whether it required MNOs to provide a link" to the school or "even end user equipment" (interview: 25 October 2011). The interviewee further stated that "bandwidth or through put speed" for technologies to be used for this obligation was also not specified (interview: 25 October 2011).

As indicated earlier, the importance of “clearly specifying USOs in terms of their nature, extent and standard of services required” cannot be over emphasised (Xavier, 1995: 20). Xavier further states that “ambiguity in defining USOs (and sometimes lack of any specification) allows the telecommunications operator to define the specific requirements of the universal service objective, set targets for meeting these objectives, and decide on how and how quickly these targets are to be achieved”. Loose or ambiguous specification of universal service obligations also “permits considerable room for their alteration and reinterpretation even by government, making it difficult to assess whether their delivery was in line with government’s objectives and policies” (Xavier, 1995: 20). It also makes it “easier for operators to abandon or curtail them”, and lastly makes “universal service programme vulnerable to overt and covert political pressures rather than being based on a clear strategy and plan” (Xavier, 1995: 20).

From the interviews conducted, most undesirable and unanticipated actions by stakeholders emanated due to poor specification of USOs. This affected the smooth and continuous rolling out of the initiative in line with its purpose. The MNOs found ways to creatively comply with the USOs regulations, and further used the situation to ultimately call for the abandonment of the current USOs (Vodacom, MTN and Cell C: 12 November 2010). Such actions find expression from a statement like the “MNOs would discount their most expensive internet service by 50%, and offer it as an e-rate service to schools as per the requirement” (expert interviewee 4: 25 January 2012). This refers to a situation where the 50% discount, through relevant regulations, was specified as a key compliance indicator for an e-rate service. Such a situation “network locked” schools to services of these MNOs by specifying which MNO was to service which school. In other words, it limited their choice of service from MNOs. This further allowed the MNOs to creatively comply with the requirement to offer a 50% discount to schools, while generating healthy revenue. This situation was caused by the reality that “no minimum or maximum price cap” was stipulated for MNOs to charge e-rate institutions (expert interviewee 4: 25 January 2012). On

the other hand, government re-interpreted the USOs to fulfil other objectives that were never intended in the first place. Statements like “the MNOs complied by giving the DoC 80000 (26600 per MNO) terminal equipment (smart phones) as per the Minister’s directive”, confirms this situation (MNO interviewee 5: 19 December 2011). This referred to MNOs being urgently told to roll out their outstanding terminal equipment USOs in preparation for the 2010 Soccer World Cup instead of rolling them out in public schools and institutions for people with disabilities, as initially envisaged. The inability by DoC to fully account for these handsets is a cause for concern, and their “disappearance” could easily be interpreted as part of some corrupt activities.

RIA as a tool “can be used to evaluate the real costs and consequences of policy instruments after they have been implemented” (Parker, 2006: 2). The problem identification process step of RIA combined with its process and outcome dimension would have been able to provide insight on the “consequences” of not clearly specifying the “USOs as policy instruments”.

5.3 Legitimacy of USOs

The legitimacy of USOs stems from the fact that they are imposed through a regulatory process, sanctioned either by ICASA or government. However, numerous occurrences, as highlighted by interviewees, have sought to undermine such legitimacy.

According to some interviewees, consultation with MNOs and other impacted stakeholders did not happen before and during the imposition of USOs, while others are of the view that it was done but not properly. In particular, the CST obligation provides an example where regulatory authorities took arbitrary action of imposing them on MNOs without consulting with all impacted stakeholders. In expressing his view on this set of USOs, government interviewee 5 stated that they were “a political instruction”. The imposition of SIM card obligations, amongst other phase 3 USOs, further made the USOs initiative to be seen as “illegitimate”. MNO interviewee 3 stated that the MNOs had promised “to offer 1.5

million SIM cards per operator" during the negotiation process, when "about 1 million more SIMs per MNO somehow crept into their licences" (MNO interviewee 3: 18 January 2012). This approach was clearly not transparent, to say the least. Consequently, ICASA's approach to issue licences with embedded USOs was coined as a "tit for tat" approach (licences were issued with obligations already attached) by expert interviewee 5 (21 November 2011). More interviewees expressed unhappiness with this approach since, more often than not, it left MNOs "not having an opportunity to reject or accept the USOs" given that they required the licences (interview: 21 November 2011). This further made stakeholders, particularly MNO interviewee 6 to feel like "consultation was done for the sake of it", to a limited extent, and thus not sufficient (interview: 1 February 2012). Given that "the views of MNOs were never taken into cognisance" when the 1800MHz and 3G USOs were crafted, expert interviewee 4 felt that these USOs were arbitrarily imposed (interview: 25 January 2012).

The lack of a RIA aligned consultation process step seems to have negatively impacted on the legitimacy of the USOs. The RIA aligned consultation process step is a "two-way exchange of ideas and information in which stakeholders are given an opportunity to provide input and affect the outcome of the regulatory process" (Treasury Board of Canada, 2007: 2). The consultation process step within the RIA process engages stakeholders in a dialogue in order to pre-empt implementation problems and cultivate policy legitimacy, thus resulting in viable and successful programmes (McConnell, 2010: 348). The RIA process aligned consultation process recognises the multiplicity of stakeholders, with their different levels of interests, points of view, and expectations concerning the nature and content of a proposed regulatory regime. Furthermore, the consultation process step within the RIA process is ongoing and constructive between the regulator and stakeholders (Treasury Board of Canada, 2007: 2).

Consultation, as part of the RIA process, serves to bring about legitimacy in regulation. The start of consultation within the RIA process is preceded by answers to the following questions: What do we want to talk about? Who do we want to talk with? When should we talk? How should we communicate? (Milligan 2003: 5). The consultation process step within the RIA process provides an alternative in trying to understand and resolve the regulatory problem at hand. Lastly, the consultation process step within the RIA process brings diverse logics, criteria and quality assurance mechanisms into the RIA process (Radaelli, 2005: 14). All this would have assisted in ensuring that the USOs are not being seen by MNOs in particular as “illegitimate”.

5.4 Planning for USOs

The lack of proper planning with respect to USOs roll out is one key issue that frequently came up from various sources during the research process. This provides some explanation on the kind of progress experienced by the initiative thus far. As indicated earlier, government interviewee 5 was of the view that the USOs “were a reaction to marginalisation of particular racial groups”, which was implemented close to political changes in the country (interview: 25 October 2011). This makes the USOs to appear as an “outcome of some political economy process” (Xavier, 1995: 33) between the pre 1994 government as the then government in waiting. The independent compliance report (ICASA, 2010d: 5) confirmed the reactive nature of USOs by stating that, they came about in “a reactionary way as South Africa evolved from a monopolistic environment to a more liberalised environment where more competition came into the market”. The above views on USOs are communicating a message that they were a reaction to some situation. This has connotations of a lack of proper planning.

The regulator and MNOs agreed upfront, that the USOs implementation process was to be based on the implementation plans drafted by MNOs but approved by the regulator itself. However, the very first challenge for MNOs was that the

regulator did not approve the implementation plans, which was interpreted by the expert interviewee 4 to mean “the regulator was either unhappy with the plans or they were not in line with its intentions” (interview: 25 January 2012). The lack of approval of these plans poses some questions around how the USOs were then to be implemented given the dependency on such approval. Secondly, it provides some explanation behind the delays and challenges in the implementation of USOs in general. Lastly, what seems to be an “abandonment” of the imposed USOs by MNOs can partly be explained in terms of visible disorganisation within the regulator on this initiative. Inability to mete out sanctions for non compliance by MNOs can also partly be explained in terms of such disorganisation of the regulator.

The issuing of the schools’ USOs in the absence of requisite and enabling infrastructure is another indicator of a lack of planning. For instance, while the absence of road infrastructure impeded MNOs from reaching some of the identified schools, once there, the absence of electricity or any source of power impeded the roll out of the Internet connectivity “since ICT needs some form of energy to function” (expert interviewee 4: interview: 25 January 2012).

From the above discussion, it can be concluded that the planning process for USOs implementation was never aligned to the RIA process. Planning is one key activity of each process step within the RIA process. Once a problem has been identified during the problem identification process step withIN the RIA process, the regulator would have planned the next activities to be done following the identification problem. Such planning would have included the finalisation and approval of the USOs implementation plans to allow MNOs to officially start rolling out the USOs. The RIA aligned planning process would have planned for the consultation process to be held in respect of USOs, including the involvement of beneficiaries. Furthermore, a RIA aligned planning process would have ensured that monitoring activities are planned for before the USOs were rolled out. This would have ensured the availability of various resources required to monitor the USOs implementation. Lastly, a RIA process aligned planning would also have ensured that there were proper evaluation plans to determine when (the intervals)

and what kind of evaluation was to take place. This would have allowed stakeholders to continue, amend or terminate the USOs initiative on the basis of the information emanating from an evaluation process. For future USOs to be implemented successfully, planning for both monitoring and evaluation activities should happen before the project is implemented (Kusek & Rist, 2004: 53). This should include planning for other RIA process steps.

5.5 Monitoring

This sub-theme is a process step of the RIA process, whose main aim is to identify the type of monitoring activities and approach that needs to take place within a RIA process.

A number of interviewees indicated that no monitoring was ever done in respect of USOS. However, ICASA did collect some data on the implementation of USOs. In support of this statement, the compliance report (ICASA, 2010d: 4) states that "the licensees were required to submit reports to ICASA on services provided by them including on progress in achieving the USAOs". MNO interviewee 6 confirmed the requirement for MNOs to submit USOs implementation progress reports to ICASA (interview: 1 February 2012). However, ICASA never took any corrective measures on the issues raised by MNOs in those reports. In other words, there was no process of "analyzing information about the implementation of a program for the purpose of identifying problems such as non-compliance and taking corrective action" (Gyorkos, 2003:275). The continued unavailability of any approved USOs implementation plans, for MNOs to roll them out, serves as a testimony to this.

The continuous requirement to supply SIM cards in a market with more than 100% SIM cards penetration tells a story. This supply driven approach to USOs might mean that the regulator is not aware of people's demands in relation to ICT services. The requirement for the supply of SIM cards despite the current level of penetration promotes some inefficiencies in the economy, in particular both production and allocative inefficiencies.

It is clear that the monitoring approach used by the regulator is not in line with the monitoring process step of the RIA process. Monitoring within the RIA process is "ongoing, systematic and assesses progress towards the achievement of objectives, outcomes and impact" of the intervention (Roseborough, 2009:7). Monitoring within the RIA process also focuses on establishing indicators which are clear (precise and unambiguous), relevant (appropriate to the subject at hand), economic (available at a reasonable costs), adequate (provide sufficient basis to assess performance), and monitorable (amenable to independent validation). (Kusek & Rist, 2004: 68).

5.6 Evaluation

This sub-theme is a process step of the RIA process, whose main aim is to identify the evaluation activities and approach for any intervention, including USOs, when using a RIA process.

As indicated earlier, evaluation is a process that attempts to determine as systematically and objectively as possible the relevance, effectiveness, and impact of activities in the light of their objectives (Gyorkos, 2003:275). When performed just before the implementation of a development intervention, it is referred to as ex ante evaluation and it produces both qualitative and quantitative data and information (baseline information) which informs implementers of their current position in relation to a given initiative or policy (Kusek & Rist, 2004: 33).

Evaluation of USOs implementation progress was not done for 16 years, according to all interviewees. MNO interviewee 4 stated that the "baseline information was never collected thus creating an impression that there was nothing at all in the beginning". This implies that the regulator and stakeholders alike did not understand the then current situation of ICT access in relation to the desired situation. This meant that no stakeholder, in particular the regulator, could confirm or negate the existence of any progress during the implementation

process. Furthermore, any attempt by the regulator to measure progress can be regarded as guess work, given that it (the regulator) is not aware of the actual situation before the intervention. MNOs can rightfully claim to be directly and indirectly responsible for any increase in ICT penetration.

Government interviewee 6 stated that “universal service is a moving target, which made USOs to be irrelevant as time progressed” (1 November 2011). Lack of evaluation of USOs relevance meant that the regulator continued to impose irrelevant and ineffective USOs, which would not have happened had RIA been implemented. As indicated above, the evaluation process step within the RIA process also ensures that the relevance, effectiveness and impact of activities, and hence SOs implementation, are determined. This helps stakeholders in deciding whether to continue, amend and discontinue the intervention activities (USOs implementation).

Expert interviewee 2 stated that the year 2010 USAO implementation compliance review was the first of its kind by the regulator (interview: 1 December 2011). As a mechanism to collect relevant data to inform the compliance review process, the ICASA approved questionnaires were sent to the licensees who were requested to respond to them accordingly. In responding to the questionnaire, “some operators provided detailed responses whilst others provided short answers, not backed by any supporting documentation” (ICASA: 2010d: 4). In some instances, “operators indicated that the information that was being requested from them had already been submitted to ICASA before”. This casts doubt over the quality and relevance of data used to generate information which was ultimately in the public sphere as a USAO compliance review discussion document.

When performed after the development intervention has been completed, evaluation process identifies factors of success or failure, assesses sustainability of the results and impacts, and draws conclusions that may inform other future interventions (Kusek & Rist, 2004: 225). The provision of short answers not

backed by any supporting documents raises questions on the correctness of information provided by MNOs. Furthermore, the situation makes it extremely difficult for any stakeholder to give a precise account of the current status of USOs implementation, and the impact of implemented USOs in achieving the current levels of ICT access. Lastly, the lessons that emerge from the 2010 compliance review process may not provide relevant and correct information for future USOs initiatives, even the challenges may remain the same. This is attributed to the poor depth and quality of the evaluation of USOs thus far.

5.7 Cost-benefit analysis of USOs.

As indicated earlier, there are costs and benefits associated with USOs implementation. These costs can either be financial or non financial. The costs of implementing USOs were never considered from a regulatory point of view. While these costs were mainly financial, other key costs were crucial and related to the time it would take MNOs to identify and implement USOs in the absence of lists for schools, for instance. The regulatory authorities did not seem to have taken into account the lack of trust, as a cost of not consulting with all impacted stakeholders or taking into accounting the views of those stakeholders that had an opportunity to interact with the regulator during the imposition of USOs.

MNO interviewee 2 stated that the pay and play mechanisms to promote USOs was one of the big costs associated with the USOs initiative (interview: 17 February 2012). At a particular level, this might provide a rationale behind non compliance by MNOs in rolling out USOs using “legitimate” logistical and other reasons for doing so.

The benefits of USOs seem to have accrued mainly for MNOs. The new market created by the CSTs, expansion of their distribution channels, popularising of MNO services and amount of revenue they generated are all an indication that they were the main beneficiaries of USOs. Such a situation is glaring when comparing the negligible improvement to ICT access by communities directly due

to USOs. The 2009 schools infrastructure report (Department of Basic Education, 2009) discussed earlier in this study further shows the continued existence of the digital divide despite the schools having been targeted beneficiaries of USOs.

5.8 Competition and the USOs

As highlighted earlier, competitive activity amongst MNOs impacted on the USOs initiative. The legal battle between Cell C and MTN is a case in point. The discounting of most the expensive tariff plans by 50% and offering them as USOs for schools further confirms the impact of competition on the USOs initiative. Expert interviewee 4 highlighted the importance of ensuring competitive neutrality of any USO programme (interview: 15 November 2011). Competitive action amongst MNOs during the USOs implementation process points to a number of issues can be attributed to a lack of monitoring and evaluation by the regulator.

5.9 Chapter conclusion

There are numerous themes which came up during the analysis of interview data. While some of these themes have been used as part of the literature review as well as for interview purposes, there are also new themes which emerged. The following themes were discussed: the problem identification, lack of proper definition of USOs, legitimacy of USOs, planning for USOs, monitoring and evaluation. There is a clear misalignment between what occurred in and around each of these themes during the USOs roll out, and their existence within the RIA process. What happened was not aligned to the RIA process, and had RIA been implemented, more challenges and issues experienced during the USOs roll out could have been avoided resolved or resolved.

The next chapter will reflect on key issues uncovered by the study as they relate to the main research question. The chapter will further comment on the aspects of RIA which were followed by ICASA in respect of USOs for MNOs. Lastly, areas of improvement with regards to the implementation of USOs for MNOs will be the main focus.

Chapter 6: Conclusion: the need for “big picture” approach

This chapter reflects on key issues uncovered by the study as they relate to themes of RIA process. The chapter makes a judgement on how these issues were dealt with, and further highlight areas of improvement with regards to the regulatory implementation of USOs for MNOs. All this is central to the main research question. Some of the issues to be discussed below are seen, by the research, as key for possible future research in the sphere of this research.

Particularly based on the analysis from the previous chapter, it is clear that very few if any aspect of the RIA process were ever implemented in respect of USOs for MNOs. For instance, the focus on output delivery (USOs roll out) which is an element of the output based approach to monitoring and evaluation is the one aspect adopted by ICASA in respect of USOs. This element is depicted in Table 7 of the study. However, it is clear that there was huge misalignment between stakeholders’ expectation in a far as the modalities and processes for the delivery of the output.

In as far as consultation for USOs is concerned, again it is clear that at best, the consultation process was weak. USOs were merely imposed on MNOs either as part of a political process or as part of the spectrum licensing process, which left no “room” for open consultation with MNOs. As for beneficiaries, they were not consulted at all during the various phases of USOs roll out. Weaknesses in the consultation process means that the process was not a two-way exchange of ideas and information between stakeholders. On the basis of the above two issues, as well as other pertinent issues raised by interviewees, it is clear that the approach to the implementation of USOs was uncoordinated, weak and flawed.

Given the country’s ambitious targets to have both broadband services and digital broadcast media services being accessible to all South Africans, it is clear that universality initiatives and programmes are still to continue in future. In order

to ensure an improved implementation for such programmes, in particular the USOs, the following needs to be taken into cognisance.

6.1 Shared vision for USOs

As things stand currently, South Africa does not have a well thought out and shared vision on universal service, supported by a researched implementation strategy. Amongst many issues, such a strategy should clearly spell out the circumstances under which universality interventions are to be implemented, and the extent of such interventions. In the main, there are high level statements often attributed to government and recited by the ICT industry of wanting to ensure access to ICTs for all South Africans. Unfortunately, these high level statements are yet to be converted to agreed upon plans, quantified, implemented and then monitored. It is important to highlight that such a vision will have to be led by government. However, operators as potential implementers of this vision as well as communities as beneficiaries of USOs roll out will have to be continuously engaged in order to understand their views, experiences and interests in relation to USOs.

6.2 Roles for various stakeholders

Universality initiatives generally involve many stakeholders often with diverse interests. This calls for close coordination, transparency and constant communication among these stakeholders. More importantly, the stakeholders have to work together as project teams from the setting of objectives until their realization. As things stand now, government's role has been to 'throw' USOs at operators and quickly focus on other priorities. The issue of universality would be attended to only when a prospective licensee has to enter the market or spectrum has to be allocated, while operators are struggling to secure "rights of way", amongst other issues.

On the other hand, operators have used every reason in the book to avoid rolling out USOs. In some instances, they promise to deliver and renege on doing so. This poses many questions around the seriousness with which operators take their corporate social responsibilities. Lastly, communities are left alone as uninformed spectators during the roll out process.

If stakeholders regard ICT as an important backbone infrastructure for socioeconomic development, and a catalyst for other sectors, it is important for all stakeholders to continuously play their respective roles in promoting universal service and access to ICT.

6.3 Access gap analysis

As alluded to during the research, it is important for regulatory authorities to promote competitive market conditions before any universality intervention can be implemented. The will allow for competitive activities between operators which should hopefully push down prices, encourage innovations and increase universal service and access to ICT services. This will allow for the identification between market efficiency gap and true access gap (Dymond & Oestmann, 2003) before any universality intervention is implemented. Interventions will then be targeted to the neediest people instead of implementing blanket universality programmes. The market concentration is currently very high in the South African telecommunications industry. Analysis of the access gap will assist in ensuring that correct areas and individuals are identified for support in accessing ICTs. Furthermore, this will ensure that stakeholders appreciate the magnitude of the challenge that requires their attention. This may make stakeholders understand and appreciate the rationale behind the resources required of them to support USOs roll out.

6.4 Balance between market and non market mechanisms

As indicated earlier, South Africa's USO programmes can be explained better in terms of social regulation than economic regulation theory. This is because USOs are rolled out to ensure continuous availability of ICT services as a social good. The social regulation approach to USOs roll out further promotes a supply driven approach to CST roll out. The supply of ICT goods and services to communities or consumers not in need of such goods creates some allocative inefficiency. However, it is important to mention that there never was a known demand for CST services before they were imposed as USOs by government. In fact as indicated earlier, the CSTs created a new market for MNOs.

On the other hand, the operators prefer market based mechanisms to USOs roll out. Consequently, they clearly want regulatory authorities to consider economic factors to determine where and when USOs are rolled out. MNOs frequently contend that there has to be a certain level of demand for a service before it is made universally available. This, according to operators, will ensure that ICT services are provided to those people who need and hence demand it. This will ensure allocative efficiency of ICT services. While this seems like a plausible suggestion or point of view, it does not seem to consider that USOs are an intervention due to various reasons, including lack of affordability by some communities. Consequently, demand is not likely to increase if affordability is a hindrance to accessing ICT services.

The above explained situation calls for close coordination and negotiations amongst the impacted stakeholders to gauge the kind of compromises each stakeholder can make in order to achieve the goal of universal service.

6.5 Funding for universality initiatives

As highlighted in the previous chapters, the implementation of universality initiatives has a social rather than economic outlook to it. However, these

initiatives carry costs for stakeholders, particularly operators. It is therefore important for regulatory authorities to ensure that the initiatives do not end up creating an impossible burden to profit margin conscious organizations. In the case of USOs, MNOs are required to contribute (pay) 0.2% of the revenue towards the USAF but also have licence obligations to roll out (play). Such an approach has often made operators feel that this was a rent seeking strategy by government through regulatory authorities.

The costing of ICT service has generally been a complicated challenge for regulators. This is despite the existence of various costing strategies like rate of return, long run incremental costs and others. The costing of universality initiatives seems to be one of the challenges for regulatory authorities. Ability to accurately cost universality initiatives will ensure that contributions by operators on universality funds, amongst other things, are in line with the required financial resources.

6.6 Regulatory governance

The requirement to roll out universality initiatives normally impacts on government, the regulator, operators and communities, as stakeholders. Generally, government would have a responsibility to set policies to ensure delivery of universality initiatives. On the other hand, the regulator would set up and or manage systems such as universality funds or regulations to ensure the efficient delivery of the initiative. In some jurisdictions like South Africa, universality funds would be managed by separate agencies (USAASA) or be managed as part of the fiscus. Operators contribute towards universality funds and or roll out the universality initiatives. Communities are the beneficiaries of these initiatives, and they need to utilize their services both for personal and socioeconomic development.

However, in the case of USOs in South Africa, government has often encroached on responsibilities seen as that of the regulator. The supply of 80000 handsets by MNOs at the request of government is one example. This dis-empowers the regulator, making it unable to take decisive action in respect of USOs

implementation. It is then important to ensure that all stakeholders play specific roles within the roll out process, and decisions are taken by designated people following pre-determined processes to ensure certainty.

The main research question has been answered in the sense that the research shows RIA as a relevant tool to use when implementing any regulatory policy instrument. RIA is concerned about the impact of implementing such instrument, the costs and benefits of the chosen instrument as well as the process and outcome dimensions of implementing any policy instrument. On the basis of this, and the analysis of the data obtained from stakeholders, it can then be concluded that ICASA would have benefited had it used RIA in respect of USOs. While this broad view is largely what was expected, responses to the process and outcome dimensions of RIA were unexpected, which seem to have been a key single point of failure to USOs implementation. Another key issue that was not expected is that monitoring and evaluation alone is not sufficient, within the context of regulatory intervention, but should form part of a bigger process which is RIA. This is because RIA provides an insight to the whole impact of regulation including the implications for monitoring and evaluation as process steps with the RIA process.

Supporting questions related to the problem identification in respect of USOs have also been answered. This was done when “the achievement of universal service” was put at the centre of an explanation providing the rationale for USOs. Furthermore, in terms of RIA, regulatory authorities could have used various options to try and bridge the digital divide but chose USOs. The consultation, monitoring and evaluation sub questions have been answered through noting that they are part of the RIA process. In fact, the consultation process step seeks to allow stakeholders an opportunity to air their views so as to eliminate any possible problems while legitimising the intervention. As seen in chapter 4 of this research, consultation for the USOs initiative was not done properly, and stakeholders’ views were never taken into consideration. The monitoring process

step related sub questions have been answered in terms of highlighting that while the step is part of the RIA process, its main aim is to collect information related to the intervention with the idea of identifying problem areas and taking corrective action when necessary. Availability of such information was one of the key shortcomings in rolling out the USOs initiative in South Africa, and no effective monitoring took place during the rolling out of the USOs initiative. The evaluation sub questions have been answered in terms of highlighting that the evaluation process step need to precede any intervention so that stakeholders understand the current scenarios before the intervention. Evaluation is also conducted at specific intervals of the intervention as well as at the end with the idea of getting lessons to improve on future and similar interventions. Lastly, if done properly, evaluation makes it possible for implementers of an intervention to measure progress towards the achievement of objectives, and maintain, amend or abandon the initiative accordingly depending on the gap between the objectives and outcome of an intervention.

The main limitation of this study has been a lack of detailed understanding of RIA by interviewees. This prompted the researcher to ask the RIA specific questions towards the end of each interview. This partly assisted the interview process since interviewees gained familiarity with the RIA process as interviews progressed. The second limitation relates to the unavailability of academic research with respect to some areas of the topic. The steps within the RIA process, as discussed in the literature review section, are subject areas in their own right. In particular monitoring and evaluation has become very topical in recent years. Given that monitoring and evaluation are a forte for international donor agencies like the World Bank, International Monetary Fund, United Nations agencies, and others, there is a general lack of local academic research on these subject areas.

Another limitation of the study is the close involvement and interest of interviewees on universal service and access issues within the country, including

USOs, as the interviewees may however have their own subjective views about the USOs implementation process.

6.7 Chapter summary

There are numerous issues highlighted in this chapter. First and foremost, it is important for stakeholders to share the vision on universal service and access issues. This is because, if implemented properly, universality programmes stand to benefit all stakeholders and the economy. Once there is a shared vision amongst stakeholders, it is important for various access gap studies or market research mechanisms to be undertaken so as to be able to define and quantify the extent of the problem. Once the problem is identified, proper plans reflecting the interests and views of all stakeholders would need to be developed, approved and jointly owned by stakeholders. Before and during the implementation of any universality intervention, it is also important for roles and responsibilities for each stakeholder to be identified, and be executed such that there is minimum overlap or conflict amongst stakeholders when executing their respective roles. The funding and mobilisation of other key resources is also important for rolling out of any universality initiative.

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Appendix A: Interview protocol

Name of the interviewee:

Job title:

Organisation:

Industry:

Date:

Time:

Problem identification

1. Why were USOs imposed?

2. How were the imposed USOs identified?

3. How do you think the USOs should be identified in future?

4. What other alternatives can be used instead of USOs in future?

5. What were the costs to stakeholders *(not only financial costs)* of implementing the USOs? *(incurred and future costs)*

6. What were the benefits to stakeholders *(not only financial benefits)* of implementing the USOs? *(realized and future benefits)*

Consultation

1. How were the interests and views of all impacted stakeholders solicited for the USOs initiative?

2. What issues of interest to your organisation would need to be considered for future USOs?

Evaluation

1. Were the imposed USOs relevant in relation to their purpose? Please elaborate.

2. Are the USOs still relevant today? Please elaborate.

3. What was the impact of USOs, if any, on market dynamics*? (competition, demand, supply, etc)*

4. Did the USOs initiative achieve its purpose? Please elaborate?

5. How often should progress on USO implementation be evaluated in future?

Monitoring

1. How was baseline information established to assist in measuring USOs implementation progress?

2. How should such information be established for future USO initiative?

3. What issues were raised in the USOs implementation progress reports submitted to ICASA by MNOs? *Copy*

4. What regulatory action emanated from ICASA due to such reports?

5. How did the MNOs respond to such regulatory action?

6. Why did the MNOs fail to implement some of the imposed USOs *(Internet in IPWD, 5000 schools, e-rate, 1020, etc)?*

7. What made it possible for the MNOs to implement the CSTs obligation to the extent they did?

8. Who else can you refer me to for an interview on this subject? Why?

Appendix B: List of interviewees

Interviewee	Organisation	Brief profile of an interviewee
Mr. Mortimer Hope	Vodacom	Mr. Hope an Executive Head of Department for technical regulation in the operator. He participated during the pilot phase of the study when the questionnaire was tested.
MNO interviewee 1	MNO1	The interviewee is working for the largest operator in the country. He has worked in the industry for over 10 years including working for ICASA. He worked on universal service from an economic point of view.
MNO interviewee 2	MNO1	The interviewee is working for the largest operator in the country. He has worked in the industry for over 10 years including working for ICASA. Universal service and access is currently his responsibility in terms of work.
MNO interviewee 3	MNO2	The interviewee is working for one of the largest operators in Africa. He has worked in the industry for over 10 years. He is one of the few people remaining who provided insight on the history of universal service and access.
MNO interviewee 4	MNO2	The interviewee is working for one of the largest operators in Africa. He has worked in the industry for over 5years.
MNO interviewee 5	MNO3	The interviewee is working for one of the mobile network operator in the country. He is one of the founding members of SATRA. He also served as the advisor to one of the Ministers in the industry. He has worked in the industry for over 10 years.
MNO interviewee 6	MNO3	The interviewee is working for one of the network operators in the country. He also has some vast experience in the ICT industry.
Government interviewee 1	Government	The interviewee is working for a government department. He has vast knowledge about RIA as a process.
Government interviewee 2	Government	The interviewee is working for a government department. She has vast knowledge and experience on universal service and the schools connectivity project.
Government interviewee 3	Governmental body	The interviewee is working for a governmental body. She has vast knowledge and experience on universal service and access in the country. She has worked for the Department of Communications before. She has been in the industry for over 15 years.
Government interviewee 4	Government body	The interviewee is working for governmental body. He has been working with universal service and access initiative for some time.
Government interviewee 5	Governmental body	The interviewee is working for governmental body. He has been working with universal service and access initiative for some time. The body that he is working for has a legal mandate on universal service and access in the country.
Government interviewee 6	Governmental body	The interviewee is working for governmental body. He has been working with universal service and access initiative for some time. The body that he is working for has a legal mandate on universal service and access in the country. He has worked for the policy maker and regulator before.

Expert interviewee 1	Expert	The interviewee has been working in the industry for over 10 years. She is very experienced and knowledgeable about universal service and access. She has worked for the regulator, an MNO and is currently actively working in the industry. She can also be regarded as professional and an academic in her own right on universal service and access issues. She is currently working in the industry.
Expert interviewee 2	Expert	The interviewee has been working in the industry for over 6 years. He is very knowledgeable about the unfolding of universal service obligations process in the country. He worked for the regulator before but is currently working in the broadcasting space.
Expert interviewee 3	Expert	The interviewee has been working in the industry for over 10 years. She is knowledgeable about the unfolding of universal service obligations process in the country. She worked for an MNO and is still serving in the sector.
Expert interviewee 4	Expert	The interviewee has been working in the industry for over 10 years. She is very knowledgeable about universal service and access concepts in general, and the unfolding of universal service obligations process in the country. She has worked for an organisation with the legal mandate to deliver on universal service and access, an MNO and is currently still serving in the sector.
Expert interviewee 5	Expert	The interviewee is highly experienced on universal service and access. He started working on these issues while still with the regulator, and he is still currently serving in the sector.