Government Gazette
Staatskoerant

REPUBLIC OF SOUTH AFRICA
REPUBLIEK VAN SUID AFRIKA

Vol. 616 3 October Oktober 2016 No. 40325

PART 1 OF 2

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ISSN 1682-5843

9 771682 584003 40325

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GOVERNMENT NOTICES • GOEWERMENTSKENNISGEWINGS

DEPARTMENT OF TELECOMMUNICATIONS AND POSTAL SERVICES

NO. 1212 **03 OCTOBER 2016**

NATIONAL INTEGRATED ICT POLICY WHITE PAPER

I, Dr Siyabonga Cyprian Cwele, Minister of Telecommunications and Postal Services, hereby publish in accordance with section 85 of the Constitution read with section 3 of the Electronic Communications Act, 2005 (Act No.36 of 2005), the National Integrated ICT Policy White Paper that was approved by Cabinet on 28 September 2016.

Dr Siyabonga Cyprian Cwele, MP
Minister of Telecommunications and Postal Services

National Integrated ICT Policy White Paper

28 SEPTEMBER 2016

telecommunications & postal services

Department:
Telecommunications and Postal Services
REPUBLIC OF SOUTH AFRICA

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1. Introduction

"By 2030, ICT will underpin the development of a dynamic and connected information society and a vibrant knowledge economy that is more inclusive and prosperous."

The National Development Plan: 2030[1]

The South African National Development Plan ("the NDP) outlines Government's commitment to building a more inclusive society in order to eliminate poverty and reduce inequality in the country by 2030. It sets out specific steps and targets to achieve an "*inclusive and prosperous society*" where "*opportunity is determined not by birth but by ability, education and hard work*".

Information and Communication Technologies (ICTs) can play a key role in facilitating all the objectives of the NDP and this White Paper sets out ***how*** Government will realise this potential. It is premised on furthering the Constitutional objective of improving "*the quality of life of all citizens"* and freeing *"the potential of each person*".[2]

Equality and the right of everyone to "*full enjoyment*" [3] of all opportunities in South Africa underpin all rights and freedoms enshrined in the Constitution. This founding law further compels Government to proactively intervene to address any inequality. In line with this constitutional injunction, this White Paper introduces a range of interventions to ensure that **everyone in South Africa, regardless of who they are, where they live or their socio-economic status can improve the quality of their lives through accessing the benefits of participating in the digital society**.

1.1 ICTs and convergence

Government views information and communication technologies as a means to facilitate inclusive socio-economic transformation of South Africa. The term ICT in the context of the policies in this White Paper includes a broad range of technologies such as computing and information technology, telecommunications technology (including fixed and wireless telephony and data communications), audio and audio-visual content (including broadcasting), the Internet (including the services carried over this platform) and more traditional means for communication such as postal deliveries.

Convergence has meant that these technologies do not operate in isolation from each other. They are increasingly accessed using the same devices. A mobile phone, for example, can be used to access the Internet, read email, make calls and listen to music or the radio. Calls can be made over the mobile network or via over-the-top Internet based services (e.g. video-on-demand, Skype and WhatsApp). Correspondence can be sent via the post or email and documents can be signed physically or electronically.

This convergence also affects the industries themselves and the business models they adopt. Increasingly around the world operators are bundling different services together (e.g. Internet

[1] The National Planning Commission, National Development Plan: 2030, page 190
[2] The Constitution of the Republic of South Africa, 1996, Preamble, http://www.justice.gov.za/legislation/constitution/
[3] The Constitution of the Republic of South Africa, 1996, Section 9, http://www.justice.gov.za/legislation/constitution/chp02.html

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service provision, telephony and content delivery). Access to premium content is not only becoming crucial for broadcasters but also to telecommunications operators.

Convergence is therefore at the heart of this White Paper. It recognises that the disruptions in the traditional sectors require policy approaches to be adapted to ensure that Government's vision is realised. It has therefore adopted a holistic approach, dealing, for example, with both supply and demand-side issues to facilitate universal access to ICTs, as well as postal sector transformation and industry growth. It also recognises that the policies need to take into account the needs of sectors such as education, justice, health and welfare so that digital technologies can support their development goals, while recognising that convergence raises new threats to rights such as those of privacy and security.

Government, however, recognises that the cultural and freedom of expression objectives which have underpinned the policy and regulatory framework for broadcasting continue to require a specific policy focus. South African content promotion and facilitating access by audiences to a diverse range of television and radio programming will, for example, remain essential objectives of broadcasting policy – and could become increasingly important as audiences access content from elsewhere in the world via the Internet.

A separate policy process is therefore being undertaken by the Ministry of Communications to review those existing policies that remain very specific to the broadcasting sector. One of the key considerations in this paper will be how to define "broadcasting" in future, recognising that broadcasting-like audio and audio-visual content is increasingly being distributed over the Internet (for example, video on demand services). As indicated in Chapter Nine which deals among other things with the overarching licensing framework for ICTs, broadcasters will therefore continue to need specific radio or television licences.

This White Paper on the other hand includes policy interventions to address issues that affect the converged ICT sectors in general, including broadcasting and audio and audio-visual content providers.[4] For example:

- Chapter Six looks at the impact of convergence on ensuring fair competition in the ICT sector and highlights the need for an integrated approach recognising that operators are likely to increasingly offer bundled services to users that will include telecommunications and content offerings. Chapter Seven looks at government approach to convergence.
- Chapter Eight focuses on policies to protect the open Internet, including a net neutrality framework. This is aimed at ensuring that Internet intermediaries cannot unfairly limit what content and services users can easily access. It will thus benefit a range of services on the Internet platform – including broadcasting and broadcast-like content providers.
- Chapter Nine introduces a revised spectrum policy that applies to all entities that use spectrum, including broadcasters. This recognises that the distinction between broadcasting and telecommunications spectrum is becoming increasingly blurred because of convergence

[4] The approach outlined is similar to that adopted in several other jurisdictions. For example, the European Union has retained (and is currently reviewing in light of digitisation and convergence) the policy framework applying to broadcasting in European countries. It has a specific and detailed Audio-visual Media Services Directive which deals with all audio-visual media, including traditional TV broadcasts and on-demand services. It has also put in place a regulatory framework for electronic communications. This includes five directives and two regulations dealing with, among other things, competition, basic user rights and universal access.

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but that there is a need to continue to provide for allocation of adequate spectrum to broadcasting specifically to ensure that Government's objectives for free-to-air and other broadcasting services are met. This Chapter also includes the overarching licensing framework as indicated above.

- Chapter Ten meanwhile focuses on the need to increase the amount of local content available over digital platforms as means to drive uptake of digital technologies. It recognises that broadcasting and broadcasting-like content will be one component of this but notes that this will require specific regulation which will be decided on through the broadcasting policy review process.
- Finally, Chapter Thirteen on institutional frameworks outlines the regulatory approaches for the sectors recognising the different constitutional imperatives that underpin broadcasting and ICT regulation.

1.2 What is covered

This White Paper outlines the overarching policy framework for the transformation of South Africa into an inclusive and innovative digital and knowledge society. It reinforces and extends existing strategies such as South Africa Connect, the national broadband policy[5], the National Cybersecurity Policy Framework, 2012 and the National Information Society and Development Plan.

The Integrated ICT White Paper includes:

- Government's approach to providing cross-government leadership and facilitating multi-stakeholder participation in the drive for inclusive digital transformation in South Africa (*Chapter Four)*
- Interventions to reinforce fair competition and facilitate innovation in the converged environment including approaches to addressing horizontal and vertical integration across the value chain (*Chapter Six*).
- Addresses issues of ICTs and convergence. *(Chapter Seven)*
- Policies to protect the open Internet *(Chapter Eight).*
- Interventions to facilitate digital transformation of society. These include:
    - Policies to address the digital divide and ensure affordable access by all to ICTs (*Chapter Five*).
    - The approaches to address supply-side issues and infrastructure roll-out, including managing scarce resources such as spectrum and numbers and interventions to facilitate open access and rapid deployment of infrastructure . The chapter further deals with licensing framework for ICTs. (*Chapter Nine*).
    - Policies to address demand-side issues in order to facilitate inclusive digital transformation across South Africa (*Chapter Ten*).
- A new national postal sector policy framework (*Chapter Eleven)* including:
    - The market structure for the postal sector,
    - Regulation and licensing of postal services,
    - The role of the South African Post Office in ensuring universal service and access to postal services, extending financial inclusion and facilitating digital access.
- Mechanisms to promote growth in the ICT and postal industries (*Chapter Twelve)*.

[5] South Africa Connect: Creating Opportunity, Ensuring Inclusion, 2013

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- The institutional frameworks necessary to facilitate implementation of policy approaches *(Chapter Thirteen)*.

The core philosophy informing all of the revised policies introduced in this White Paper is a move towards facilitating "openness" – open access, open Internet and open Government.

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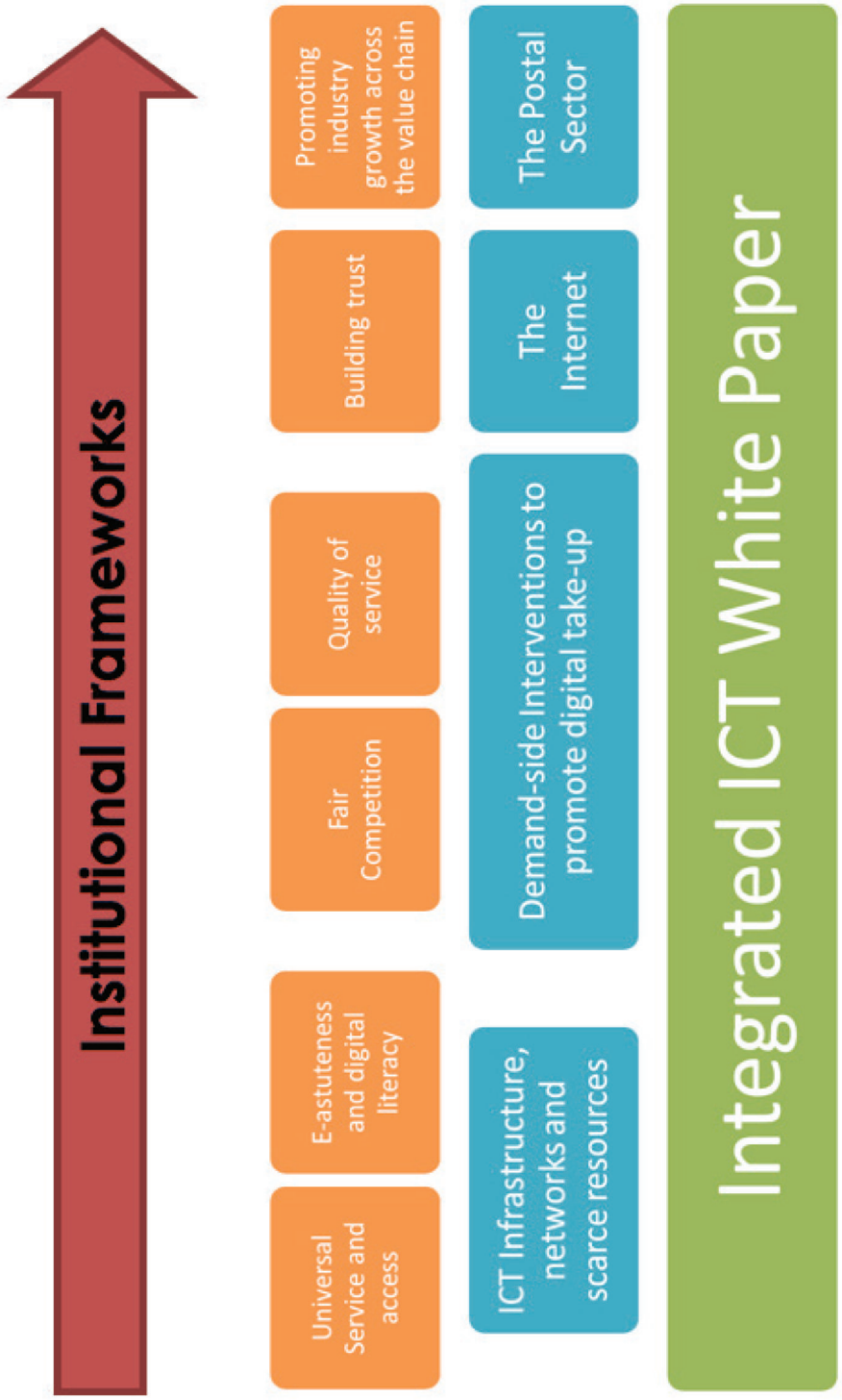

Figure 1: Diagrammatic representation of White Paper

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1.3 Why a new policy?

This national policy framework for ICTs replaces the White Papers on Telecommunications (1996) and Postal Services (1998). Laws such as the Electronic Communications Act, no 36 of 2005 ("the EC Act" or "the ECA") and the Electronic Communications Transactions Act, no 25 of 2002 ("the ECT Act" or "ECTA") will where necessary be amended in line with this White Paper.

Some of the considerations underpinning the overhaul of the previous policies include:

- **Technologies change the way people communicate, interact and transact**

The way people communicate and access information and services and interact with each other and government has changed dramatically over the past twenty years. People now need an electronic address as well as a physical address, access to broadband and not only to a telephone line and the skills, means and knowledge to be able to use communications technology to improve the quality of their lives.

- **Development approaches adopted in South Africa have evolved**

Government's approach to realising social, political and economic transformation and inclusion has inevitably changed and ICT policies need to respond to this. In the 1990s, the Reconstruction and Development Programme (1994) focused on urgently addressing the injustices of apartheid and centuries of racial exclusion. The New Growth Plan (2010) and NDP (2013) set out new approaches to eradicate poverty and ensure quality of life and equality of opportunity for all. Government's Nine-Point Plan to boost economic growth and create jobs identifies particular programmes to stimulate the economy, including through boosting ICT infrastructure and broadband rollout.[6]

- **Extending gains made and addressing challenges experienced**

Ongoing honest and critical review is essential to forward-looking and effective policy development. This is in line with government's framework for monitoring and evaluation of policy implementation and assessment of the impact of approaches.

1.4 Approach

A range of considerations have guided the approaches and policies adopted in this White Paper:

- **A rights-based policy**

The interventions developed are aimed at realising clearly identified public value objectives based on the rights and freedoms in the South African Constitution. At the core of the Constitution is the right to equality and the right of everyone to "*equal protection and benefit of the law (and) the full and equal enjoyment of all rights and freedoms".* The Bill of Rights compels Government to intervene to address unfair discrimination to promote meaningful equality.

- **A holistic policy**

This is a holistic policy for the entire ICT sector – including the postal sector. It sets out the overarching objectives and principles and outlines distinct interventions for each segment to extend and enhance government's transformation agenda.

- **A "*whole-of-government*" approach**

[6] South African Government, "The nine-point plan to grow the economy and create much needed jobs", February 2015, http://www.gov.za/sites/www.gov.za/files/images/nine-point-plan-profile.pdf

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The Constitution recognises that co-operative governance is crucial for radical socio-economic transformation.[7] This is reinforced through laws such as the Public Administration Management Act, no 11 of 2014, which emphasises the need for coherent collaborative service delivery across all spheres of Government.[8] The interventions adopted are therefore responsive to the needs of all of government. Moreover, the DTPS needs to work together with a range of different government departments and public entities (including local government and regulators) if South Africa is to realise the potential of the ICT and postal sectors to promote growth and employment and reduce poverty and inequality.

- **Multi-stakeholder involvement**

The NDP vision of a connected society benefitting all South Africans cannot be achieved by government alone. It will require co-operation with, for example, citizens, civil society, community organisations, the private sector, academic and research institutions and entities within the ICT sector.

- **Promoting flexibility and certainty**

Technologies are evolving rapidly and the policy framework needs to respond to the changing environment, while ensuring regulatory certainty to promote investment and growth. The White Paper thus emphasises ongoing evidence-based assessment of progress against clearly identified goals so that policies can be adjusted proactively if approaches are not achieving the envisaged objectives or have unintended consequences.

- **Government has a responsibility to ensure sustainable development**

This White Paper has also been developed in recognition of Government's obligation to address inequality in society and therefore to ensure that all South Africans have access to digital networks and services and the means to actively participate in the digital society. Interventions are therefore targeted to specifically address market failure, promote social inclusion and ensure public value for public resources such as the radio frequency spectrum.

1.5 Process to develop White Paper

Cabinet initiated the review of all ICT related policies in 2012. The then Minister of Communications appointed a Policy Review Panel in January 2013 following public nominations. The Panel included representatives from the South African ICT industry, academia, NGOs, public institutions and state-owned companies.

Research was commissioned to assist the Panel in assessing and diagnosing challenges and to identify proactive policy approaches for the future. The Panel, together with the Ministry and Department, initiated a series of public consultations – broadly in line with the approach for regulatory impact assessments issued by the Presidency in 2012, prior to the Panel making its final recommendations to the Minister in March 2015.[9]

The following Papers were released for public comment as part of the consultation process:

- The **Framing Paper** issued in April 2013 sought input on the ***objectives and goals*** of policy.

[7] The Constitution of the Republic of South Africa, Chapter 3: Cooperative Government
[8] Preamble, Public Administration Management Act, no 11 of 2014
[9] The Presidency, "Guidelines for the Implementation of the Regulatory Impact Analysis/Assessment (RIA) Process in South Africa", 2012

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- A **Green Paper** released in January 2014 reflected on achievements against the original vision, and asked what ***core issues/problems*** need to be addressed in future policy.
- A **Discussion Paper** was published in November 2014 outlining a range of ***options*** and possible policy approaches to realise the objectives set in the Framing Paper.

Figure 2: Key milestones over the life-span of the ICT Policy Review Panel

This White Paper has been developed after considering the Panel recommendations and the inputs received from stakeholders through the policy review process.

ICTs for development

The NDP highlights nine key challenges facing South Africa. ICTs can assist in addressing all of these.

Too few people work

The ICT sector is an economic sector itself. Innovative and targeted policy can assist in unlocking its potential and increase employment in the sector. ICTs can also boost growth in other sectors and promote SMME development by reducing costs and geographic barriers while increasing efficiencies and creating new opportunities. The development of central registers of skills and employment opportunities can further facilitate employment. Digital literacy programmes are likely to increase the employability of individuals across South Africa[10].

The quality of school education is poor

E-learning and innovative use of ICTs in the education sector can assist in addressing inequalities in education in schools across South Africa, and facilitate ongoing improvement of educator skills.

Infrastructure is poorly located, inadequate and under-maintained

This White Paper includes interventions to address infrastructure challenges in the ICT sector. Use of smart technologies can also assist in facilitating sustainable infrastructure development across all sectors by, for example, providing early warning systems to alert of maintenance issues.

Spatial divides hobble inclusive development

ICTs can assist in reducing geographical divides and facilitating participative and inclusive development across the country.

The economy is unsustainably resource intensive

This White Paper is focused on building an inclusive knowledge economy.

[10] Digital skills are likely to become increasingly essential to employment in many sectors in South Africa and basic digital literacy and e-astuteness programmes thus crucial to increasing employability.

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The public health system cannot meet demand or sustain quality
E-health solutions and innovative use of ICTs can significantly improve access to quality health care for all people across the country. ICTs can also assist in proactive monitoring of disease incidence and allow patients to report on poor healthcare. Mobile and other communication with patients can increase health awareness among citizens and encourage adherence to health programmes.

Public services are uneven and often of poor quality
Digital transformation of government can assist in transforming the public sector and, for example, increase efficiency of delivery, reduce the costs of providing services and ensure equitable access for all to public services. ICTs can also assist in increasing transparency and accountability and facilitate greater participation by citizens in public policy-making.

Corruption levels are high
ICTs can play a crucial role in increasing the effectiveness and reach of Government programmes to address corruption.

South Africa remains a divided society
ICTs facilitate conversations, allow citizens to engage with each other, with government and other institutions - regardless of where they live. While social media can seem to breed social division, it can play a role in building communities and give all South Africans the opportunity to access a wide range of information, ideas and analysis.

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2. Vision and principles

"By 2030, we seek to eliminate poverty and reduce inequality. We seek a country where all citizens have the capabilities to grasp the ever broadening opportunities available. Our plan is to change the life chances of millions of our people…"

The National Development Plan: 2030[11]

The main purpose of this White Paper is to unlock the potential of ICTs to eliminate poverty and reduce inequality in the country by 2030. Specific goals and objectives for policy interventions adopted to achieve this are outlined in each chapter.

This White Paper sets out the South African government's choices in relation to the principles, rules and guidelines put in place to achieve the long term goals and objectives set out in the National Development Plan and the South African Constitution. Government has conducted extensive consultation on key ICT sector issues in order to arrive at these policy principles and objectives.

2.1 Vision

The overarching vision for the role that the communications sector should play in achieving Government's development objectives for the country is captured in the NDP: It states that:

> *"ICT will continue to reduce spatial exclusion, enabling seamless participation by the majority in the global ICT system, not simply as users but as content developers and application innovators".* [12]

The radio-frequency spectrum is a national resource. Government is therefore obliged by the Constitution to ensure maximum public value from its use and to ensure that it enhances rather than stifles equality in the country. This includes managing and allocating spectrum and the networks and services carried using this resource. The policy framework must therefore promote inclusive economic growth and investment while facilitating radical socio-economic transformation.

Both the New Growth Path and the National Development Plan recognise that inclusive economic growth in South Africa is critical to addressing inequality. Increased access to communications technologies, in particular broadband, and the services and content carried on ICT networks, is acknowledged as an important means of promoting growth.[13] To realise this, it is crucial that:

> *"All people, regardless of who they are, their social or economic status or where they live, can access communications services and content and can therefore participate actively in society and realise the benefits and opportunities of ICTs".*

If this is to be achieved, both supply (infrastructure, networks and resources) and demand issues (including facilitating e-astuteness, accessibility by persons with disabilities and the availability of

[11] NDP, Foreword,
[12] NDP, page 170
[13] A frequently cited World Bank study found that low-income and middle-income countries experienced "about a 1.38 percentage point increase in GDP for each 10 percent increase in [broadband] penetration" between 2000 and 2006

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relevant services and content in all languages) must be addressed. This requires a focus on further extending networks to reach all communities in all parts of the country and matching this with investment in, for example, training, education and the development of relevant content, applications and services in all languages on all platforms and for all devices. This dual emphasis will necessitate partnerships with all stakeholders in the sector to realise the goals set in the United Nations "*2030 Agenda for Sustainable Development*" and ensure that ICTs "*accelerate human progress, bridge the digital divide and develop knowledge societies*" while facilitating achievement of all the sustainable development goals agreed on.[14]

This White Paper also recognises that a paradigm shift is necessary if the White Paper objectives are to be met. As articulated in the African Union's ("the AU") *Agenda 2063,* Africa must do things very differently to achieve the AU's vision of "*an integrated, prosperous and peaceful Africa, driven by its own citizens and representing a dynamic force in the global arena".* [15]

The ICT Policy Review process included widespread consultation on what the objectives of Government's policy for the ICT sector should be. The box below outlines the results of this consultation.

Objectives

"A people-centred, development-oriented and inclusive digital society"

- **Equality:** All South Africans must have affordable access to communications infrastructure and services and the capacity and means to access, create and distribute information, applications and content in the language of their choice.
- **Accessibility:** Services, devices, infrastructure and content must be accessible for all sectors of the population, including persons with disabilities, so that all can equally enjoy and benefit from communication services
- **Social Development:** All South Africans must benefit from the ability of the ICT sector to facilitate social development and improve the quality of life for individuals and communities.
- **Economic Growth**: Policy must facilitate access by all South Africans to quality communication infrastructure and services to enable economic growth, employment and wealth creation.
- **Investment:** Policy must promote and stimulate domestic and foreign investment in ICT infrastructure, manufacturing, services, content, and research and development.
- **User Protection:** End-users, from the most disadvantaged individual to the largest corporate, must be at the centre of ICT sector-related policies. Effective protection and empowerment of end-users and superior quality of service are therefore key objectives of this policy and necessary areas of regulatory intervention
- **Privacy and Security:** Provisions must safeguard the right of all South Africans to privacy, to protection of personal information, and to a safe and secure communications environment both online and off-line. This is essential to trust in ICTs.

[14] UN, "Transforming our World: The 2030 Agenda for Sustainable Development", paragraph 15
[15] African Union, "Agenda 2063: Vision and Priorities", http://agenda2063.au.int/en//vision

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- **Innovation and Competition:** Innovation, fair competition and equitable treatment of all role players must be facilitated to ensure a range of quality services are available to end-users and audiences.
- **Transparency and Accountability:** The right of South African citizens to access to information and to maximum transparency in how services are delivered and conditions under which they are delivered must be promoted.
- **Environmental Protection:** Policy must ensure that the design, use, and eventual disposal of ICTs recognise and protect the right to an environment that is not harmful to health or well-being.
- **Technology Neutrality:** Regulatory interventions should as far as possible be technologically neutral in order to stimulate innovation and facilitate the development of innovative new product and service offerings.
- **Open Access:** Regulatory intervention should wherever possible be based on open access principles to ensure maximised, efficient and fully-leveraged use of available infrastructure and services, through encouraging infrastructure sharing, spectrum re-farming, optimal interconnection, balanced with the need for fair returns on investment.

2.2 Principles and values

Government is committed to the NDP vision of a "*state capable of playing a transformative and developmental role*"[16]. In line with this, the following principles and values have guided the development of this policy and will steer implementation of this White Paper framework:

- Any interventions must be ***necessary*** to meet clearly defined public interest objectives.
- Any interventions must be ***proportionate, consistent and evidence-based*** and determined through public consultation.
- The policy maker and regulator must consider the ***least intrusive mechanism*** to achieve the defined public interest goal/s, and will consider, where appropriate, alternative models such as co-regulation and/or self-regulation.
- The ***socio-economic and regulatory impacts of any action will be assessed*** and considered before imposing regulations, rules and/or conditions.
- The policy maker and regulator will ***act fairly*** and ensure ***regulatory parity*** in defining markets and deciding on interventions.
- The regulator must perform regulatory activities and functions in line with policy. When taking decisions, ***the regulator must function without undue external influences and carry out its decision-making functions independently.***

In addition, there will be ***ongoing assessment of the effectiveness and impact of policies, rules and regulations*** in order to amend approaches which are not achieving the identified objectives, address any unforeseen implications of interventions and thereby determine further policy reform.

[16] NDP, Chapter 13: Building a Capable State

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3. Measuring Progress

"Statistics are about people, places and possibilities about evidence and use of evidence for transforming lives for the better. There is greater need now more than ever, for Government and civil society to be alive to the evidence of the Statistical world as a basis for the formulation of their actions and projects"

Minister in the Presidency for Planning, Performance, Monitoring, Evaluation and Administration, Jeff Radebe, July 2014[17]

Understanding who does not have access to the different communications networks and services, where they live and the reasons for this is essential to developing targeted policy interventions to facilitate digital transformation in South Africa. Similarly, statistical information on people's experiences of e-government services is crucial to determine if these are user friendly and financial data on investment, expenditure and revenue of ICT companies is necessary to measure the effects of policies on growth of the sector.

Government is committed to using statistics to set its strategies and assess their impact. This Chapter sets out some of the available key statistics on the sector/s to set a baseline against which progress can be monitored. Statistics South Africa (StatsSA) has been used as far as possible in collating the information. This has been supplemented by data from other sources, where necessary. There are many gaps in the statistical information readily available. For example, there is limited gender disaggregated data or granular statistics on differences in ICT access and use by age group. Government will work with StatsSA to address these and ensure regular detailed and timely collection of the data necessary to measure performance.

3.1 People

The StatsSA mid-year population estimate for 2015 is just under 55 million people. It projects that this will grow to over 65 million people by 2030.

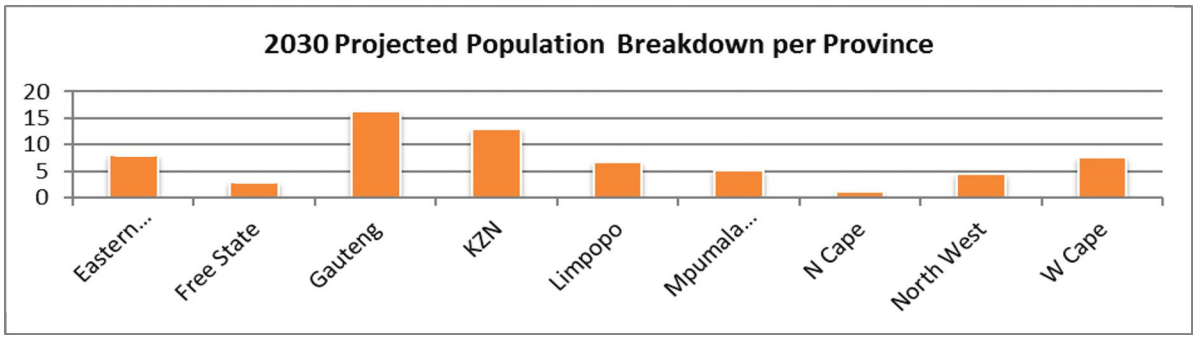

Figure 3: Project population breakdown StatsSA

[17] Republic of South Africa, The Presidency, "*Speech by Minister Jeff Radebe on the occasion of the opening of the Statistics South Africa (StatsSA) symposium*", 29 July 2014, http://www.thepresidency.gov.za/pebble.asp?relid=17785

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3.2 ICTs

Detailed analysis of information on the ICT sector is provided in the relevant individual chapters. This section provides an overview.

3.2.1 Universal Service Gap

3.2.1.1 Phones

According to StatsSA's General Household Survey (GHS), only four per cent of households in South Africa did not have access to either a landline or cellular telephone in 2014. As can be seen from the table below, this is driven by high access to mobile phones. The distinctions between provinces are minimal as regards access to mobile phones – with more significant differences seen in relation to access to a landline.

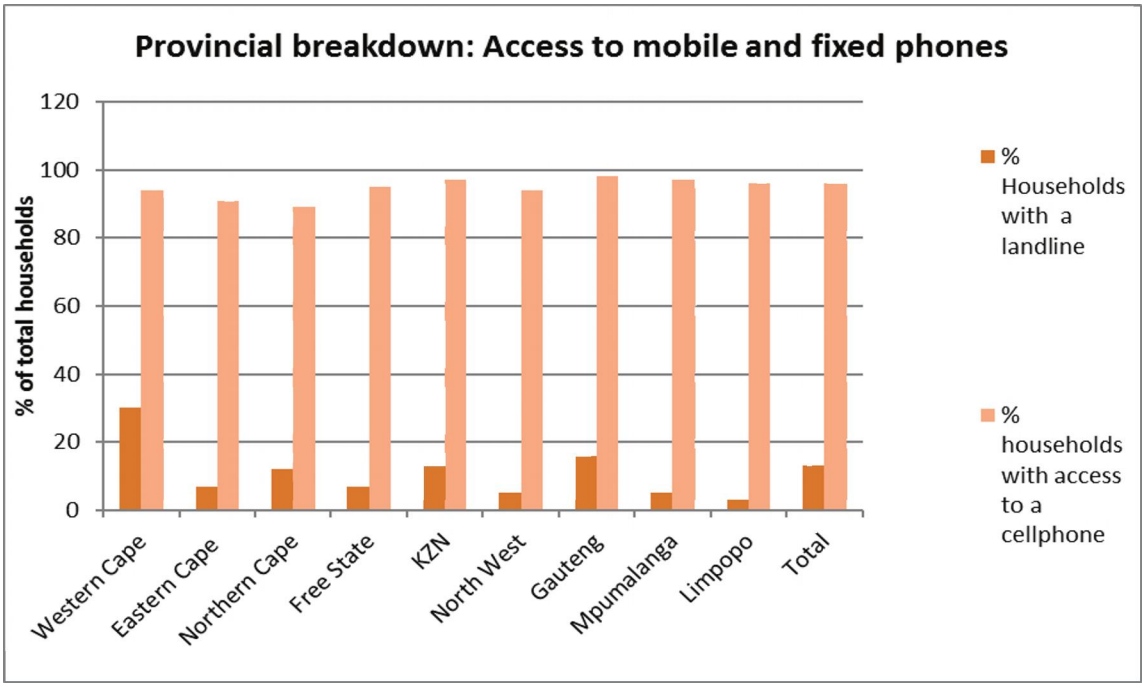

Figure 4: Source StatSA General Household Survey, 2014

South African Advertising Research Foundation (SAARF) statistics indicate that access to mobile phones (not number of subscribers but people who reported having used a cell phone) is similarly high across all LSM groups – though highest among the more affluent (see figure below).

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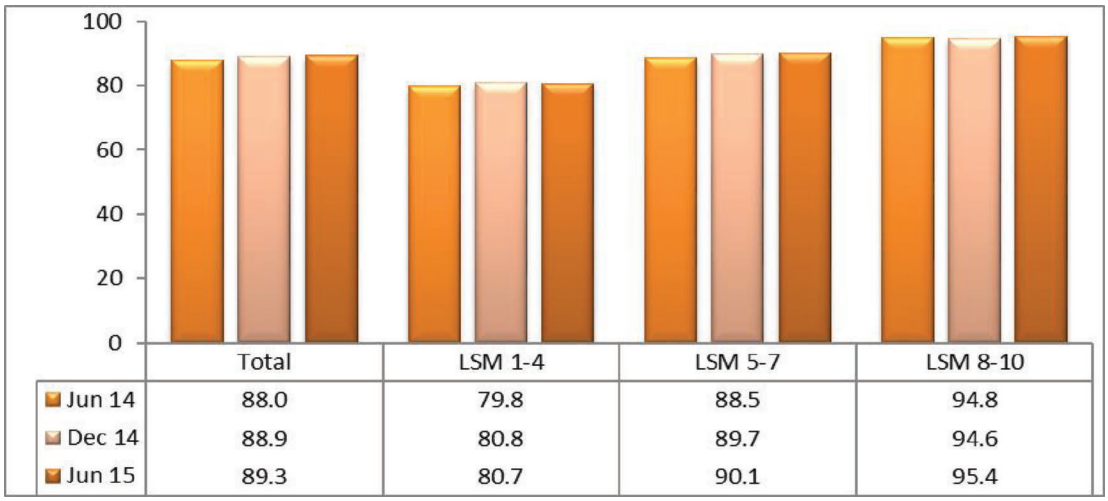

	Total	LSM 1-4	LSM 5-7	LSM 8-10
Jun 14	88.0	79.8	88.5	94.8
Dec 14	88.9	80.8	89.7	94.6
Jun 15	89.3	80.7	90.1	95.4

Figure 5: SAARF All Media and Products Survey 2015A

While smartphone usage has increased, SAARF AMPS 2015A reports that close to half of the adult population recorded not having personally used a smartphone in the period from December 2014-June 2015. Only 22.3 per cent of adults in LSM 1-4 said they had used a smartphone over the period compared to 78 per cent of adults in LSM 8-10).

3.2.1.2 Internet

StatsSA's GHS 2014 reports that less than half of households (48,7 per cent) had access to the Internet in the period measured. Access was highest in the Western Cape (62,1 per cent), Gauteng (59,9 per cent) and the Free State (48,7 per cent).

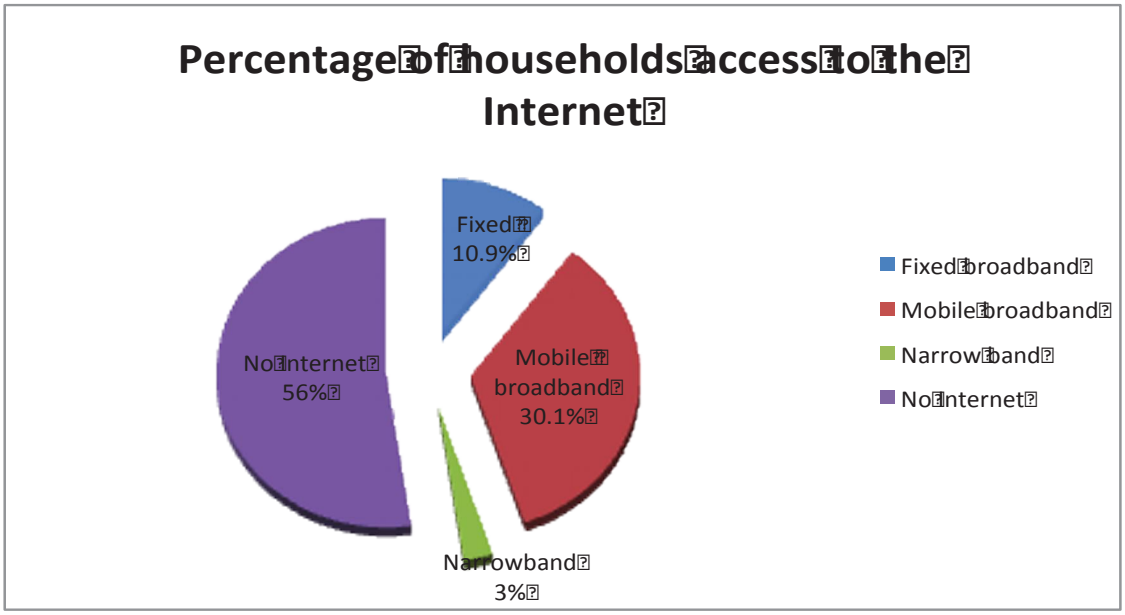

Figure 6: Source StatsSA GHS 2014

The general household survey reports that the primary reasons people given for not accessing the Internet at home are a lack of knowledge/skills/confidence or that they have no need to.

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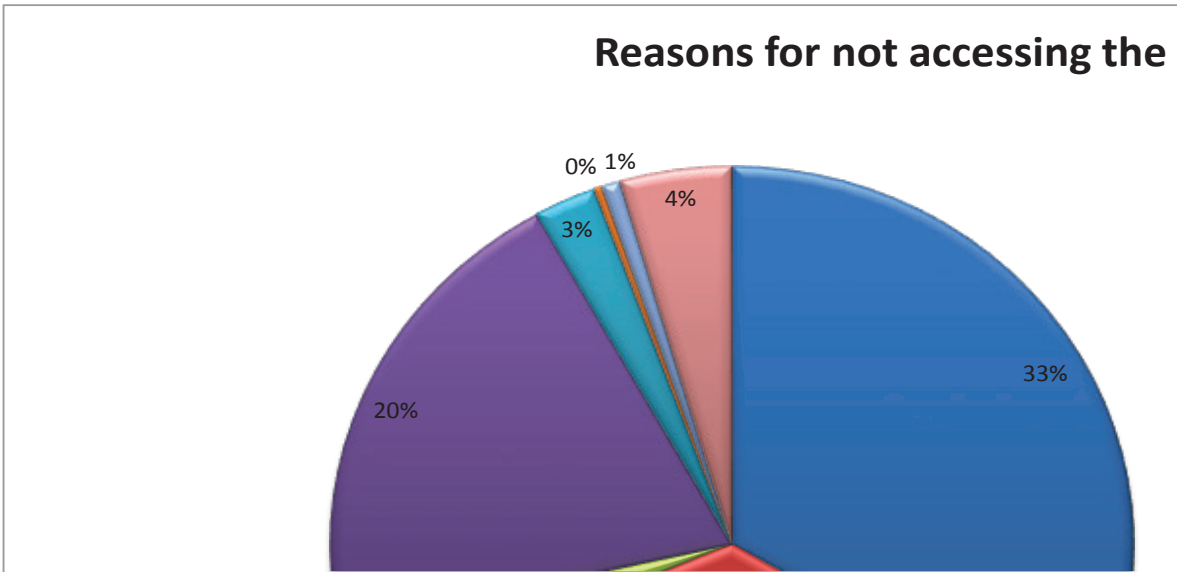
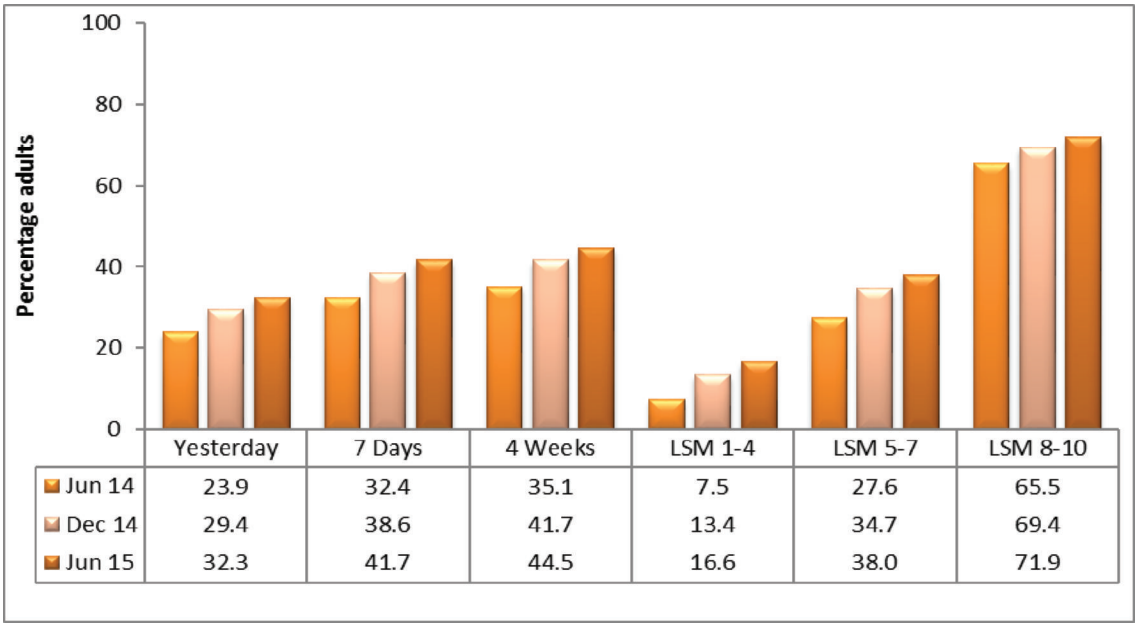


Figure 7: Source SAARF AMPS 2015A

SAARF AMPS 2015A also looks at frequency of access (see figure below). It states that most (45 per cent) of the respondents indicated that they had accessed the Internet in the "past four weeks" (i.e. not recently or regularly) while just over 30 per cent said they had gone onto the Internet the day before. According to StatsSA's findings, only 16,6 per cent of adults at the bottom of the pyramid (LSM 1-4) reported that they accessed the Internet at all in the period from December to June 2015 compared to over 70 per cent in the top LSM (8-10).



	Yesterday	7 Days	4 Weeks	LSM 1-4	LSM 5-7	LSM 8-10
Jun 14	23.9	32.4	35.1	7.5	27.6	65.5
Dec 14	29.4	38.6	41.7	13.4	34.7	69.4
Jun 15	32.3	41.7	44.5	16.6	38.0	71.9

Figure 8: Analysis of when last used the Internet and breakdown of access per LSM, Source SAARF AMPS 2015A

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3.2.1.3 Affordability

The cost of access is affected by the technology used to go online. According to BMI-T connecting over DSL (connection over a telephone line) cost around R12/GB and the "prevailing rate" for mobile broadband services was R50/GB.[18]

Although Government and regulatory interventions have reduced the cost of mobile voice services in South Africa, data costs have generally remained stable according to a 2015 Research ICT Africa (RIA) policy brief. The report states that this is in sharp contrast to data prices in other African countries where there has been a steep decline. RIA measures the cost of a monthly 1GB prepaid usage basket.

The institute also considers "value for money" based on an assessment of the quality of service (average download and upload speeds) and the costs. South Africa performs better in terms of this it states: "*Although Vodacom and MTN are amongst the more expensive operators in Africa, they fare well in terms of value for money and are among the top 10 operators*". [19]

3.2.1.4 ICT spend

StatsSA's 2015 "*Information and Communication Technology satellite account for South Africa*" report records that close to 5 per cent (4,6 percent) of South Africans household expenditure was spent on ICT products ((R91,6bn) in 2012. In other words, for every R100 spent by a South African household in 2012, R4,60 was spent on ICT products (including television subscriptions and licences, airtime, broadband access, telephone costs, communication equipment, and media products such as books and newspapers). The bulk of this (R2,90) was spent on telecommunications, broadcasting and information supply services.[20]

3.2.1.5 Projections

The PricewaterhouseCoopers (PwC) 2015 Entertainment and Media Outlook Report projects that mobile Internet penetration in South Africa will rise steeply from 36,6 per cent in 2014 to 69,1 per cent in 2019.

	2012	2013	2014	2015	2016	2017	2018	2019
Smartphone connections (millions)	12	18	23	28	34	40	46	52
Active tablet devices (millions)	1	2	3	4	4	5	5	6
Mobile Internet Penetration (%)	20.6%	28.3%	36.6%	45.5%	53.3%	59.5%	64.4%	69.1%

[18] BMI-T report for the DTPS, 2016
[19] Research ICT Africa, "Consumers benefit from lower termination rates", Policy Brief No 1 2015, http://www.researchictafrica.net/polbrf/Research_ICT_Africa_Policy_Briefs/2015_Policy_Brief_1_Consumers_benefit_from_lower_MTRs.pdf
[20] http://www.statssa.gov.za/?p=4414

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Table 1: PwC Entertainment and Media Outlook 2015

The BMI-Techknowledge (BMI-T) Quarter 4 South African Telecommunications Report forecasts that landline access will continue to drop, while mobile phone subscriptions will start to stabilise.[21] The percentage of mobile subscribers using 3G and 4G will they predict continue to grow – from 29.8 per cent in 2012 to just under 45 per cent in 2019.The average revenue per user (ARPU) will continue to drop but not as dramatically as between 2012 and 2014.

	2012	2013	2014 (estimate)	2015 (forecast)	2017 (forecast)	2019 (forecast)
Main telephone lines/100 inhabitants	7.9	7.7	7.4	7.2	6.9	6.7
Mobile phone subscribers/100 people	132.7	141.8	158.3	160	161.3	159.4
3G & 4G market, % of mobile market	29.8	33.6	34.7	37.9	42.5	44.7
Monthly blended Average Revenue Per User (ARPU) (ZAR)	107.9	101.1	88.8	88.7	87.9	86.6
Broadband Internet subscribers per 100 inhabitants	11.9	13.4	14.7	15.6	16.4	16.6

Table 2: South African Telecoms Sector: 2012-2019 - Source BMI SA Telecommunications Report Q4 2015

3.2.2 Infrastructure investment

According to research conducted by BMI-T for Government, the major telecommunications operators invested over R191bn on capital expenditure in the ten year period from 2005-2016. Sixty four per cent of this investment over the period was in mobile networks.

[21] The figures for mobile phone subscription are higher than 100 per cent as some people have more than one sim card.

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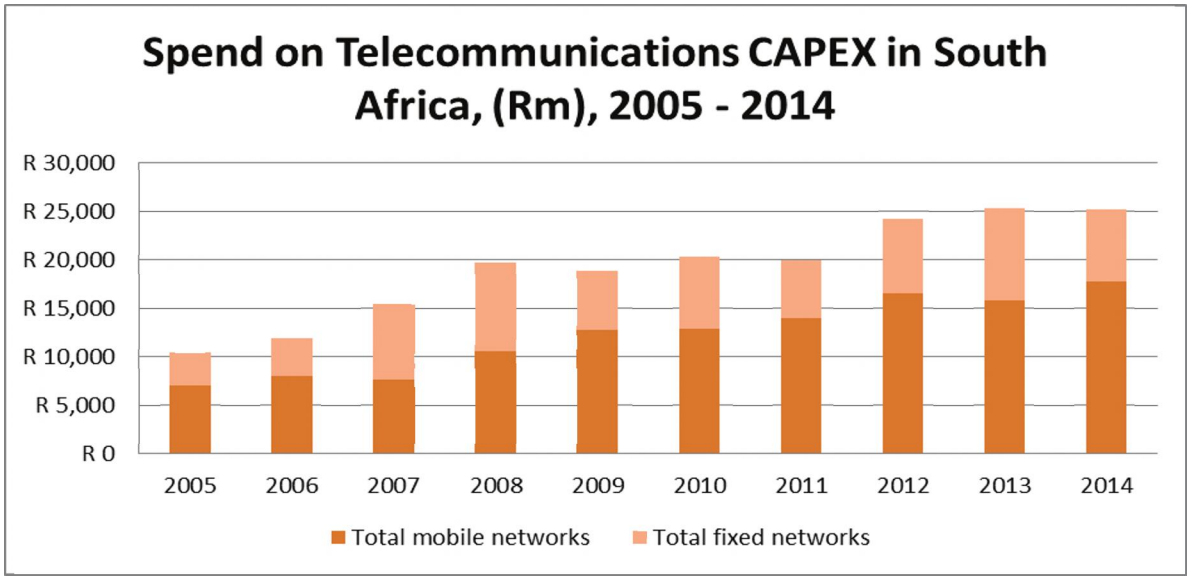

Figure 10: BMI-T SA Connect Broadband Report 2015, sourced from operator reporting

3.2.3 Contribution to GDP

StatsSA's 2015 ICT satellite report indicates that telecommunications services contributed 2 per cent (R64,8bn) to total GDP in 2012. ICT manufacturing contributed a further R6,6bn to GDP – 0,2 percent. South Africa is a net importer of technology – and the country had an ICT trade deficit of R78,9bn in 2012.

Imports of ICT products amounted to R105,7 bn and the sector accounted for R10,4 per cent of all imports in 2012. Most imports are of equipment (radio, television and communications equipment). Services on the other hand make up the bulk of the exports. Broadcasting, telecommunications and information supply services (including knowledge services) accounted for close to 60 percent of the total worth of ICT exports of R26,8bn.[22]

3.3 Postal Sector

More detailed information on the performance of the postal sector is provided in Chapter Ten of this White Paper. It is noted that detailed updated statistics on the postal sector are not readily available. The DTPS will work closely with StatsSA and the regulator to address this.

The South African Post Office, although struggling, remains the biggest postal operator in the sector with a market share estimated at 61% of the reserved and unreserved markets combined. It is estimated that there are approximately 300 companies in the unreserved market that are registered with ICASA[23].

[22] StatsSA, "Information and Communication Technology Satellite Report for South Africa 2012", Report No 04-07-01, March 2015, http://www.statssa.gov.za/publications/Report-04-07-01/Report-04-07-01January2012.pdf

[23] Pygma (2013) Overview of Legislative and Policy Review report, DOC/18/2012/13, Part 1

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3.3.1 Access to postal services

According to the Universal Postal Union (UPU)[24], the percentage of people without access to any postal services at all in South Africa was just over 1 per cent (1,2 per cent) in 2013. This is a significant improvement from 2011 when according to the UPU 3,6 per cent of the population did not have access to any services.

3.3.2 Letter mail

According to the StatsSA General Household Survey 2015, just under half of South African households had their mail delivered to their home in 2014 (7,3 million households reporting having letters delivered to their dwelling out of a total of 15,6 million households). About 22 per cent of households said they did not receive mail at all.

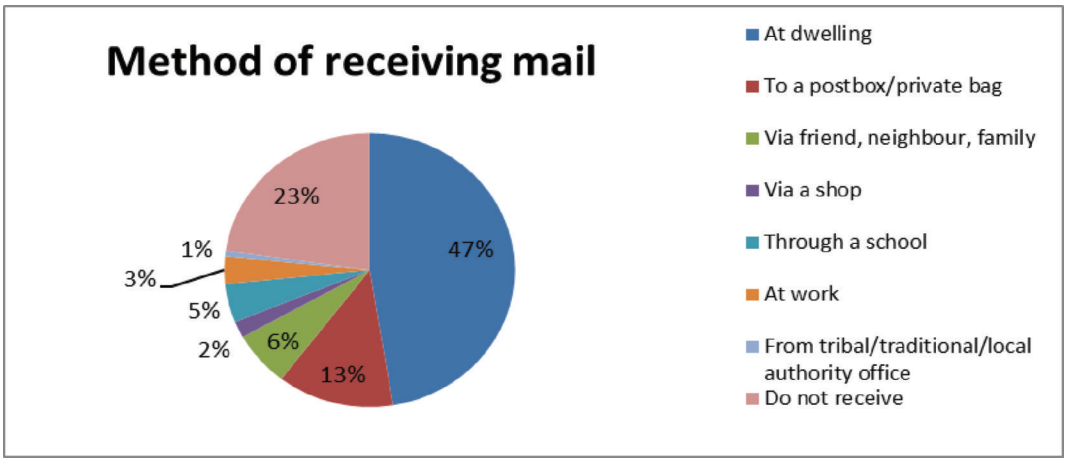

Figure 9: Source StatsSA GHS 2015

3.4 E-Commerce

While online sales in South Africa are increasing, growth is reportedly slow. In research commissioned to inform the ICT policy review, Detecon Consulting said that it expects continued slow growth in online retail sales in the short-term and that it projects slower growth in South Africa comparative to its peers in BRICS.

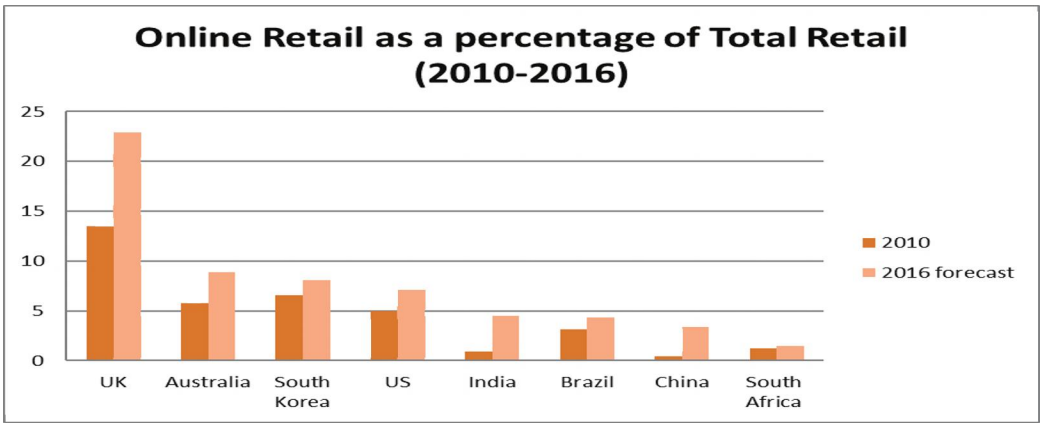

Figure 12: Source Detecon analysis of BCG Report

[24] The United Nations specialised agency for the postal sector

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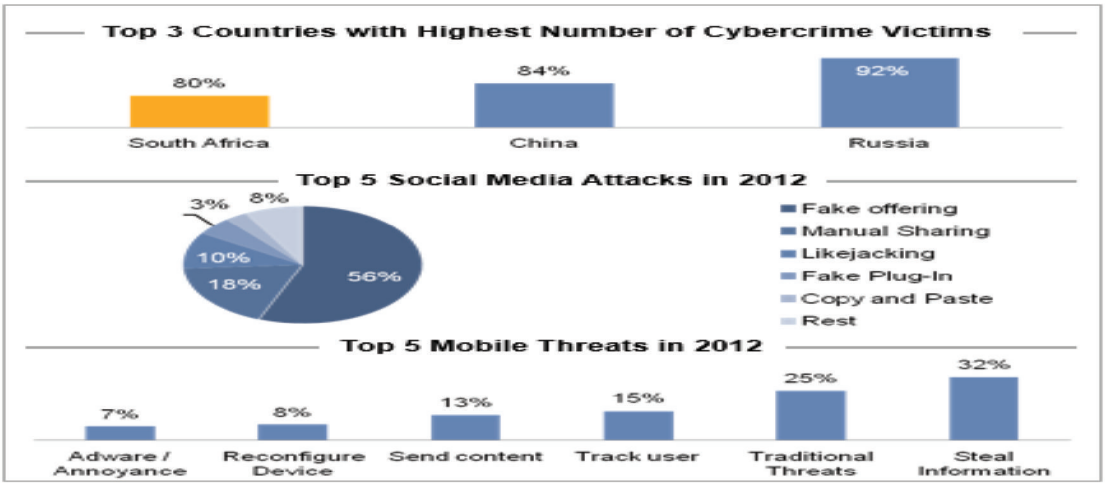
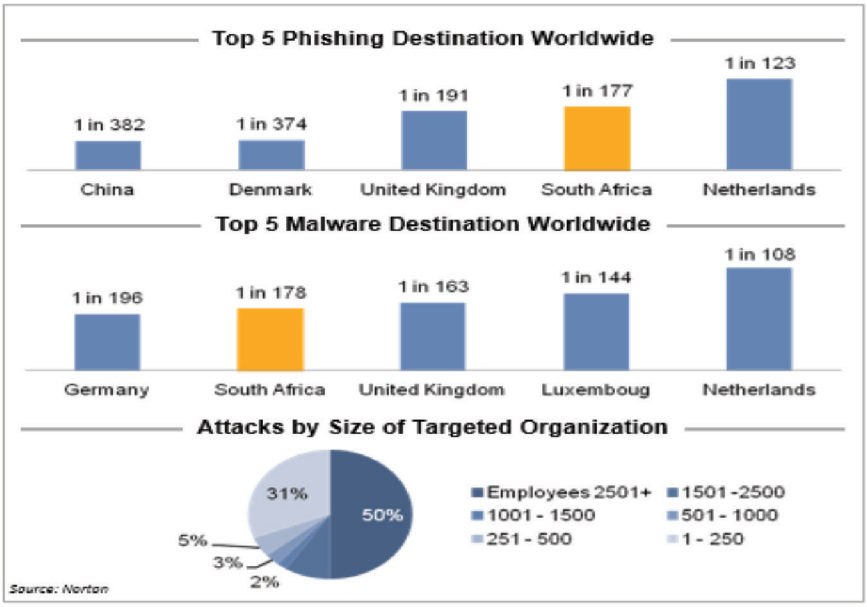
3.5 Trust and security

Statistics on cybercrime and cyber threats are not conclusive in South Africa as there is currently no compulsion to report such threats[25]. There is though evidence that online and mobile crime is on the increase – and, for example, the Norton Cybercrime 2013 Report states that South Africa has the third highest number of cybercrime victims with 80 per cent of respondents to their study reporting that they had been victims of online crime.



According to Detecon, South Africa is also one of the top five countries affected by phishing and malware.



Source: Detecon analysis of Norton Cybercrime 2013 Report

[25] This will be remedied once a cybercrime law is finalised

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4. Decisive leadership: Active Citizenship

"The NDP aims to eliminate poverty and reduce inequality by 2030. …South Africa can realise these goals by drawing on the energies of its people, growing an inclusive economy, building capabilities, enhancing the capacity of the state, and promoting leadership and partnerships throughout society."

NDP Foreword

Making the most of the potential role that ICTs can play in supporting radical transformation in South Africa as envisaged in the NDP will require complex coordination and leadership across government. Individuals, communities and all sectors of society will also need to be involved if a people-centred, inclusive and development-oriented digital society is to be fully realised.

This Chapter outlines the approach adopted to ensure decisive and visionary leadership of the digital transformation process. It reinforces Government's commitment to multi-stakeholder involvement in this transformation – recognising that it is essential that Government work in partnership with a range of stakeholders and social partners (including individuals, communities, civil society organisations, the labour movement and NGOs across all sectors, the private sector broadly and ICT entities within this, technical experts and academics) to realise the vision of an inclusive digital society.

4.1 Driving the digital agenda

The NDP recognises that harnessing the potential of ICTs to contribute towards all economic and social goals will require a coordinated plan cutting across all government departments and spheres. As indicated in the statistics in Chapter Three, too many people are still excluded from full access to communications networks and services. Addressing this is at the core of all the interventions outlined in this White Paper.

4.1.1 Context

Stakeholders who participated in the process leading up to this White Paper identified a lack of decisive leadership at Government level as one of the fundamental challenges to addressing the digital divide, and warned that convergence and digitisation in the ICT sector will necessitate increased direction if objectives are to be realised. The ICT Policy Review Advisory Panel endorsed this, stating that government needed to put in place "whole-of-government" leadership to end what was dubbed a "silo" approach and ensure that the digital agenda is applied across all government spheres and entities.

Benchmarking conducted on countries that have successfully begun the process of digital transformation reinforces the importance of national centralised leadership:

- In **Sweden** and **Finland** the digital transformation project is driven by the Cabinet/head of Government and responsibility for implementation given to a line Minister. All have put in place a cross-cutting structure to coordinate across government and provide advisory services.
- **In Korea and the UK** the transformation programme is led from a Commission/Minister in the Presidency.

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- In **Finland** the Finance Ministry is responsible for e-government but this is managed by the Minister responsible for ICTs.
- In **Estonia,** digital transformation has been driven by the Prime Minister's office and managed by the Minister responsible for ICTs. The focus of the Ministry is on coordination between different government departments and with local governments.

4.1.2 Objectives

The objectives of this policy are to facilitate:

- Decisive and visionary leadership of the digital transformation project in South Africa.
- A whole of government approach to digital transformation and coordination between government departments and entities and across all relevant spheres of government.
- Effective monitoring of the implementation of strategies adopted and the impact of these on the vision of inclusive digital transformation of government, the economy and society.

4.1.3 Intervention

Cabinet will establish an Inter-Ministerial Committee answerable to the Executive – the Digital Transformation Inter-Ministerial Committee ("the Digital Transformation Committee"). The final constitution of this Committee will be finalised by Cabinet on adoption of this White Paper:

- The Committee will be responsible for driving the programme for change across the public service. It will facilitate coordination of activities across government to ensure that a whole-of-government approach is applied.
- Individual Ministries will be responsible for roll-out of ICT-related solutions in their specific focus areas. The Committee will assist in ensuring that any challenges faced by individual Ministries in implementation are addressed speedily and that Departments, Provincial and Local Governments are provided with strategic assistance where necessary.
- Instruments will be put in place to ensure compliance across Government with standards and approaches adopted by the Committee and/or in this White Paper.
- All relevant legislation will be reviewed, including the Public Service Act and the Electronic Communications and Transactions Act, and amended where necessary to ensure clarity about the different roles to be played by different Ministries and entities.
- The Digital Transformation Committee will oversee the development of a detailed digital transformation plan and road map to realise and prioritise all policies included in this White Paper for adoption by the Digital Transformation Committee.
- The Digital Transformation Committee will rigorously monitor progress against objectives. Statistics South Africa (StatsSA) will assist in identifying and measuring key indicators to assess progress.

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4.2 Building partnerships

The World Summit on the Information Society (WSIS) Declaration of Principles emphasises that "*a joint effort*" and "*cooperation and partnership among all stakeholders*" are essential to building a people-centred Information Society.[26]

4.2.1 Context

Government is committed to ensuring that implementation of the ICT policy framework is a truly national programme, involving all social partners, including individuals and communities, the private and non-profit sectors, universities and other institutions. This is in line with the South African Constitutional framework which is based on participatory democracy and the NDP which calls for active citizenship to realise its goals.

In order to facilitate meaningful participation by a broad range of stakeholders in the ICT framework, the Minister of Telecommunications and Postal Services has established a National ICT Forum. This Forum provides a platform for dialogue and engagement across society. According to its Terms of Reference, its focus is on accelerating implementation of all policies and sectoral plans. Membership of the Forum is open to all those interested in participating in fast-tracking the building of a people-centred and inclusive digital society and economy.

4.2.2 Intervention

The Ministry will continue to strengthen and support the National ICT Forum and ensure that it does play the envisaged key role in assisting Government in implementing this White Paper by facilitating the establishment of the partnerships essential to achieving the objectives set. The National ICT Forum will include members of Government departments that are responsible for IT strategy as well as all social partners across society.

[26]: World Summit on the Information Society, "Declaration of Principles:, :The Role of governments and all stakeholders in the promotion of ICTs for development", B1paragraph 20, 2003, http://www.itu.int/net/wsis/docs/geneva/official/dop.html

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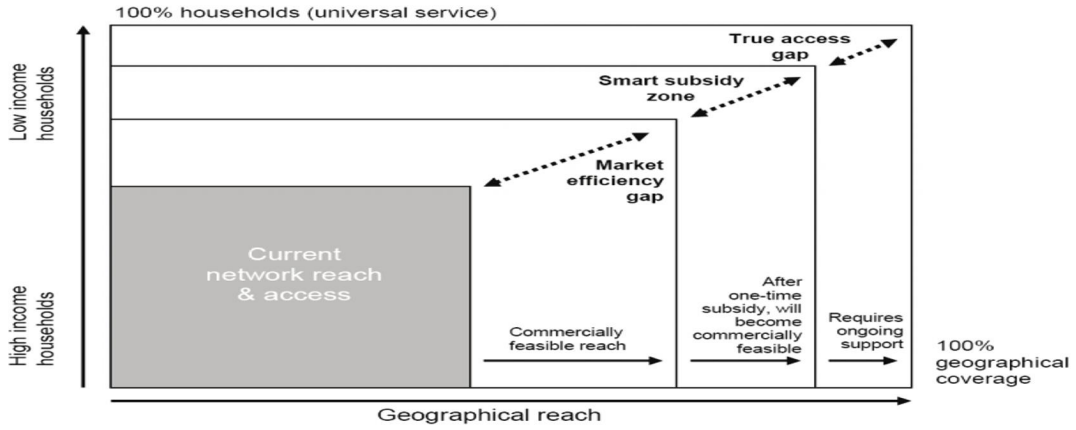
5. Universal Service and Access

"We are fully committed to turning this digital divide into a digital opportunity for all, particularly for those who risk being left behind and being further marginalised."

WSIS

South Africa remains a deeply unequal society and it is crucial if ICTs are to contribute to the goals of the NDP of eliminating poverty and reducing inequality, that the policy framework for the sector decisively addresses universal service and access to communications platforms, services, applications and content. In a digital society, universal access to communications services is not just a tool to address inequality across society but also a precondition for equality.

Government supports a multi-faceted, multi-stakeholder and adaptable approach to assessing and addressing the range of diverse potential access gaps in South Africa. The diagram below, drawn from ITU international best practice, identifies the different types of interventions necessary to address the different categories of access gap (obligations to increase market efficiency, once off smart subsidies and on- going support for particular users)



The Access Gap Analysis Framework (Source: Infodev, 2009)[27]

This section of the White Paper focuses on addressing the "true access gap" through development support and subsidies and the "smart subsidy zone". It also includes sections on facilitating quality of service for all users and the approach to effective consumer protection, as these are interlinked with meaningful universal service and access. Frameworks to protect consumers and users must recognise that people and communities within the smart subsidy and true access zones are most likely to suffer poor quality services and will have limited knowledge of their consumer rights.

[27] InfoDev, 'Universal Access and Service', 2009, Executive Summary, Module 4, ICT Regulation Toolkit and International Telecommunication Union available online at http://www.ictregulationtoolkit.org//Mod4ExecSummary (Note: Versions of this diagram appear frequently in international best practice. It has evolved and been developed since its original appearance in Navas-Sabater, Dymond & Juntunen, 2002, p8.)

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Note that this entire White Paper is to a large extent focused on extending access to ICTs and therefore all policy interventions adopted supplement the provisions outlined in this Chapter. Other interventions in the White Paper aimed at tackling digital exclusion include:

- Chapter Six looks at ways to promote fair competition and therefore address the "market access gap" identified in the above diagram.
- Policies aimed at extending the reach of networks and facilitating access by all to a range of mobile and digital services, applications and content are outlined in Chapter Eight.
- Approaches to facilitating digital literacy and strategies to ensure content and services are relevant to people's needs are covered in Chapter Ten.
- Interventions to boost the manufacturing and software development sectors and facilitate growth in SMME's in the sector are covered in Chapter Twelve: Industry Development. These are focused to a large extent on developing affordable devices and innovative services and applications relevant to the South African context.
- Chapter Eleven looks at how to strengthen the compliance framework for all licensees in the `postal sector.

5.1 Context

It is important first to clarify the distinctions between universal service and universal access. **Universal service** is aimed at direct provision of ICT services to *individuals or households.* **Universal access** on the other hand is aimed at increasing access to communication services on a shared basis, such as on a *community or village-wide level.* While the concepts are similar, different policy interventions might be required to achieve each. While universal service is the ultimate objective in South Africa, universal access strategies will be put in place to achieve communications for all in communities, and categories of persons in need of demand side subsidies, in the medium term.

Universal access and service has been at the centre of policy and regulation since the call in the Reconstruction and Development Plan for "*universal affordable access for all*"[28] and the 1996 Telecommunications Act had as one of its foremost objects, to "*promote the universal and affordable provision of telecommunication ser*vices"[29]. This focus has been carried through in the Electronic Communications Act (EC Act), which aims to "*promote the universal provision of electronic communications networks and electronic communications services and connectivity for all*".[30]

Universal service and access policies are aimed at ensuring that all South Africans have access to a defined group of "basic" communications services. The definition however has inevitably evolved since the adoption of the 1996 Telecommunications White Paper. Whereas at that time, "basic" was a fixed telephone line in every household, in the digital era, access to the Internet and the services and content carried on this platform becomes necessary and is therefore considered 'basic'.

This definition of what basic communications services are essential to full participation in the economy and society will continue to change as technologies evolve – and there is a danger that new digital divides could emerge. It is essential therefore that the definition of what constitutes universal service and access responds to the changing environment and that policy aimed at addressing digital exclusion is sufficiently flexible.

[28] African National Congress, (1994) Reconstruction and Development Programme, Section 2.8.4.
[29] RSA (1996) Telecommunications Act, Republic of South Africa, Pretoria, Section 2(a).
[30] RSA ((2005) Electronic Communications Act, Republic of South Africa, Pretoria, Section 2(c).

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It is important to emphasise in this regard that ensuring universal service and access to ICTs is not only a development objective. Access by everyone will also result in significant advantages to the market, including:

- Increased take up of connected devices;
- Increased demand for all services – voice and data – across market segments (residential, public and commercial) and in all areas of South Africa;
- Greater demand for higher quality broadband connections as users increasingly access more content via a range of services, networks and platforms.
- Increased demand by the public, business, academic and other sectors for reliable connectivity and higher bandwidth due to growth in the use of cloud-based services and an increase in the number of connected devices (the Internet of Things);
- Greater demand for mobility from institutions and individuals with uptake of new devices.

5.1.1 Background

Legislative and regulatory provisions put in place in South Africa since 1996 to ensure universal access include:

- **Universal Service Obligations:** The regulator has the power to impose universal service and universal access obligations on designated licensees. ICASA completed a review of all obligations set in 2012 and in 2014 revised the USOs, including those associated with spectrum for mobile network operators. The EC Act was furthermore amended in 2014 to provide that ICASA may prescribe additional universal service obligations to designated licensees, in consultation with USAASA.
- **The Universal Service and Access Agency of South Africa** was established as a public entity to specifically address issues relating to universal service and access and manage a universal service fund. The EC Act provides for the functions and governance of the USAASA.[31] The 2014 EC Act amendment responded to the governance challenges that had been faced by the Agency by strengthening provisions in relation to USAASA's operations, performance and governance.
- **Funding:** A development fund, the Universal Service and Access Fund (USAF) has been established to provide support to universal service projects. It is managed by USAASA and is funded from levies payable by operators. The regulator set the levy for licensees at 0, 2% of annual turnover (less MDDA contributions for broadcast licensees) and channels contributions from licensees through to National Treasury.
- **e-Rate:** Legislation also provides for a discount of at least 50 per cent on Internet services provided to public health establishments, schools, colleges, public further education and training institutions and higher education institutions. The regulator has prescribed E-Rate Regulations (ICASA, 2009). The 2014 EC Amendment Act sought to strengthen the e-rate by amongst other things clarifying the structure of the discount which is applicable to call charges, facilities and connectivity. It also provided for USAASA to secure the e-rate on behalf of eligible institutions by paying internet charges on their behalf.

[31] RSA ((2005) Electronic Communications Act, Republic of South Africa, Pretoria, Chapter 14.

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5.1.2 Challenges

A range of challenges with the framework in place at the time of developing this White Paper were highlighted during the review process. The major issues raised are summarised below.

- **The Digital Divide persists - unequal access to ICT services**

As highlighted in Chapter Three ("Measuring Progress"), while a high percentage of the population across all income groups and parts of South Africa have cell-phones and therefore mobile voice services, access to the Internet, although growing, is still limited. The 2015 South African Advertising Research Foundation (SAARF) and All Media Products Survey (AMPS), shows that 89% of the adult population (15+) had cell-phone access in the period up to June 2015 – but the majority of South Africans still did not have any access to the Internet. There are stark differences in access between the poorest segments of the population (lowest LSMs) and more affluent people (LSM 8-10).

- **Outdated definitions**

One of the core challenges of the existing universal service and access framework is that it has not adapted sufficiently to convergence and technological changes. So while access to voice services has increased through mobile telephony, the framework and definitions for universal service and access have not sufficiently addressed the need to extend definitions to cover access to high quality broadband.

- **Overemphasis on subsidising network extension**

The approach to universal service and access funding has focused on extending infrastructure and has not, for example, covered subsidies for special categories of end users including persons with disabilities, or those that cannot afford access. Neither has support been made available to ensure people have the skills to utilise ICTs or to ensure the services and content available are relevant to all users. As highlighted in Chapter Three ("Measuring Progress"), StatsSA's General Household Survey results cites "lack of skills/confidence" and "lack of interest/no need" as the two primary reasons given by respondents for not having Internet access in their homes.

"*SA Connect: The National Broadband Plan*" also emphasises the need to provide funding support for both supply and demand-side interventions. It is also noted that many of the submissions from stakeholders during the ICT Policy Review Process stated that the Universal Service and Access Fund itself has been ineffective and had failed to disburse funds on any significant scale

- **Duplication and lack of alignment in institutional framework and roles**

Unclear and contradictory roles and responsibilities between government, the regulator and the agency established to focus on universal access also emerged as one of the key challenges with the framework put in place in 1996. All stakeholders that made comments on this through the policy review process stressed that it is crucial that any new policy streamline the processes and decisively resolve overlaps.

Universal service policy, for example, is rightly the responsibility of the Ministry, however elements of the policy-making function are shared – i.e. recommendations on the definition of needy persons rests with the Universal Service and Access Fund and the definition of underserviced areas is the responsibility of the regulator. In addition, the universal service fund levy is set and collected by the regulator and then passed on to Treasury although its use is defined by the USAF.

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5.2 Goal

The ultimate goal of this section of the White Paper is to ensure everyone, regardless of who they are, where they live or their social or economic standing, can benefit from the opportunities offered by ICTs either on an individual or shared basis. Achieving this will require both competitive private sector investment and appropriate relevant targeted public intervention to address market failure which is evidenced by the true access gap and smart subsidy zones.

5.3 Objectives

The objectives of this refined universal service and access framework include:

- To put in place targeted and effective interventions to address market failure and ensure access by everyone across the country to a range of communications platforms, networks, services and content.
- To set out the framework and process to develop clear definitions and targets for universal service, universal access and related concepts.
- To introduce a flexible evidence-based framework to respond to changes in technology and ensure new digital divides do not emerge.
- To address both supply and demand side obstacles to achieving universal service and access.
- To establish new innovative mechanisms to blend private and government funding and support for universal service and access, in line with recommendations in South Africa Connect.
- To improve the framework for universal service obligations on licensees to ensure that obligations are clearly defined, robust, proportionate to market share and enforceable.
- To outline clear and distinct roles for all stakeholders in achieving targets including the roles of government, the Ministry, sector regulator, development funding agency and operators in extending access to all.

5.4 Principles

The principles that will be used to set the definitions of universal service and access, determine realistic targets for addressing gaps and define what "basic services" are essential will be based on an assessment of the following principles:

- **Availability** of networks and coverage;
- **Affordability** including the ability to pay for access to infrastructure, networks, devices and services;
- **Accessibility** and the ability of all people to use and access services regardless of education, disability, age, gender etc.
- **Awareness** by users and potential users of what is available and the benefits of these;
- **Ability** of different groups of people and individuals to not only access services and acquire information and data but also to use the information and data to enhance the quality of their lives (i.e. digital literacy).
- **Quality of service:** Services provided should be of good quality and acceptable standards

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5.5 Interventions on Universal Service and Access

The different interventions adopted by Government to address the universal service and access gaps in South Africa are aimed at holistically addressing all the challenges identified above.

5.5.1 Roles and Responsibilities

The ICT Policy Review Panel recommended that the Universal Service and Access Agency of South Africa (USAASA) be dissolved and the existing Universal Service and Access Fund be transformed into a stand-alone funding agency to support universal service and access. The Panel further proposed that the roles and responsibilities of the funding agency, regulator and the policy-maker be clarified.

This is in line with Government's commitment to streamline roles and responsibilities of different entities to increase efficiency and public value for public resources.

In line with this, the policy making, regulatory and fund management responsibilities will be separated and allocated as follows:

- Going forward, the Ministry will be responsible for formulating policy approaches to universal service and access to communications, including defining this concept in policy and legislation, setting the objectives for policy, broadly outlining the process of reviewing the approach adopted and broadly outlining universal service and setting targets and criteria for this. Thus, all policy-related responsibilities currently resting with USAASA and the regulator will be transferred to the Minister.
- Regulatory-related functions currently allocated to USAASA will be transferred to the regulator. Included in these regulatory functions will be the licence conditions to advance universal service and access, the monitoring of the roll-out of networks and services and the enforcement of the license conditions.
- USAASA will be dissolved and the USAF will be transformed into a new Digital-Development Fund (Digital-DF) responsible for providing support to achieve the objectives set below.

5.5.2 Funding universal service and access

Government has considered how to address the challenges identified above with the existing universal service and access fund (Section 5.1.2), while revising the approach to accommodate the new needs arising from convergence. As indicated the USAF will be replaced by a Digital Development Fund (Digital -DF). This is in line with the National Broadband Policy, SA Connect, position, which states that "*new innovative ways….to fund not only infrastructure rollout, but also critical content development and the provision of public services online"* are necessary if its targets for broadband access for all by 2020 are to be realised.[32]

- The Digital-DF will be a distinct fund established by and accountable to the Minister of Telecommunications and Postal Services.
- It will provide support for both infrastructure and demand stimulation projects and programmes, including those relating to digital literacy and awareness, and will be funded through private sector levies, donor funding and new incremental state funding. It will thus serve as a "clearing house" and collection point for funding from different sources.

[32] DTPS, "South Africa Connect: Creating Opportunities, Ensuring Inclusion, South Africa's Broadband Policy", 20 November 2013, page 22

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- The primary focus of the Fund will be universal *access* projects. However, the Digital-DF will also provide universal *service* subsidies for members of identified segments of society.
- Licensees providing services in the information and communications sector will be required to make contributions.
- Beneficiaries of the Fund may include players across the ICT value chain, including broadcasting.
- Legislation will be amended in line with this White Paper and will outline the broad focus of the Fund but will not detail what can and cannot be supported. This will allow for increased discretion in the disbursement of funding based on an ongoing evaluation of needs. The accounting authority of the Fund will be tasked with developing **a** Fund Manual and criteria for support for the upcoming period for final approval by the Minister of Telecommunications and Postal Services. As is the case with fund manuals globally, this would include:
  - Information on types of support and grants available;
  - What would and would not be supported;
  - How, when and where to apply for support and an outline of the grant-making/support cycle;
  - Information on reporting and other requirements and roles and responsibilities of the Fund and of beneficiaries.
- The Board will also be required to develop an annual plan for support, taking into account research into universal service and access needs and the Access Gap, the mandate of the Fund, as well as assessments of the impact of support previously provided. The Digital-DF should develop this plan in consultation with beneficiaries/potential beneficiaries, funding partners and other relevant stakeholders and present this for final approval by the Minister.
- The focus of the Fund will include:
  - Extension of infrastructure;
  - End user and equipment subsidies to support access to a range of converged ICT applications and services for designated user groups, such as persons with disabilities and those that cannot afford such access;
  - Supporting digital literacy and skill development where necessary;
  - Funding to extend access to digital government services, including e-health and e-education programmes. This could include support for extending access through public "hot spots" via public entities such as the South African Post Office ;
  - Support for innovative use by SMMEs of ICTs to improve productivity, sustainability and competitiveness;
- Ensuring accountability to the public and funders will be paramount in finalising the governance arrangements and structure of the Digital-DF and the new entity will be required to provide detailed annual narrative and audited financial reports. Mechanisms will be put in place to ensure efficient management of the fund and limit the amount spent on administration of the fund, while ensuring effective monitoring of use of support provided.

The extended scope of the Fund will require increased funding from that provided to the USAF. As stated, a public-private funding mix will support this. Existing government support for universal service and access will be aggregated and channelled through the Digital-DF so that its impact can be maximised. Mechanisms will also be put in place to increase private funding and the current limit of one per cent of turnover of licensees provided for in the EC Act (Section 89(a)) will be replaced and

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the law should state that the levy will be *at least one per cent*. This increase is consistent with international best practice and with the shift in approach by government to relying more, although not exclusively, on the Digital-DF to fill universal service gaps than obligations. Obligations may also be used from time to time; however, the primary means of addressing the market access gap shall be through the use of the Fund.

The Minister will retain responsibility for setting and reviewing the Fund levy – taking into account the funding criteria and needs set, any obligations imposed on licensees (see above) and other taxes and fees paid by licensees. The Fund will be developed and managed in line with PFMA provisions.

5.5.3 Universal service and access priorities

Government recognises that achieving universal access in a connected digital society is not a static target and that the definitions and framework will need to be continuously reviewed to ensure new digital divides do not emerge as new technologies and services become available. This will include interventions focussed on the following:

- **Increasing coverage to rural, remote and underserviced areas**

The costs of rolling out networks and services increase where there are lower returns on investment (e.g. poorer communities and those that are less populated). Often, access to and affordability of the devices necessary to use these services is also a challenge in these areas, and digital astuteness, skills and awareness of the benefits of services affected. The approaches adopted to extend network coverage across the country are outlined in detail in Chapter Seven of this White Paper.

Government supports the use of universal service funds to address the infrastructure access gaps of the country, noting that these gaps will evolve as technology changes. While technology neutrality is a key principle, Government is also mindful that a technology divide should not be created – users across the country should have access to the same types of networks with similar quality and speeds to enable them to participate equally in a digital South Africa.

Any funding or other support provided to support universal service and access must therefore include strategies to increase the geographical reach of networks. The strategy and implementation plan must include criteria for eligibility, how underserviced areas should be identified and what will be supported. Any subsidy scheme should be based on a “least-cost” principle and be conducted through fair and transparent competitive bidding processes.

- **Digital inclusion by all segments of society**

In line with South Africa Connect, any mechanisms or systems put in place to provide support for universal service and access will also address the ‘people side’ (i.e. demand side) and will thus promote access to and the use of ICTs by all potential end users. The priorities in this regard will be support for persons with disabilities, public institutions fulfilling specific pubic needs, the poor and digital literacy programmes.

Persons with disabilities have particular challenges in accessing communications services, with the difficulties they experience differing dependent on the nature of their disability. For example, mechanisms and devices to extend access to those with hearing difficulties differ from those needed by persons with visual challenges. Older users often have similar challenges. The Digital -DF must develop a strategy to provide support for users with disabilities which includes eligibility criteria, the manner of application and the detailed definition of the subsidisation scheme

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People with limited or no income require targeted interventions to make ICTs affordable for them. Where regulatory interventions and competition fail to bring prices down sufficiently to meet the needs of those with limited or no income, the Government will intervene and provide end user subsidies through monies collected for the Digital-DF.

Public institutions fulfilling specific public needs (e.g. schools, clinics and hospitals, police stations, etc.) have important roles to play in meeting citizens' needs in a digital society. Due to their central roles in communities, they can be key vehicles for the delivery of shared ICT services. If digital government, e-health, e-education and other digital public service objectives are to be met, certain public offices, clinics and hospitals, schools and educational institutions will potentially require higher bandwidth and more robust, reliable and affordable access. Once their particular baseline requirements have been established (which too could evolve over time), achievement of this will need constant evaluation.

Similarly, emergency and other services might have specific needs which will need to be addressed.

Subsidies for such entities might also include obligations to extend access to others. In many countries, connecting a school is often the first step to connecting a community – and schools that have been subsidised are given obligations to make the funded ICT services available to the community on weekends or after hours.

Government will therefore promote the use of subsidies from the Digital-DF for the subsidisation of ICT access for public institutions fulfilling specific public needs. At present, the SA Connect priority areas of schools and clinics will be upheld, though the list of which public institutions are to be included in this may be updated in future.

The e-rate that is currently in place and covers educational and health institutions, will be phased out in its current form in order to be replaced by the g-rate (government rate), which all approved public institutions fulfilling public needs will have access to through Digital-DF's development of a programme for subsidising public institutions. The Digital-DF should provide the public notice of how it intends to phase out the e-rate to ensure smooth transitioning of existing beneficiaries to the new programme. The Agency established to manage these funds will be required to develop a programme for the g-rate which includes the eligibility criteria, the manner of application and the detailed definition of the g-rate scheme.

Digital literacy: Access without literacy will not address the digital divide. With the evolution of technology, the needs of users to effectively exploit the technology have changed and **awareness and ability** are now key factors that affect access. Interventions will thus need to be made to increase digital literacy, particularly by potential users of broadband in rural and low-income communities. Thus a digital literacy training and skills development component needs to be incorporated into fund projects so that a lack of digital literacy and awareness does not become a barrier to the uptake and usage of broadband in communities. In order to increase the impact of digital literacy interventions and to increase their sustainability and accountability, they should be targeted at the communities and channelled via community institutions such as libraries and schools, rather than operators.

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The Digital-DF must ensure transparency in the implementation of demand side subsidies and will be required to define the eligibility criteria, the manner of application and the detailed definition of the various demand side subsidy programmes.

5.5.4 Types of Services

One of the goals of this White Paper is 'broadband for all'. The definition of broadband will evolve as technology evolves, and the speeds and quality in particular will change. Government will ensure the provision of affordable, high speed, reliable and high quality internet access to all in the country regardless of their geographic location or socio-economic position.

In line with the approach taken in SA Connect, the minimum speeds and quality will be reviewed from time to time and confirmed by the regulator, with the approval of the Minister. **This approach allows for the flexibility necessary to adapt definitions and criteria in response to the changing environment.**

5.5.5 Universal Service Obligations

Universal service obligations (USOs) are a widely used tool to promote the availability of infrastructure and services to all citizens. In most countries, including South Africa, USOs initially focused on facilitating access to basic voice services. This has changed overtime and it is now necessary to incorporate broadband connectivity in USO targets.

Although access to voice services has increased substantially in South Africa with the spread and uptake of mobile services, the policy review process leading up to this White Paper reinforced challenges identified in the SA Connect broadband policy in relation to the USO framework including the regulator's failure to enforce USOs and the effectiveness, appropriateness and continued relevance of these.

To address this, the USO framework will incorporate access to broadband and this policy requires that the sector regulator regularly reassess obligations put in place to ensure alignment with definitions for universal service and access set by the Minister. In addition the sector regulator will be tasked with reviewing obligations in consultation with stakeholders at least every five years. The review should include an assessment of:

- The appropriateness of target levels set in USOs;
- The timelines set for achieving such targets;
- The level of service to be provided; and
- Mechanisms to enforce compliance, including reporting frameworks.

The DTPS will further work together with the sector regular to move towards a "pay or play" regime, in terms of which licensees will either pay to the Fund, or play in terms of rolling out universal service obligations. This regime will include explicit criteria for the translation of obligations into equivalent monetary contributions to the Digital-DF. Over the medium term, licensees will be encouraged to make financial contributions to the Fund rather than take on universal service obligations. This will enable a more streamlined and coordinated approach to delivering universal service and access projects across the country. It will also allow a more targeted approach and enable better monitoring and evaluation and measurement of achievements compared to the current approach of several fragmented obligations carried out by multiple parties.

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5.5.6 Addressing the specific needs of persons with disabilities

The ICT Policy Review Panel recommended that the policy framework provide for specific interventions to address the needs of persons with disabilities and remove definitions in law for "needy persons".

The UN Convention on the Rights of Persons with Disabilities definition of "persons with disabilities" will be used by the DTPS, regulator and Digital-DF in developing specific interventions. Persons with disabilities will thus include those with long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers hinder their full and effective use of ICT devices, services and technologies on an equal basis with others.

In addition to the Digital-DF providing support for persons with disabilities, their needs will be considered by the Minister in assessing the access gap and setting universal service and access definitions and targets.

Finally, in order to ensure a holistic approach and alignment, the sector regulator will consider the needs of persons with disabilities when setting obligations on licensees. It will also ensure that universal design requirements are incorporated into any equipment and device standards set.

5.6 Quality of service Interventions

Quality of service is a key element of universal access, especially universal access to broadband. In order to guarantee adequate quality of service for all users, the regulator must develop comprehensive quality of service standards across the value chains of all markets and market segments. It is noted that bad quality of service has a greater impact on users with disabilities who need consistent, high quality broadband and content services to meet their basic needs.

The standards should be benchmarked with the guidelines issued by the International Telecommunications Union (ITU) as well as best practice in other jurisdictions. The standards must be well publicised so that users are aware of what to expect, and how to complain to address inadequate quality.

The regulator must set out quality of service standards for each category of licensees. These can be progressive (i.e. the standards indicate increased requirements over time) or set for a period. Either way, they should be regularly reviewed so that they are updated as technologies change. Issues to be included in such standards include:

- The defined level of technical quality (e.g., call services must provide a set level of technical quality – e.g. call quality, broadband speed, success rates etc.).
- Time frames for installation: the length of time it should take to install a service.
- Standards to ensure services are reliable and robust (what are acceptable fault rates).
- The level of customer service to be provided (how effectively complaints are handled, length of time to lay a complaint etc.); and
- Minimum standards to meet the needs of users with disabilities.

Users of services should be made aware of these standards through awareness-raising campaigns by the regulator and the operator/service provider and informed of how to complain to address poor quality of service. The regulator must set obligations to ensure that licensees do adequately inform users of these.

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5.7 Consumer Protection

Specific rules on user/consumer protection must be set and regularly reviewed. These should consider the different categories of users including both individuals (from all over South Africa and of different levels of ability, income levels, ages and access to the means to complain) and institutions (e.g. public, private, academic, non-governmental and community-based). Specific standards must be set to ensure quality of emergency services. The framework should also recognise that at times, licensees are consumers/users of each other's services e.g. wholesale customers of some any open access networks.

In reviewing the framework to ensure quality of service and consumer protection, the regulator must also set out rules and standards to ensure that licensees provide understandable and transparent information so that users can make an informed choice about service providers. This includes:

- Accurate, understandable and comparable information at the point of sale that enables customers to compare different services.
- Rules requiring service providers to facilitate the right of customers to complain about any alleged breach of quality of service standards including compelling all providers to inform consumers of how to complain.
- Rules to be put in place requiring clarity before signing up with any provider on levels of service that potential customers can expect.

Quality of service licence conditions/regulations will need to be regularly reviewed given new issues will emerge as technologies and services change.

5.7.1 Enforcement

The regulator should work with the National Consumer Commission ("the NCC") to ensure that consumer related issues in the ICT sector are dealt with comprehensively. A coordinated approach will limit forum shopping, and clarify information for consumers. It is noted that the regulator and the NCC reached an agreement in July 2015 outlining their complementary roles in handling user complaints. In terms of this, the NCC deals with complaints about contracts, misrepresentation, bait marketing, faulty handsets, and call limits, while ICASA handles concerns around data, international roaming, pricing and quality of network/service.[33]

[33] http://www.thencc.gov.za/sites/default/files/speeches/intorductory%20remarks_commissioner___media%20briefing_____100715.pdf

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6. Innovation and fair competition

The introduction of an open access regime in this White Paper (see Chapter Nine) shifts the focus to a large extent to service-based competition rather than facilities-based competition. The previous chapter focused on development support to address the "true" ICT access gap (where ongoing support to ensure access to ICTs is necessary) and the "smart subsidy zone" (areas and/or communities which require a once off subsidy to get access)[34]. This chapter looks at the role of robust and fair competition as another means to facilitate universal service and access.

Both *ex ante* and *post ante* competition interventions can play a crucial role in limiting the digital divide through addressing market inefficiencies, promoting investment in the ICT sector and facilitating innovation. Interventions to promote fair competition assist in addressing "the market efficiency gap" - those areas/communities not reached by ICT networks/services but where it is commercially feasible to provide services.

6.1 Context

Like in other countries, South Africa's policy and legislative framework includes both *ex ante* and *ex post* competition regulation. Legislation requires that the sector regulator and the competition authorities develop a Memorandum of Understanding (MOU) outlining how they will address any overlapping mandates. This is aimed at enhancing certainty and limiting forum shopping.

During the consultation prior to adoption of this policy paper, many stakeholders blamed ineffective *ex ante* competition regulation as one of the key reasons that South Africa has fallen behind its peers in extending affordable, quality communications services to all. It was highlighted that while the sector regulator is empowered to conduct market reviews and introduce pro-competitive measures to address unfair competition, it had only conducted two market reviews over a ten year period[35]. Many reasons were put forward for this failure, including a lack of capacity and resources and overly burdensome legislative provisions.

6.1.1 Challenges

Digitisation, convergence and changing technologies inevitably affect the market structure and therefore the framework to facilitate fair competition. For example, in the past most users bought different services (e.g. telephony and Internet access) separately from different providers. With convergence, it is possible to offer such services over the same platforms and therefore for providers to bundle data and call services together.

Market definitions may also change as services that were previously distinct become increasingly substitutable. Mobile telephony can substitute for fixed line services and provide access to broadband, and Over the Top (OTT) Internet driven applications provide messaging and/or voice (such as WhatsApp) services.[36]

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[34] See Figure One: Access Gap Analysis in previous Chapter.

[35] It finalised a market review of Wholesale Mobile Call Terminations (or Interconnection) and initiated a review of Broadcasting Transmission Services. The review of Broadcasting Transmission Services was not completed.

[36] In South Africa current limited access to affordable and reliable broadband restricts substitution for many users but this is likely to change over time.

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This changing environment could result in some users having a greater choice of service and therefore raises the possibility of relaxing certain *ex ante* competition interventions. Experiences in other countries, however, indicate that new competition concerns are likely to arise as, for example, increased bundling of content services (e.g. video-on-demand services bundled with traditional telecommunications services) can lead to higher prices and/or make it difficult for users to switch providers as content becomes a key differentiator between different operators. Vertical and horizontal integration between content and telecommunications providers has also been raised as an issue in some other jurisdictions as this can potentially limit entry into the market by new entities and harm users if market power is abused.[37]

Technological advancement is likely therefore to require more nuanced, proactive and informed *ex ante* competition regulation rather than a shift to *ex post* regulation. This will necessitate regular reviews of fair competition in individual markets and also require ongoing assessment of the relevance of traditional market definitions, taking into account substitution and new services. The interests of users/consumers must be paramount in weighing up options and determining if competition related interventions remain relevant and/or necessary.

6.2 Objectives

The key objectives of this policy framework on competition related issues are to:

- Encourage fair and sustainable competition to ensure all users have access to a choice of affordable services that meet their specific needs.
- Promote certainty about the competition regulatory framework and the roles and responsibilities of each regulator;
- Where necessary, put in place proportionate remedies that address the needs of users and promote innovation, investment, affordability and quality of service;
- Ensure all users have sufficient comparable information about the different offerings available to them to make an informed choice about which to access;
- Ensure users can switch providers easily;
- Facilitate competition and stop anti-competitive practices to allow competitors (including potential new services and providers) access to users;
- Ensure responsive and effective *ex ante* regulation where appropriate and relevant, based on regular evidence-informed reviews by the regulator of potential bottlenecks, and the impact of existing pro-competitive measures.

6.3 Interventions

The approach adopted to fulfil the defined objectives is multi-faceted in order to address the challenges faced in the past while considering potential new future impediments to fair competition.

6.3.1 Market Reviews

- In the immediate to short term, the regulator must prescribe a list of the markets and market segments (taking into account the new open access market structure adopted in this White Paper - *see Chapter 9*) and complete market review analyses across all identified

[37] See, for example, the Canadian Radio-Television and Telecommunications Commission's "Communications monitoring report", 2015, which indicates increasing consolidation between telecommunications companies and broadcasting content distributors.

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markets. The market reviews should consider the current impact of convergence on traditional markets and likely trends in future to enable a forward-looking approach. The analysis must be aligned with international best practice; however international approaches to the conduct of market reviews should not impede the regulators' speedy resolution of identified competition problems in South Africa.

- For each market that has been defined, the regulator should define undue preference/conduct to enhance clarity and certainty, and must develop regulations outlining pro-competitive remedies that can be adopted and the circumstances in which they will be imposed.
- The regulator will be required thereafter to regularly review and update these market definitions to assess the impact of convergence on existing definitions (at least every three years). Those markets with the most significant impact on consumer pricing, quality of service and access by users to a choice of service should be prioritised. A long-term plan indicating the likely time frames for the different reviews should be published to facilitate certainty in the market.
- In addition to formal market reviews, the regulator will be required to regularly conduct and publish overviews of performance across all sectors. This must include assessment of affordability of services, accessibility to services, quality of service, impact on users of market trends and compliance by licensees with conditions and obligations set. The effects of convergence, including monitoring of the extent and impact of horizontal and vertical integration and bundling of services should be considered. Legislation will where necessary be amended to enable the regulator to collect the information necessary to evaluate market performance.
- Legislation will also be amended to align the definitions of concepts such as "essential facility" and "deemed open access network" with this White Paper. It will also be amended to clarify and streamline the process for conducting market reviews. The processes for conducting market reviews will be streamlined as necessary to address concerns raised regarding the unworkability of existing provisions, while ensuring best practice procedures are adhered to.
- The regulator should regularly advise the Minister of expected trends in the industry and the impact of policy and legislative provisions to allow these to be amended if necessary.
- The Regulator will be responsible for defining markets through periodic reviews. It will be required to consult with the Competition Commission before finalizing and publishing the market reports and reviews.

6.3.2 Strengthening capacity

As noted above, the policy review process has highlighted the need to strengthen the capacity of the sector regulator to function as an effective economic regulator. The ICT Policy Review Advisory Panel recommended that the sector regulator where necessary draw on the expertise of the competition authorities to assist it in defining and reviewing markets.

- Government will explicitly encourage more meaningful cooperation between the sector regulator and competition authorities, while ensuring that this in no way blurs the separation of roles between the Competition Commission and the sector regulator and *ex ante* and *ex post competition* regulation.

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- The sector regulator will remain solely responsible for defining and reviewing markets and designing relevant pro-competition remedies where necessary, but will be empowered to draw on the expertise of the competition authorities in doing so and required to consult with the competition regulator before concluding any guidelines, policies or rules in this regard.
- Legislation will set out the broad framework for this and stipulate that mechanisms to facilitate this be incorporated into a Memorandum of Cooperation which should be reviewed at least every three years. The existing Memorandum of Understanding between the regulator and the Competition Commission will need to be reviewed as soon as possible after the publication of this policy to take into account its intentions and interventions.

6.3.3 Mergers and acquisitions

Both the competition and sector specific regulators have responsibilities in relation to approval of horizontal and vertical mergers and acquisitions in the ICT sector. The competition authorities consider the impact on fair competition and public interest amongst some of their responsibilities, while the sector specific regulator looks at competition issues in addition to potential effect on the public interest objectives set for the sector. This can potentially result in delays in finalisation of mergers and/or acquisitions and contradictory decisions or conditions – both highly concerning outcomes in this era of convergence and consolidation.

Given this, this policy introduces increased coordination between the different regulators in considering mergers and acquisitions:

- The Memorandum of Cooperation between the two entities sets out the mechanisms to facilitate effective and efficient coordination and consultation between the entities when considering mergers and acquisitions in the sector.
- The Memorandum of Cooperation will further specify that there should be coordination and consultation to ensure alignment between decisions and conditions attached to approvals by the sector regulator and competition authorities.
- The revision of the existing Memorandum of Understanding between the regulator and the Competition Commission, pending amendments to legislation where necessary, should explicitly address cooperation in terms of reviewing mergers and acquisitions.

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7. ICTs and Convergence

7.1 Background

This Chapter outlines government's approach to issues pertaining to the convergence of technologies in order to ensure an integrated and coherent growth and development of the ICT sector in general. It is acknowledged that the micro organisation of the state created two government departments responsible for broadcasting on the one hand and telecommunications and postal matters on the other hand. In this regard, government must in developing the ICT policy, keep this principle of convergence in order to ensure that the policy environment is in line with industry trends and responsive to technological developments.

As indicated during the consultative stages of development of this policy, government notes that the communications sector is underpinned by convergence of networks and services that impact on how people and digital equipment communicate, interact and work together. Technological developments enable infrastructure that was previously used to deliver distinct services to carry a wide range of digital communications and has reduced the cost of deploying modern electronic communications networks. In addition, convergence at a user device level has lowered the cost that must be invested by users in order to access and receive services.

The phenomenon of convergence heralds, further, the introduction of a range of new innovative content services such as video-on-demand (VOD) and Over-The-Top (OTT) service. Therefore the networks should enable the provision of these services at any given point in time. This poses challenges to the existing regulatory regimes for electronic communications network and content services that must be resolved through relevant policies.

7.2 Policy Principles

7.2.1 Electronic Communications Network Services to enable the provision of electronic communications services.

Convergence underpins the overall government policy approach to Information and Communications Technologies (ICTs). This government policy position seeks to support and promote the emergence of networks and services that take full advantage of the Internet Protocol (IP) based Networks to deliver a range of diverse and innovative digital services. The principle of technological neutrality that has characterised the South African ICT policy and regulatory environment is retained and will be the corner stone of the evolution of the policy and regulatory approach to this.

The Electronic Communications Act No 36 of 2005 (EC Act) provided for the conversion of all broadcasting or telecommunications licences into Electronic Communications Network Services (ECNS), Electronic Communications Services (ECS) or Broadcasting Licences. In the Section on Licensing Framework, in this Integrated White Paper, these licensing categories are retained and it is recognised that specific obligations will be attached to each category recognising government's policy objectives for each sector.

In this regard, convergence and technological neutrality will ensure consistent regulation of all networks (including IP based networks), irrespective of the type of service/s they carry or whether they are owned and operated by telecommunications or broadcasting services. Convergence requires an increasingly integrated approach in areas like network regulation and spectrum licensing to achieve the objectives of fair competition.

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7.2.2 Separate Licences for Broadcasting and Electronic Communications Services Licences

Despite technological convergence, there are distinct policy imperatives and principles driving the regulatory approaches to broadcasting and telecommunications that must be taken into consideration in order to meet the diverse needs of South African citizens.

The advent of the Internet introduces new opportunities and challenges in relation to the dissemination of South African stories and reality, from a South African perspective and by South African creative talent. This globalising environment calls for concerted action by government and society to ensure that South African content is not marginalised on these platforms and that the vision set in the 1998 Broadcasting White Paper is advanced. Broadcasting activity and content provisioning will therefore continue to require a separate policy, regulatory and licensing framework that will enable regulatory interventions to ensure the display of South African content (including public interest content), music and creative arts in a wide range of genres and formats.

A new Broadcasting Policy Framework will be developed by government that will take into account the changed environment since the last Broadcasting White Paper was published. It will in detail deal with the policy and regulatory environments that will face any service provider that intends to offer content services.

As noted during the discussion stages of this policy process, convergence has resulted in the emergence of broadcast-like services that now need to be considered in the overall policy and regulatory schemes. To this end the Broadcasting and Content Policy Framework will deal with definitions of what constitutes “broadcasting”.

7.2.3 Open Internet will be accessed by all services

One of the reasons for the transformative role that the Internet has played, allowing for innovations that have disrupted traditional monopolies - is that it is “open”. No one entity or person controls it and the standards used are open – allowing anyone to develop services and applications and access users and audiences.

Technological changes however allow Internet intermediaries and broadband providers to “discriminate” against different types of services – promoting some by, for example, giving them a “fast lane” (for a fee, or aligned businesses for example) and slowing down or effectively blocking others. This could negatively affect a range of South African broadcasters, Internet based service providers and other content developers – and limit users access to a diverse range of content via the Internet.

The Integrated ICT White Paper therefore introduces a net neutrality framework to bar Internet intermediaries from acting as gate keepers while ensuring transparency for users. It specifies that all legal and lawful Internet traffic must be treated equally, without discrimination, restriction or interference, regardless of the sender, receiver, content, device, service, or application.

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7.3 Radio Frequency Spectrum Policy in support of the growth and development of the electronic communications services

The Integrated ICT White Paper includes a single spectrum policy addressing all spectrum policy related issues and objectives that cover all services using spectrum in the Republic.

Policy will continue to recognise that there is need for the allocation of adequate radio frequency spectrum to enable the provision of free to air and other broadcasting activities in recognition of the important role that broadcasting plays in fostering democracy. This will be achieved through the allocation and preservation of specific bands for broadcasting and audio visual services. These bands will be identified and allocated in the National Radio Frequency Plan.

In order to ease issues relating to the coordination of radio frequency matters, the policy proposes that the government through the responsible Minister acts as the custodian of the national frequency spectrum on behalf of the people of South Africa. It will also perform the international policy functions of signing country treaties with the International Telecommunications Union. In this regard, working in tandem with other Departments and public entities, it will be responsible for spectrum coordination with all role players that utilise the radio frequency spectrum as far as policy-making, planning and allocation functions to ensure alignment and coherence. The Minister will also be responsible for the coordination of the review and updating the National Radio Frequency Plan, within a year of each International Telecommunication Union ("ITU") World Radio Conference ("WRC").

The regulator will assign spectrum and issue licences in line with Government policy and based on the frequency plan that has been developed and approved by government. The regulator will, in order to effectively perform its spectrum management function that is limited to regulatory functions, also be responsible for spectrum monitoring, evaluation and auditing.

The ICT White Paper recognises that spectrum policy should also be linked closely with broadcasting policy objectives and therefore provides that the Minister of Telecommunication and Postal Services and Minister of Communications will work closely together. The Ministry of Communications is responsible for providing policy directives on the management of the radio spectrum for broadcasting and related broadcasting matters. The objective is to ensure that spectrum is used in a way that maximises its value for South Africans by supporting sustainable economic, social and cultural development.

7.4 Competition regulations will consider bundled services

The White Paper notes that traditional market definitions will need to be reviewed given that convergence will result in, for example, new OTT and other services increasingly substituting for traditional services. The bundling of content and carriage services by telecommunications and other network providers and horizontal and vertical integration across the Internet and ICT value chains are also highlighted as issues that regulators in other countries have increasingly been confronted with.

This requires an integrated approach to regulation across the network markets to limit forum shopping and this should be one of the key considerations of the economic regulator.

7.5 Economic Regulation

Given the different policy imperatives and objectives driving audio/ audio-visual content regulation and ICT regulation of networks and electronic communications services, and the need

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for holistic regulation across the Internet value chain (including domain name regulation and Internet governance), the White Paper proposes a new economic regulator of ICTs be established. The new regulator will incorporate the functions of .ZADNA and other functions from the existing regulator. It would also incorporate postal services regulation. This will facilitate decisive intervention by Government to achieve inclusive broadband roll-out targets and thus assist in meeting the objectives set for the ICT sector in the NDP and Nine-Point Plan. It will also facilitate the digitisation of government services and e-government.

Given that the current regulatory scheme in the country has a regulator that oversees both the economic and content regulations, albeit with serious challenges, a separate process will be undertaken to define the regulatory scheme pertaining to broadcasting and content services. The review of the White Paper on Broadcasting will consider the best approach to achieving objectives of broadcasting regulation, including if there will still be a need for a separate broadcasting regulator or if, given media convergence, there is a need for holistic regulation and classification across the media/content sector. Many countries are considering this issue, while recognising the need for separate regulatory policies for broadcasting and ICTs (e.g. separate directions in the European Union). In Australia, for example, a government convergence review proposed that the definition of broadcasting be extended to cover broadcasting-like content and recommended that a new "content" regulator be established incorporating the functions of their film and publications classification body and the broadcasting regulatory responsibilities of the Australian Communications and Media Authority (ACMA).

The separation of the economic and content regulation will also fulfil the requirement of Section 192 of the Constitution for independent broadcasting regulation while ensuring that government can fulfil its responsibility of ensuring public value for public resources such as spectrum.

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8. The Internet

"ICTs are the single most powerful tool we have to transform South Africa into a prosperous developed nation where poverty, inequality and unemployment are not an everyday reality… The question that all of you …should be asking should be how best can you be a part of this digital revolution…"

Minister of Telecommunications and Postal Services, Dr Siyabonga Cwele[38]

The Internet is disruptive by its very nature and has and will continue to impact in more and more ways on every aspect of people's lives. It will transform the way societies and economies work, including how citizens interact with governments and each other, how governments deliver services and how businesses transact. In relation to the sectors covered in this White Paper (the ICT and Postal Sectors), the Internet has, among other things:

- Created new opportunities for ICTs to facilitate social and economic transformation of society.
- Impacted on the business model of the postal sector and the South African Post Office by, for example, reducing the volume of letter mail as it is substituted by email. New opportunities for courier and parcel delivery services have been introduced with the growth of e-commerce.

Facilitating access by everyone to the opportunities offered by the Internet is in many ways therefore at the core of this White Paper. This Chapter focuses on Government's policy framework for maintaining the open Internet to maximise these possibilities. It also includes approaches to governance of the Internet at an international and national level and policies on managing and administering the Internet in line with the vision set in the United Nations World Summit on the Information Society (WSIS).

8.1 Context

The Internet (or "Net") is essentially a global network of millions of computers that communicate with each other – allowing users to access services, information and content as well as communicate with each other across the world. To access the Internet, a user needs an Internet connection and a device (e.g. a connected mobile phone, a tablet or computer). The World Wide Web (or "Web") is the virtual network of websites connected by hyperlinks. Websites are stored on computer servers on the Internet.

South Africa's domain name authority, .ZA Domain Name Authority or .zaDNA, is established through Chapter X of the Electronic Communications and Transactions Act (ECT Act) of 2002.

Minister of Telecommunications and Postal Services, Dr Siyabonga Cwele, Address: Telkom Graduation Ceremony, 02 October 2015

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8.1.1 Characteristics of the Internet

The Internet began in 1969 when the United States Defence Department created ARPAnet to allow military personnel to communicate with each other. It grew after it was opened up to commercial use in the 1990s and continues to grow and evolve as more people go "online" and devices to connect to the Internet become more accessible.

Several characteristics have facilitated the extraordinary growth in the Internet across the world:

- It is one global, decentralised network.
- It is based on open standards – allowing everyone to develop services and content.
- It has developed through collaboration between a wide-range of stakeholders.

8.1.2 The Internet value chain

The diagram below summarises the Internet value chain.

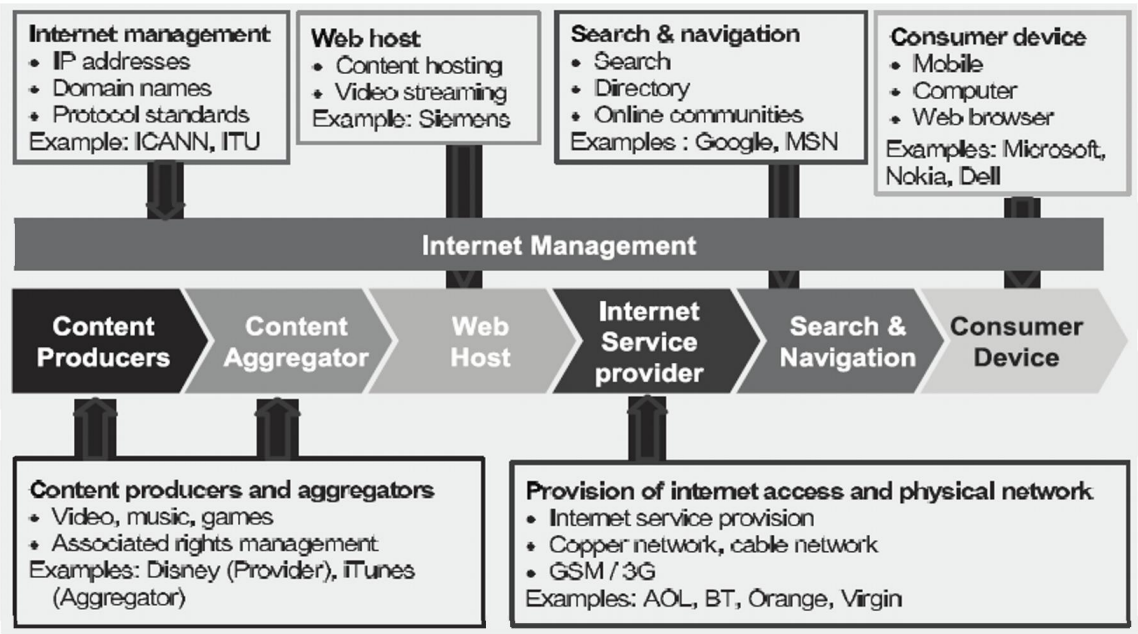

Figure 10: Internet value chain

This White Paper considers what interventions, if any, are necessary to stimulate inclusive growth across each part of this value chain (*see Chapter 12: Industry Growth)*. The policy positions outlined in this Chapter focus on maintaining the Open Internet to support the development of a vibrant, inclusive and local Internet community and economy. For this to be achieved, South Africa commits to supporting the development of local Internet-based enterprises, while investing in the development of local skills that can drive the development of the Internet for the benefit of the country as a whole and those who live in it.

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8.2 Principles of the Open Internet

Government recognises that the Internet is a global resource which enhances domestic socio-economic development. Given this, South Africa will choose the most relevant and enabling governance and administration frameworks at a local and international level.

The South African government is committed to the following key principles and approaches:

- In line with the WSIS Declaration, management of the Internet should be "*multilateral, transparent and democratic, with the full involvement of governments, the private sector, civil society and international organisations*".[39]
- All users must be able to legally access and share information and run and develop applications and services of their choice.
- All lawful and legal Internet traffic must be treated equally, without discrimination, restriction or interference, regardless of the sender, receiver, content, device, service, or application.
- Internet governance arrangements must respect and promote cultural and linguistic diversity.
- Any change in Internet governance arrangements, must not allow disruptions to the operational stability of the Internet.
- The Internet must remain a unified global network that is stable, secure, resilient, trustworthy, reliable, interconnected and accessible to all users across the world.
- The Internet must continue to be based on open standards to facilitate innovation and to allow everyone to participate equally in the global community.
- Users must have the same rights online as offline.

8.3 Net Neutrality

"Given that Internet services are run and maintained by private companies, the private sector has gained unprecedented influence over individuals' right to freedom of expression and access to information"

UN Special Rapporteur for freedom of expression[40]

The Internet has made it possible for anyone to share and create their own content, services, applications, ideas and innovations - and for citizens around the world to have access to these. This has lowered the barriers to entry into the economy and extended the rights of access to information and freedom of expression for everyone.

It is crucial that the Internet remains neutral and open if it is to continue to create opportunities for everyone to improve the quality of their lives. A crucial component of this is the introduction of a net neutrality framework to ensure that all lawful and legal Internet traffic is treated equally, without

[39] WSIS, Geneva, 2003

[40] UN Human Rights Council, "Report of the Special Rapporteur on the promotion and protection on the right to freedom of opinion and expression", General Assembly, May 2011, http://www2.ohchr.org/english/bodies/hrcouncil/docs/17session/A.HRC.17.27_en.pdf

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discrimination, restriction or interference, regardless of the sender, receiver, content, device, service, or application.

8.3.1 Context

Broadband providers and other Internet intermediaries can increasingly potentially control what content, services and applications people have easy access to through, for example, determining which websites load quickly or more slowly or blocking which services function well. Concerns have been raised in some countries that some intermediaries have, for example, abused their dominance by creating advantages for their own content (including video streaming services for example) and slowing or blocking access to that uploaded by competitors[41].

This fundamentally undermines the core principle underpinning the Internet – that users and not intermediaries determine what they access and view.

8.3.2 Objectives

The objectives of this net neutrality framework are:

- To promote the Internet as a platform for freedom of expression, access to information, innovation and economic growth;
- To protect the rights of users to freely access legal content, applications and services on the Internet and bar Internet intermediaries from unreasonably interfering with, or in any way disadvantaging, users' access to the Internet;
- To reinforce the right of government to protect citizens and deal with social and security problems associated with the internet;
- To bar the blocking , throttling or other unfair treatment of lawful Internet content, services and applications by Internet intermediaries;
- To bar prioritisation of some traffic over other traffic in exchange for payment or benefit of any kind (including benefitting content from affiliates of intermediaries)
- To allow providers to put in place reasonable traffic management practices to enhance quality of service for users, while ensuring transparent and easily understandable information about such practices.

8.3.3 Interventions

Government is committed to promoting net neutrality to preserve the free Internet and pre-empt possible unfair treatment by intermediaries. In line with this commitment:

- The sector **regulator will be required to hold an inquiry** in consultation with the competition authorities into the extent to which regulatory intervention is required to uphold the principles of an Open Internet. This should include an assessment of whether any unfair discriminatory practices are likely to be used in future and a review of horizontal and vertical integration and concentration across the Internet value chain.
- The sector regulator will make proposals for the Minister's consideration based on this inquiry including recommendations on:

[41] Countries that have developed net neutrality policies and/or laws include Brazil, Chile, the Netherlands and the USA. The European Union has also set a framework for ensuring net neutrality across Europe.

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- Whether any changes to legislation will be required to reinforce net neutrality and if so what amendments will be necessary. This should include a general assessment of legislative provisions that may advantage certain players in the market.
- If the objectives will be best achieved through regulation, the introduction of guidelines and/or co-regulation or self-regulation.

- The sector regulator should consider in this inquiry:
  - If any standards might need to be set to define reasonable traffic management and fair discrimination.
  - If it will be necessary to introduce rules or guidelines on zero-rating, barring, throttling or paid prioritisation of traffic and if so what exclusions to this would be in the public interest (e.g. zero-rating of access to defined public interest content and services – *see Chapter 10*.)
  - How to ensure that traffic management policies put in place by Internet intermediaries are clear and transparent so that users can make informed choices about which services to use.

8.4 Hosting and data centres

South African Internet Service Providers (ISPs) provide hosting services in competition with one another and with international entities. Hosting includes the hosting of domain names, email, website and content. ISPs largely compete on bundled hosting products - with domain name registration typically included with hosting products.

8.4.1 Context

Other than the .zaDNA[42]-regulated annual wholesale domain name fees that ISPs pay to domain name registry operators, hosting prices are not regulated in South Africa. Experience internationally shows that consumers benefit from hosting prices not being regulated. There is also no geographical limitation on choosing ISPs – and, for example, a number of .ZA domain names and South African websites are hosted by foreign ISPs. This international competition has had a positive impact of making local ISPs become more price-competitive.

ISPs also provide high-capacity data management services through data centres. These are specialised, high-powered facilities consisting of multiple network servers that provide data storage, security and redundancy services to local and international businesses. South Africa currently has 11 data centres spread across Durban, Midrand, Johannesburg, Port Elizabeth and Cape Town (see diagram below). Data centres allow businesses to back up their data off-site both locally and internationally.

[42] .zaDNA is the South African regulator of the .za namespace

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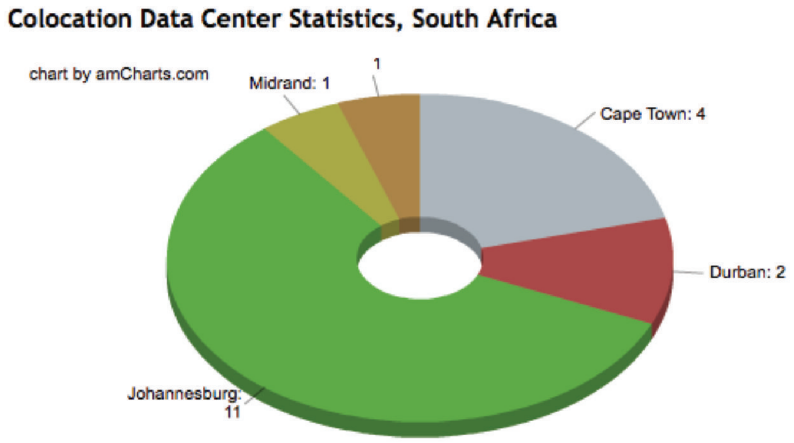

Source: datacentermap.com

8.4.1.1 Challenges

- Incidents of over pricing by ISPs have been noted from time to time due to some ISPs taking advantage of the limited awareness in South Africa about the dynamics of hosting.
- There is a need to address the concentration of data centres in Gauteng, KwaZulu-Natal and Western Cape. Encouraging data centre distribution across the country will also encourage geographic distribution of specialised IT skills.
- The ISP community substantially reflects past imbalances, and there is still a clear absence of players from previously disadvantaged backgrounds.

8.4.2 Interventions

- The sector regulator will be mandated to help educate the South African public about the dynamics of hosting, and regularly measure the growth of hosting awareness.
- Government will put in place measures to encourage the establishment of data centres in other geographic areas that can benefit from such facility. This will be done in collaboration with other stakeholders and will be part of a broader campaign to promote wider participation in the data centre market.
- Government will further support new data centre entrants by utilising their services.
- The sector regulator will be directed to develop and implement strategies to widen participation in the ISP market, including collaborating with other government entities to increase demand for services offered by new entrants to the ISP market.

8.5 Search and navigation

The global search market is largely dominated by Google, though other players with notable market share include Bing, Baidu and Yahoo. These search engines (with Baidu's exception) are popular in South Africa. There are also active topic and service-specific search engines e.g. booking.com and hotels.com. There are several South African search websites, but their market share is insignificant compared to global players.

In addition, the Internet browser market remains in the hands of international competitors, and South Africa does not play any active role in this area. Search engines normally generate revenue from indexing websites and paid-for ranking of websites and information.

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8.5.1 Challenges

South Africa remains largely a consumer of search engines and browser products. This presents economic losses and deprives South Africa of an opportunity to provide South Africa-specific content through such platforms.

8.5.2 Intervention

Government will facilitate development of South African search and browser applications that provide locally-oriented content. It will, for example, consider procuring ranking services on these platforms to develop and promote the local market.

8.6 Internet intermediary liability

An Internet intermediary is an entity which provides services that enable people to use the Internet. There are many different kinds of Internet intermediary, though these can be divided into two broad categories: conduits and hosts. Conduits are technical providers of internet access or transmission services. They do not interfere with content being transmitted other than for automatic, intermediate or transient storage need for transmission. Hosts are providers of content services e.g. online platforms, storage services, search engines, online payment systems, social media etc.

The Electronic Communications and Transactions Act (ECT Act) includes limitations on liability for ISPs under certain conditions, in recognition of the limited control such providers have over the content they carry. The law states that ISPs have limited liability if they are a member of an industry representative body recognised by the Minister and adhere to certain standards set.

8.6.1 Challenges

Limitations on the liability of Internet intermediaries for third party content carried by them is becoming an issue of increasing importance in Internet governance discussions given the need to protect the Open Internet.

The ICT Policy Review Panel noted that there are different provisions related to Internet Intermediary Liability being considered by different arms of government[43] and that it is crucial that a uniform approach is adopted across government. In addition, the current law (the ECT Act) focuses only on ISP's. Other intermediaries are not covered by this provision.

8.6.2 Intervention

Government will continue to endorse self-regulation by intermediaries through the recognition of industry bodies and effective self-regulation codes but will assess the effectiveness of this approach in relation to the objectives of this White Paper and reserves the right to intervene if necessary.

Current provisions in place will be reviewed to ensure alignment of approach on Internet Intermediary Liability across all laws in South Africa. This will include considering what other intermediaries should be covered by the limitation of liability.

[43] For example, the Film and Publications Board is considering a framework for limitation of ISP liability and procedures for take-down notices in relation to its mandate to protect children from exposure to harmful content.

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8.7 Internet Exchange Points (IXPs)

Internet exchange points (IXPs) are locations that allow separate networks to interconnect and exchange traffic with each other locally, rather than having to use expensive international or transnational backhaul facilities. Allowing two networks to connect directly, reduces connection costs, improves network performance and keeps "*local traffic local*". Emerging technologies such as the Internet of Things or Internet of Everything, where more and more products and services will connect with each other, will require an increasing number of IXPs.

8.7.1 Challenges

There are a number of challenges relating to IXPs:

- **Continental challenges:** Africa is currently paying overseas carriers to exchange continental traffic on its behalf. This is both costly and inefficient. An Africa IXP project has been established in collaboration with the International Telecommunications Union (ITU) and the African Union (AU) to address this. The overall aim is to provide affordable Internet access and connectivity through the development of national and regional Internet Exchange Points.
- **Regional challenges:** Similarly, there is a need to establish a Regional Internet Carrier (RIC)[44] and Regional IXP for SADC countries. The goals of the RIC and RIXP are to encourage peering between ISPs in SADC in order to keep regional traffic regional. This will reduce upstream traffic, reduce costs, increase speed and reduce latency for inter-country exchange of traffic.
- **National:** At the time of finalisation of this White Paper, there were six (6) IXPs in South Africa concentrated in economically active urban areas. This White Paper will result in more people across South Africa using digital services. There will therefore be a need to establish IXPs in other regions of South Africa.

8.7.2 Objectives

The objectives of policy interventions on IXPs are:

- To keep continental traffic continental, regional traffic regional and local traffic local;
- To ensure efficient Internet traffic management across the continent, the SADC region and within South Africa;
- To increase the speed of inter-country exchange of data;
- To reduce the costs associated with exchanging data between countries in Africa, the SADC region and within South Africa; and
- To facilitate peering between ISPs in South Africa.
- To encourage South African ISP's to peer in the SADC region

8.7.3 Interventions

- At a regional and continental level, South Africa will continue to support the regional and continental Internet Exchange project, in order to keep continental and regional traffic local.
- Nationally, Internet Service Providers (ISPs) will be mandated to peer at the exchange point in order to keep local traffic local. The sector regulator will be required to develop a regulatory framework to facilitate peering within two years of the publication of this White Paper.

[44] A Regional Internet Carrier (RIC) is "an Internet Service Provider (ISP) that spans more than one Internet Exchange Point (IXP) in different countries and/ or at least one national border".

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- Government will put in place measures to promote and facilitate the establishment of additional IXP's in provinces currently not covered in order to cater for SA future internet traffic demands. If necessary, Government will develop specific interventions to address market failure in this regard should this emerge.

8.8 Evolution of address protocols

Research conducted in the policy review process indicates that the numbering regime in place in South Africa is relatively clear and well managed. However, it is recognised that the regulation and management of numbering will becoming increasingly complex with the introduction of more communications services and the need for additional internet address capacity.

In order to communicate over the Internet, computers and other devices must have sender and receiver addresses. These numeric addresses are known as Internet Protocol addresses. Internet Protocol version 6 (IPv6) is the next-generation protocol replacing the current IPv4. It was developed in order to address the problem of IPv4 address exhaustion. IPv6 has more address space than IPv4 – thus providing a solution to the challenge of scarce address resources. IPv6 also has increased functionality and improved addresses.

8.8.1 Context

As the Internet continues to grow, the demand for unique addresses has and will continue to grow exponentially. The current address protocol should be able to provide billions of unique addresses for the foreseeable future but is likely to become gradually exhausted over time.

There is a need to create awareness about the importance of evolution of address protocols in South Africa and the benefits this will bring to the country.

8.8.2 Interventions

Government's primary responsibility is to ensure that South Africa's internet infrastructure is interoperable with the rest of the world regardless of the protocol and/or technology utilised. Given this, Government will facilitate the adoption of any latest Internet addressing protocol in a manner that ensures the operational stability of the Internet.

8.9 Electronic Numbering (ENUM)

Electronic Numbering (ENUM) is a technology protocol that allows the translation of normal telephone numbers into a format that can be used to store and retrieve Internet addressing information, which can in turn be used to route communications over the Internet. ENUM is especially suited to Voice over Internet Protocol (VoIP) applications and has the potential to assist in providing high-quality, end-to-end VoIP calls between different networks carried entirely over the Internet. This will become increasingly necessary with the expected growth and increased uptake of Over the Top (OTT) applications.

8.9.1 Challenges

No commercial ENUM deployments are currently in place in South Africa. The technology could potentially impact on South Africa's ability to intercept communications, regulate and ensure protection of personal data and consumer protection.

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8.9.2 Interventions

Policy must facilitate efficient management of the numbering resource and proactively address potential scarcity in the future. The sector regulator will therefore be required to conduct an inquiry into the impact of ENUM technology protocols.

While the deployment of ENUM may not necessarily require new regulatory approaches, this inquiry should assess whether this protocol will have an effect on issues such as telephone numbering policy, number portability, standardisation, competition and privacy and security.[45]

8.10 Emerging Issues and technologies

Technological developments are introducing new possibilities, opportunities and technologies all the time. It is crucial that South Africa is able to harness the potential of these to address social and economic development in the country. Any technological advances must further promote the principles of an open Internet, while protecting rights to privacy and security.

South Africa is committed to proactively exploring the impact of new technologies on the objectives set in this White Paper. Such new technologies include the Internet of Things, Cloud Computing and Digital Information Management applications.

8.10.1 The Internet of Things

The term the "Internet of Things" refers to connecting objects and devices (called "smart" objects or devices) over the Internet (including, for example, household appliances) allowing them to communicate with each other, with other applications or to people. In South Africa, one example of such devices is smart electricity meters being rolled out by some municipalities which allow utility companies to "read" meters remotely and use these to save energy.

In recent years there has been an increasing growth in the number of devices that are connected to each other and, for example, the number of Internet connected "things" surpassed the number of human beings in the world in 2011[46] and continues to grow.

It is important that South Africa develops a policy framework to harness the potential of IOT to meet South Africa's development goals.

8.10.1.1 Intervention

- South Africa will promote development of the Internet of Things and related products and services specific to local needs.
- Government will monitor developments in relation to the Internet of Things to assess whether it will be necessary to set standards or amend privacy and cybersecurity rules to address possible new challenges and encourage interoperability.

8.10.2 Cloud computing

Cloud computing involves the storing, processing and use of data on remotely located computers accessed over the Internet.

[45] Chapter 8 of this White Paper deals with the licensing framework for networks and services.
[46] In 2011 the number of connected devices was 12.5billion while the world population was estimated at about 7 billion people.

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Cloud computing has benefits for both the private, public and non-governmental sectors. It can, for example, lower barriers to entry and reduce costs for businesses, civil society organisations and government entities as it facilitates access to IT resources on-demand without the need for significant capital expenditure.

8.10.2.1 Interventions

- South Africa will develop initiatives to promote localisation data centres and to position South Africa as a data centre hub.
- Government will monitor developments in relation to cloud computing on an ongoing basis to assess if it will be necessary to set out specific rules, standards, regulations and/or guidelines on cloud computing to ensure the objective of an open Internet accessible to everyone is fulfilled.

8.10.3 Digital Object Architecture (DOA)

The Internet provides global connectivity among computers, devices and networks of all kinds. From the mid 1980's, it became apparent that information management was a specialised function that requires a platform that uses the existing Internet infrastructure, but offers new capabilities that are likely be used widely. Such capabilities may include digitisation of data that is typically not found on the Internet to support digital government services and enable retention of data over longer periods than the World Wide Web based Internet allows.

South Africa has not, however, to date explored additional capabilities of the Internet that can support more sustainable data management and digitisation thereof. In addition, government has different information management initiatives in place that are not necessarily interoperable or effectively connected to each other. There is therefore a need for centralised coordination to ensure interoperability.

8.10.3.1 Intervention

Government will embrace innovative ways of using the Internet and may develop relevant standards, policies and regulations relating to Digital Object Architecture.

8.11 Internet Governance

The UN sponsored World Summit on the Information Society (WSIS) defines Internet governance as "*the development and application by governments, the private sector and civil society, in their respective roles, of shared principles, norms, rules, decision-making procedures, and programmes that shape the evolution and use of the Internet*".[47]

WSIS sets out the following principle for Internet governance:

> *"Given the global nature of the Internet, its governance includes mechanisms to reach international consensus on governance issues (including, for example, technical standards) among the wide range of stakeholders involved (including governments, civil society organisations, technical experts, academics and the private sector[48]).*

It recognises that complementary national governance frameworks are necessary to resolve issues at a national level.

[47] WSIS, Tunis, 2005

[48] Private sector stakeholders include network and server operators, domain name registrars, registries, search engines, IP address and standards organisations and Internet Service Providers

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8.11.1 International Internet Governance

Due to the nature of the Internet's evolution, global governance of the Internet developed outside of the traditional intergovernmental framework. This has led to questions about the ongoing appropriateness of the structures that have developed. According to netdialogue.org, more than a dozen intergovernmental organisations are currently involved in deciding rules – without any coordination between them.[49]

In the early 2000's, Internet governance started to be discussed more seriously and was one of the key issues at the World Summit on the Information Society (WSIS), held in two stages under the United Nations (in Geneva in December 2003 and in Tunis in November 2005). The Tunis Agenda for the Information Society stipulated in relation to the governance of the Internet that governments should be given the opportunity to play their rightful role in relation to international Internet public policy issues.

In response to this decision, the Tunis meeting requested the UN secretary general to convene a new forum for multi-stakeholder dialogue to try and address the identified need for increased governance harmonisation. The Internet Governance Forum (IGF) was established, supported by the United Nations. The IGF is a multi-stakeholder forum for discussion of public policy matters related to the Internet. It, however, operates as a discussion forum and has no decision-making powers.

Governments are also represented on the International Telecommunications Union Council Working Group on Internet-related Public Policy Issues (CWG-Internet), established by the ITU in 2010. This Working Group is limited to Member States but consults openly with all relevant stakeholders. It is mandated to identify, study, and develop public policy matters related to the Internet. The issue of the role of governments in Internet governance and public policy development is one of the key issues being discussed within this forum. The issue is as yet unresolved.

The Internet is administered and managed by the Internet Corporation for Assigned Names and Numbers (ICANN) with oversight of the United States Government.

8.11.1.1 Challenges

There are several key concerns about the governance model in place:

- Governments generally have limited influence on global Internet governance issues and are thus not able to fulfil their responsibilities as custodians of public policy in their respective countries.
- Not all governments have equal influence over Internet governance issues - in contravention of the principles of multilateral international policy formulation.
- Private sector business interests, predominantly based in the US and/or the north, tend to dominate decision-making, often silencing the voices of public policy advocates, including governments. Governments play only an advisory role.
- There is a need to strengthen democratic decision making and transparency in the global Internet Governance framework.
- While the Internet Governance Forum (IGF) was created as a multi-stakeholder discussion forum, it has no decision-making powers.

[49] These include the International Telecommunications Union, the International Monetary Fund, the Organisation for Economic Co-operation and Development, ICANN and the World Wide Web Consortium

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8.11.1.2 Policy Goal

The ultimate goal of this policy framework on international Internet governance is to ensure that the Internet is governed in the public interest, taking account of the diverse needs of all countries across the world and in line with the principles of the Open Internet.

8.11.1.3 Objectives

The objectives of South Africa's policy positions on international governance of the Internet are to:

- Ensure that international governance and administration mechanisms, processes and institutions reinforce the overarching principles of the Open Internet (*as outlined above*).
- Reinforce a multilateral approach to Internet governance in line with the principles set by the United Nations.
- Recognise the responsibilities of all governments across the globe to determine public policy on a local, national and international level and ensure equal participation by all governments in Internet governance.
- Strengthen Internet governance mechanisms and processes to ensure they are inclusive and open to all interested stakeholders, in line with the South African constitution.
- Reinforce the importance of meaningful participation and involvement by all stakeholders across the world in international governance processes and decision-making related to this platform. This includes all governments, technical experts, individual users, community and civil society organisations, academics and the private sector in their respective role.
- Clarify the roles of the different stakeholders in shaping the evolution and development of the principles, norms, rules, standards and programmes that shape the Internet.
- Ensure that stakeholders involved are globally distributed and that no one country or group of countries has any undue influence on global Internet policies.
- Reinforce accountability mechanisms for Internet governance institutions.

8.11.1.4 Interventions

The following overarching policy positions will guide South Africa's ongoing participation in forums to transform international Internet governance mechanisms and processes:

- Global Internet governance and policy mechanisms and processes must reflect the equality of all countries, in line with the principles of the United Nations. Truly global participation should include governments and representation from different countries across all stakeholder groups (including civil society organisations, private sector interests, technical experts and academics in their respective role from all countries).
- South Africa endorses positions that recognise the central role that governments, as elected bodies representing and accountable to the public, must play in determining Internet governance policy.
- South Africa recognises the right of all countries to develop and implement policies in accordance with the principles of self-determination and subject to the UN principles.
- South Africa recognises the responsibility of governments to develop public policy on all aspects of the Internet including infrastructure and services deployment and regulation, cybersecurity, cross border taxation etc. These should be subject to both national laws and international treaties

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Government will work closely with all Internet stakeholders in South Africa in developing its positions on international Internet governance issues. The National ICT Forum will provide a platform for such consultation. This includes civil society organisations, academic institutions, technical experts and ICT stakeholders across the Internet value chain.

The sector regulator will be tasked with identifying issues related to Internet governance of relevance to South Africa and proposing recommendations to address these.

8.11.2 National Internet Governance

It is crucial that South Africa has a holistic approach to Internet governance in the country as well if it is to achieve the social and economic development goals of this White Paper. This includes addressing all Internet-related governance and administration issues comprehensively and reinforcing a multi-stakeholder approach to Internet governance.

To date, South Africa has focused primarily on two areas:

- The .ZA domain namespace;
- The establishment of a National Internet Governance Forum (national IGF).

The entity that regulates the .ZA domain name space, including licensing registries and registrars, is .zaDNA. Although the National IGF was launched in 2011, it has not functioned effectively and has not held regular meetings.

8.11.2.1 Challenges

The policy review process identified the following key challenges:

- .zaDNA's mandate is limited to regulating the domain name space. No single entity therefore is mandated to address issues related to the national governance of the Internet.
- There are a number of gaps in legislation which need to be addressed so that .zaDNA can fulfil its mandate efficiently.
- Generic top level domains (gTLDs) do not fall under .zaDNA but are under the jurisdiction of ICANN. Foreign operators can therefore potentially acquire South African public interest names (such as heritage site names) and use them in competition with .za.
- The current management of .za second level domains remains in the hands of several entities. While substantial progress has been made to improve the registry infrastructure, there remains an opportunity to improve the management of the registry function so as to reduce the costs of registering South African domain names.
- There is a need for more proactive engagement with stakeholders in South Africa to inform South Africa's positions on Internet governance at a local, regional, continental and global level.

8.11.2.2 Objectives

The objectives of this policy are to:

- Ensure efficient, effective and holistic governance of the Internet at a national level. This includes administration of the domain name space;
- Reinforce the multi-stakeholder, transparent and open model for Internet governance at a national level;

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- Protect South African geographic, cultural, heritage and public interest domain names from commercial or other exploitation; and
- Promote debate, education and awareness about the Internet and Internet governance.

8.11.2.3 Interventions

- Government will ensure that the mandate for the entity responsible for the governance and administration of the Internet (including the .za domain namespace) is extended to enable it to operate .za second level domain registries and address other current gaps.
- Government will further revive the national Internet Governance Forum as part of the National ICT Forum and ensure meaningful engagement with all partners on issues related to Internet governance and administration.
- Legislation will be amended where necessary to ensure a holistic approach to Internet governance and address existing loopholes. This will include introducing mechanisms to increase efficiency of administration of the domain name space.
- Mechanisms will be put in place to ensure that all current and future generic Top Level Domains (gTLDs) that are based on exclusively South African geographic, cultural, heritage and public interest names (such as dotJoburg, dotCapeTown and dotDurban gTLDs) are endorsed, approved and operated by the authority responsible for domain name space regulation. The regulator will be requested to propose the best means to ensure this.

8.12 Domain Name management

South Africa has a vibrant Internet management regime consisting of a secure and stable .ZA domain namespace with a little more than one million registered names. There is also a steadily growing Internet service provider (ISP) community in South Africa. For example, of the 429 ISPs accredited to register .ZA domain names (as of 2 February 2016), 84 per cent (359 ISPs) are South African. The allocation of IP addresses is normally the business of ISPs, and the healthy state of the local ISP community indicates that there is ready access to IP addressing.

There is no restriction requiring local ISPs to only sell .ZA domain names services. In fact, most local ISPs also sell domain name registration of other (non-South African) namespaces. Likewise, there a number of leading international ISPs that are actively selling .ZA domain name registration services, and are able to provide such services to South Africans.

8.12.1 Challenges

The number of .ZA domain names is extremely limited considering the total population (54 million). There is a need to create more active public awareness of the importance of .ZA as the unique South African online identity.

8.12.2 Intervention

The sector authority will be specifically mandated to implement active marketing and awareness strategies to drive the registration of .ZA domain names by South Africans.

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9. Opening Access: Infrastructure and supply-side issues

"ICT infrastructure, together with the multitude of converged services that it enables and supports, is an indispensable component in the development of the information society and the building of a knowledge economy."[50]

ICT Policy Review, Recommendations Report

This Chapter of the White Paper deals essentially with the policy frameworks to address the *supply-side* challenges to transforming South Africa into an inclusive, people-centred and developmental digital society.

The current infrastructure market, particularly in relation to broadband, is characterised by fundamental market problems of ineffective competition, infrastructure sharing bottlenecks, unnecessary duplication of infrastructure, and inefficient use of scarce resources. Multiple networks have been rolled out across the country, with deployment skewed towards urban areas where infrastructure duplication is prevalent. Competition, in particular in the mobile broadband market, is limited by the number of players that have access to scarce frequency spectrum resources.

This market structure and the policy approach that has enabled it, increases the costs of broadband provision and thus limits broadband access by end users. The key to overcoming these challenges is openness. Openness is a principle that underlies the Integrated ICT White Paper and a central theme that runs through this Chapter which includes separate sections that deal with Open Access, Spectrum and Rapid Deployment policy issues. It also outlines the broad framework that will inform the licensing framework for the ICT sector.

While openness is a theme, the problems present themselves differently in the different infrastructure segments - international, backbone, metro and last mile – and thus a broad-brush approach would be inappropriate and ineffective. Addressing these infrastructure problems is critical as they have a knock on effect on the entire broadband value chain and make it difficult, if not impossible, for the government to achieve the target of 'broadband for all' as set out in more detail in SA Connect and the NDP. The policy interventions in this supply side chapter thus deal with each of these elements.

In order to make the changes in the ICT sector that are needed to realise South Africa's developmental objectives and transform society and the economy, this chapter, includes a single spectrum policy addressing all spectrum policy issues and includes objectives that cover all services using spectrum, including telecommunication and broadcasting services. This recognises among other things that the distinction between broadcasting and telecommunications spectrum is becoming increasingly blurred because of convergence.

As a first step towards meeting national goals, this chapter confirms that spectrum needs to be defined and treated as a public good used to meet public interest objectives. Spectrum generally needs to be managed and used effectively and efficiently; and broadband spectrum in particular,

[50] ICT Policy Review, Recommendations Report. Page 12

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needs to be governed in line with a paradigm shift towards the non-exclusive[51] assignment of highly contested spectrum in bands where demand exceeds the amount of spectrum.

To support this new approach, the open access regime has to be extended and more direction is given in this policy on how networks should be shared between all licensees for the benefit of society, including through a Wireless Open Access Network. The reconceptualised spectrum policy and enforcement of an open access regime will facilitate lower costs and more efficient networks that use the latest technologies and are able to deliver a multitude of services. This will also promote the extension and deployment of networks in rural and underserviced areas to support inclusive economic growth. The Government recognises that time is of the essence if the country is to meet the targets set out in SA Connect and the economic growth targets put forward in the NDP. Thus 'rapid deployment' of infrastructure must be proactively promoted and is therefore encouraged through policy.

With open and shared networks as a feature of the new policy environment, competition will be focused at the service level – enabling internet service providers (ISPs), mobile virtual network operators (MVNO) and other service providers to provide high quality and innovative products and services to South Africans – at affordable rates. This will in turn facilitate universal service and access – and broadband access for all.

9.1 Open Access

In order to realise South Africa's developmental objectives, transform society and the economy, encourage broadband deployment, and preserve and promote the open and interconnected nature of the Internet, an open access regime will be implemented in South Africa along the entire infrastructure and services (broadband) value chain.

Through this open access policy:

- **Core networks** will support, at a minimum, traditional open access principles of fairness, transparency and non-discrimination;
- **Last mile infrastructure** will be built on open access core networks and will be made available in a manner that will enable many users to coexist on the same infrastructure or in the same spectrum; and
- **Digital services and applications** will be provided over open access networks and will be governed by the Open Internet and net neutrality regime outlined in Chapter Eight in order to protect and maintain open, uninhibited access to legal online content.

9.1.1 Context

The open access regime introduced with this White Paper carries forward aspects of the current policy, legal and regulatory framework. Infrastructure sharing is already mandated – albeit with insufficient regard to the extent of IP based network convergence, the degree of market foreclosure and effective enforcement measures. The Electronic Communications Act ("EC Act") provides that all facilities must be shared upon request; this is expanded upon in the Facilities Leasing Regulations (2010) which set out the manner in which operators can access infrastructure providers' facilities, and the procedures and principles relating to such access.

[51] "Non-exclusive" provides that utilization of a resource by one entity precludes other entity's utilization the resource and is aligned with the principle of open access.

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The National Development Plan (2012) ("NDP"), South Africa Connect: the National Broadband Policy and Strategy (2013) ("SA Connect") and the recommendations captured in the National ICT Advisory Review Panel Report (2015) ("ICT Panel Report") have identified that, despite the policy and regulatory framework, network roll-out is skewed towards urban areas - and the prospects of providers rolling out modern broadband services in rural and less affluent areas without government intervention are minimal.

9.1.1.1 Challenges

Three key challenges have resulted in skewed network roll-out in South Africa: An ineffective regulatory regime, a concentrated broadband infrastructure market and high communications prices. If they persist, these problems will perpetuate the digital divide, compromise the country's ability to meet its aggressive broadband targets set out in SA Connect, and will cause South Africa to miss the opportunity provided by broadband to improve the economy.

- **Ineffective regulatory regime**

Chapters 7 and 8 of the EC Act, provide for an open infrastructure sharing regime that obliges every licensee to interconnect upon request and every electronic communications network service (ECNS) licensee to provide access to electronic communications facilities, on negotiated terms, unless the request for access is unreasonable. The regime further provides that operators with significant market power (SMP) may have additional and more effective and far reaching open access obligations placed on them. Accordingly, Chapter 10 of the Act provides for the regulator to conduct market studies and to impose appropriate remedies.

The process outlined for addressing significant market power requires a market review on a defined relevant market, a test of whether the market is competitive and thereafter, if the market is found to be uncompetitive, an analysis of an operator's market power and its potential to behave in an anticompetitive manner, thus abusing such market power. After following these steps, regulatory interventions can be made.

The current process is broadly aligned with global best practice, however, the manner in which the Act is drafted and the ensuing South African application of the practice has demonstrated obvious flaws.

For example, the EC Act is overly prescriptive in the manner in which market reviews must be conducted and what information needs to be assessed. It takes what are considered 'guidelines' in other jurisdictions, including the European Union, and prescribes them in law. Thus, even when market power is obvious (for example where there is a monopoly commanding 100% market share, a duopoly commanding 90% of market share, or six players dividing all high demand spectrum between themselves in a market of 400 other licensees) the regulator has been prevented from exercising regulatory interventions without conducting cumbersome, lengthy and expensive competition inquiries. This results in a delayed response to market developments and ineffective regulation.

- **Concentrated broadband infrastructure market**

Despite a converged licensing regime and mandated facilities leasing and infrastructure sharing, the broadband market is characterised by a few very strong and vertically integrated players. Infrastructure (built using scarce or public resources) – whether mobile or fixed - is seen as a competitive advantage rather than as a facility that can be shared in order to stimulate competition

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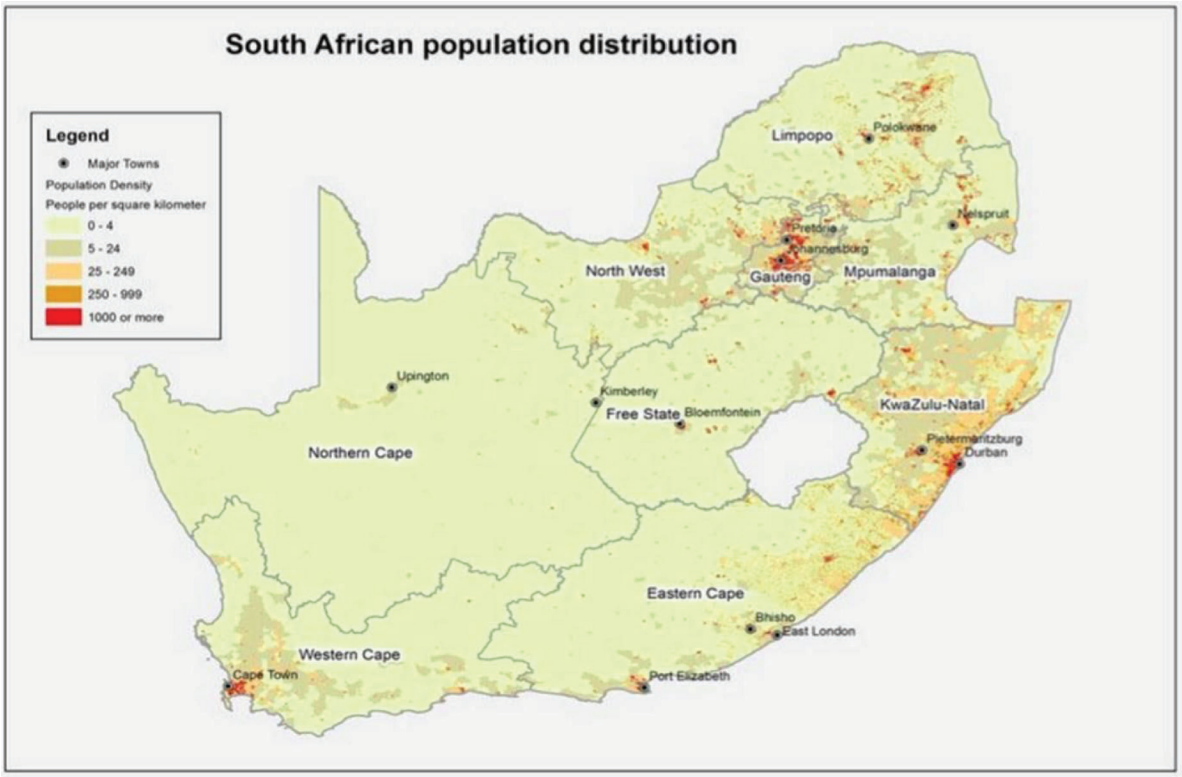
at retail level and in so doing allow modern services to be provided on a universal basis to serve all South Africans.

The result of the use of infrastructure as a competitive advantage is (1) the lack of infrastructure in less affluent areas (2) infrastructure sharing bottlenecks, (3) high costs to communicate, (4) the duplication of infrastructure (5) the inefficient use of scarce resources, i.e. frequency spectrum; and (6) barriers to entry for new entrants and SMMEs. As a consequence, pricing, quality of service and innovation are compromised. It is clear that if the oligopoly and associated market structure is perpetuated, the country will not meet its sector development goals as set out in the NDP.



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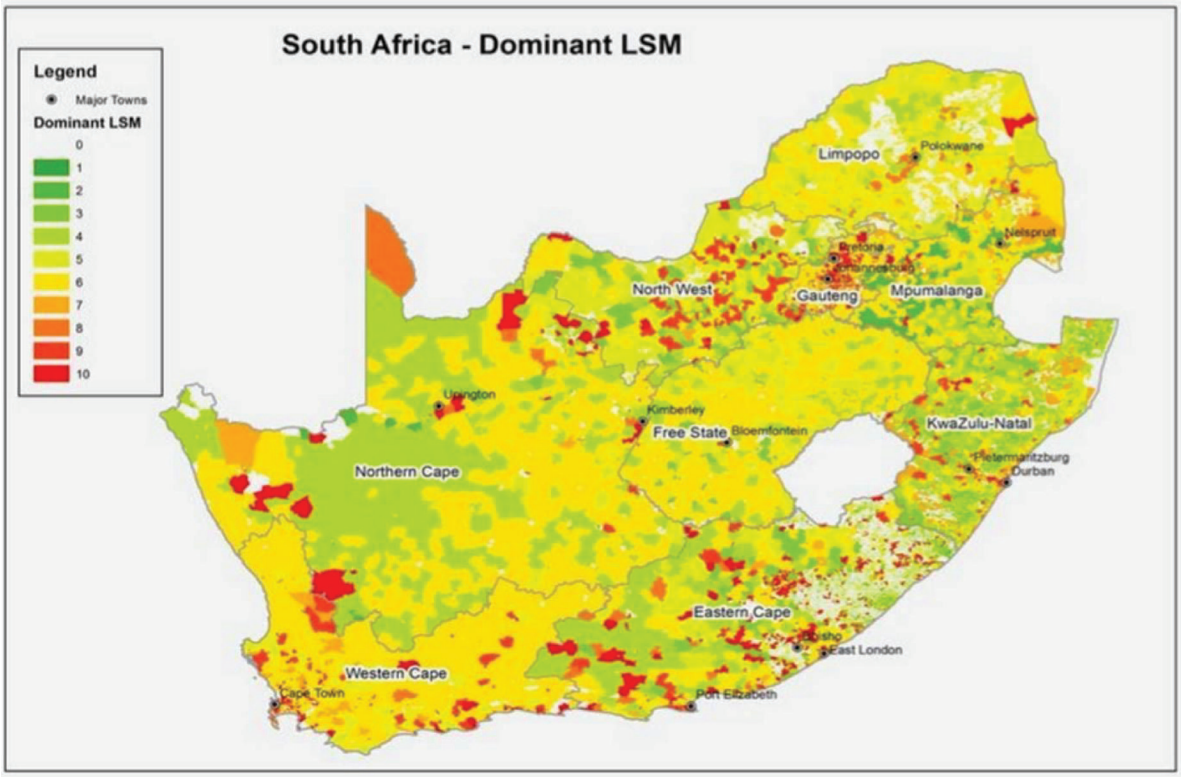

The problem is not the same at all levels of the network. The international, backbone, metro and last mile segments are at varying levels of openness which have different impacts of the broadband market and require different policy interventions. The infrastructure concerns that this policy seeks to address can be summarised as follows:

- **International segment**: The international market includes undersea cables and satellite. The ICT Review Advisory Panel found that currently, South Africa is connected to the rest of the world through four submarine cables which provide a combined capacity currently of approximately 11.9 terabytes per second (TB/s) –sufficient to meet current needs. There is also significant competition in the international market. Satellite is used for defence purposes but is otherwise generally regarded as a last resort and high cost option if terrestrial technologies cannot economically reach an area. The challenges identified in the satellite and undersea cable markets do not relate to the openness and sharing of the infrastructure and therefore no policy action or intervention is proposed in this Chapter.
- **Backbone infrastructure**: Backbone infrastructure is a critical segment of universal broadband services as it enables last mile infrastructure provision. Although multiple players are rolling out national long-distance fibre; the incumbent fixed line operator owns the bulk (approximately 86 %) of fibre infrastructure in the country. The incumbent operator owns virtually the entire network that connects the cities, towns and villages and there is no prospect of any other operator replicating this extent of infrastructure. Thus, in addition to the problem of a limited number of providers of fibre, where it exists, there is insufficient sharing resulting in insufficient competition at service level. Policy therefore needs to avoid unnecessary duplication of infrastructure in this segment of the market and enable access to it.
  - **Metro infrastructure**: The metro network is a regional network comprising a number of interconnected aggregation/switching centres. Most municipal areas have considerable core

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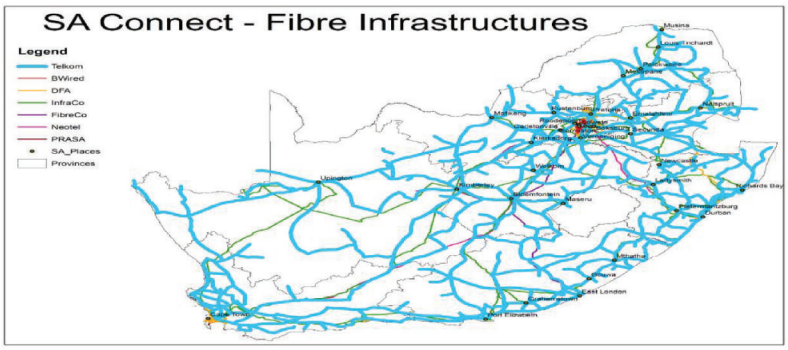
network infrastructure owned primarily by the incumbent fixed line operator. Recently, municipalities and a few private entities have started to invest in metro fibre networks to meet government and neighbourhood needs. Access to municipal infrastructure is currently not regulated. Furthermore, there is lack of coordination in the rollout of broadband in metropolitan areas and this has resulted in duplicated networks as well as insufficient and inefficient utilisation of network infrastructure.

- **Last Mile (local loop) infrastructure***:* The largest infrastructure bottleneck is in the provision of last mile infrastructure, also known as the 'local loop.' Last mile infrastructure is provided using fibre, copper, wireless (2G, 3G and 4G) and satellite technologies. Notwithstanding a technology neutral regime, the reality is that last mile problems manifest themselves differently across different technologies:
  - ***Fibre-based last mile broadband market:*** Last mile fibre is concentrated in urban areas, with most providers addressing affluent urban communities. The outcome of this commercially driven approach to fibre rollout is that firstly multiple, uncoordinated networks are created, potentially resulting in fibre overbuild and duplication on commercially-viable routes; and secondly the perpetuation of the digital divide with the rural areas being left unconnected. Furthermore where last mile infrastructure exists, open access principles are not applied resulting in less choice of services for consumers.
  - ***Wireless last mile broadband market*** **-** Over four hundred players hold electronic communications network service licenses which theoretically at least enables them to apply for, and depending on availability, access spectrum. The reality, however, is that only six operators have access to mobile broadband spectrum in South Africa. All six are vertically integrated and therefore provide network service to themselves as well as third parties on commercial terms favourable to them, thus skewing competition at the services level. It also causes them to compete on last mile infrastructure and thus duplicate networks. This increases their unit costs (and thus consumer costs), and means that they have less financial resources to roll-out highly capable networks with wide coverage.



- **High cost to communicate**

The duplication of infrastructure and commercially driven rollout plans lead to expensive infrastructure deployment, which costs are passed on to consumers. In addition, the limited number of service providers are not able to adequately exert pressure on retail prices.

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9.1.2 Goals

The ultimate goals of this policy are:

- To allow for **effective service based competition** and ensure accessible, affordable, high quality and reliable services for consumers
- To **increase network coverage**, and **enable the rapid deployment** of broadband infrastructure and services across all areas of the country
- To **promote shared and equal access** to broadband infrastructure
- To **remove barriers to competition** and innovation in the provision of broadband services
- To **foster innovation** and development of applications and services

9.1.3 Objectives

This open-access policy will:

- **Lead to the creation of efficient, uniform, competitive and responsive open access networks** that will enable all players to compete on equal terms, thereby enabling multiple downstream competitors to share infrastructure;
- **Promote transparency (**equal treatment of similar services)**, non-discrimination** (same treatment of own and competitor services) **and accountability** across the broadband value chain;
- **Open high demand spectrum** for use by all licensed operators**;**
- **Encourage service-based competition** which will increase consumer choice (of services providers and of services), reduce costs and increase innovation;
- **Encourage consumers to fully experience the internet** as long as the content , applications and services that they are accessing is legal;
- **Reduce market entry barriers** and enable sharing of infrastructure and scarce resources, thereby reducing duplication of infrastructure; and to enable innovation in the development of digital applications and services.

It is understood that this policy reform will fundamentally change the market structure of the sector in that it will promote service-based competition and reward infrastructure sharing. It will also unleash the power of the Internet. The policy thrust is one which sees infrastructure as a strategic asset to be shared, on a profitable and regulated basis, in order for the country to meets its socio-economic objectives. It furthermore sees digital applications and services carried over shared networks as a key contributor to the expansion of the sector, the development of a knowledge economy and digital society.

9.1.4 Open Access Concept

The ICT Policy Advisory Panel (2015) identified that there is no common understanding of or definition for the concept of open access in the policy framework. Going forward, Open Access in a network context refers to a scenario where *wholesale access is provided to electronic communications network infrastructure or services on terms that are reasonable, effective, transparent and non-discriminatory.*

Open access also applies to the Internet. In facilitating an Open Internet (see Chapter Eight), open access refers to lawful and legal services that are treated equally, without discrimination, restriction or interference, independent of the sender, receiver, type, content, device, service or application.

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9.1.5 Open Access principles

The principles underlying this policy and applicable to networks, services and applications are:

- Openness;
- Transparency;
- Equal access and non-discrimination;
- Sharing and non-duplication;
- Efficiency, standardisation and reasonableness.

9.1.5.1 Open Access principles relevant to all networks

All backbone, metro and last mile networks ("networks" or "infrastructure") in South Africa must be provided on an open access basis. This is already enshrined in law to the extent that the ECA provides that facilities sharing is mandatory, subject to a reasonability test. This policy proposes that all network providers should therefore provide network services in line with the following principles:

- **Effective access to infrastructure:** Effective access refers to access by competitors that is easily obtained in reasonable locations using standardised interfaces. The service should be of a high quality and unbundled to a sufficient degree so that the access seeker does not have to purchase services it does not need. This principle will be enforced by the regulator through regulations or licence conditions requiring unbundling and submission of service level agreements. The publication of Reference Offers will also assist in the implementation of this principle.
- **Transparency:** Access must be provided in a way that is clear to all market players. Access providers have to be transparent in the design of their offerings, their pricing and the terms and conditions associated with them. Such information must be made available to interested parties and the regulator up front. This will be implemented through, among others, the regulator mandating Reference Offers.
- **Non-discrimination:** All access seekers must be granted access to networks in a non-discriminatory manner; a vertically integrated infrastructure provider cannot favour services affiliated with its own company. Through awareness of standard terms and conditions, as published in Reference Offers, new entrants and competition infrastructure providers will be in a position to ensure that there is no unjustifiable basis for discrimination.

9.1.5.2 Open Access Principles relevant to vertically integrated entities

The common ownership of network and service arms of a business may give rise to competition problems, and can compromise the open access principles. To ensure that access providers (both fixed and mobile providers) cannot use their market power to restrict or distort competition, or to leverage such market power in adjacent or related markets, where an access provider is vertically integrated, the regulator should require that they adhere to the principle of **accounting separation.**

Accounting separation will require the preparation of separate accounts for each of the different businesses operated by the same entity by identifying and allocating the costs and revenues associated with each business as well as the dealings between them.

Government is aware that a number of countries require that operators' business operations should be structurally divided into separate business units (retail and wholesale business, and/or fixed and mobile) so that charges between the two segments may be explicitly observed. However, as an alternative, a number of jurisdictions have allowed operators to manage the reporting requirements

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in a manner that meets public policy objectives. Government's first priority is to afford entities the least costly approach, hence the current policy proposals contain only accounts separation that ensures functional separation.

If this fails to result in the desired policy outcome of encouraging fair and non-discriminatory access, then the Minister may consider structural separation of vertically integrated infrastructure providers in South Africa in the future.

9.1.5.3 Open access principles relevant to deemed entities

In order to encourage infrastructure sharing and open access in a concentrated broadband infrastructure market, relevant principles need to be applied to operators that control critical resources or have significant market power to the extent that they can influence the functioning of the market. Market concentration has the associated outcomes of lack of retail competition, less choice for consumers, higher prices, insufficient competition and low quality of services provided, all of which are issues that this policy seeks to address. A policy driven approach, with participation of the market will be followed to address this problem.

An access provider will be "deemed" an open access network if it displays any of the following characteristics:

- It has significant market power in the relevant infrastructure market, or
- It controls an essential facility; or
- It has a network that constitutes more than 25% of the total infrastructure in that market; or
- It has a scarce resource, such as frequency spectrum, assigned to it for its exclusive use.

The regulator will be required to publish a list of deemed open access networks as soon as possible after the finalisation of this White Paper.

In addition to ensuring that it is aligned with the general open access principles, a deemed open access network operator should provide:

- **Cost based pricing** that is regulated to address the high cost of providing network services and thus retail prices of communications services. In principle the wholesale price of a service should not exceed the minimum costs that an efficient firm would incur in the long run in providing the service. The relevant costs that the regulator should take into account when it designs the wholesale pricing regime and the forward looking or ongoing cost of providing the service, including a commercial return on efficient investment. The Minister will require the regulator to develop regulations on cost based pricing following the adoption of this White Paper
- .**Active infrastructure sharing:** Currently assigned spectrum can be more efficiently used through active infrastructure sharing. This will give more service providers access to already assigned spectrum with increased consumer choice and competition as a result. Active infrastructure sharing includes National roaming, Radio Access Network (RAN) sharing and enabling Mobile Virtual Network Operators (MVNO) on an operator's network.
    - ***National roaming*** is a way of sharing infrastructure and currently assigned spectrum held by the mobile network operators with several retail providers (e.g. MVNOs and ISPs). This gives more providers indirect access to mobile services on the already assigned spectrum, thus enabling increased consumer choice and promoting service-based competition. It also provides an alternative to the costly and slow duplication of

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infrastructure and facilitates efficient usage of spectrum. The Open Access Principles will apply to the arrangements around the provision of roaming services by existing network operators deemed open access network entities. Voice and data roaming must be available for the latest generation of technologies. Deemed open access network entities must provide regulated national roaming to MVNOs in a fair, transparent and non-discriminatory manner.

- ***RAN sharing*** enables operators to share costs through sharing of active infrastructure, when deploying networks. Depending on what elements of the infrastructure are shared, the cost saving potential can be significant. Active infrastructure sharing may lead to competition concerns and the regulator is directed through this policy to develop a framework for RAN sharing to mitigate these and lay down rules to ensure that RAN sharing will contribute to lower cost of communications while balancing potential competition concerns. RAN sharing will also enable the non-exclusive use of spectrum as a public good for broader socioeconomic development. Deemed open access network entities must provide regulated RAN sharing to other operators upon request and in manner that is not anti-competitive.

- ***A Mobile Virtual Network Operator*** (MVNO) is an operator that offers its services on top of a Mobile Network Operator's (MNO) infrastructure. MVNO's do not operate a network and do not have radio frequency spectrum. MVNOs can be grouped into different types from full to light operators depending on the number of elements of the MNO's network and infrastructure the MVNO uses. MVNOs are a form of enhancing service-based competition. Deemed open access network entities must provide hosting service to MVNO's in a manner that is not anti-competitive.

- **Access to the network at Layer 3 and below:** Open access in fixed networks has been traditionally addressed using the ISO (International Standardisation Organisation) Open Systems Interconnect (OSI) model ("the OSI model") which provides a conceptual approach to defining a typical fixed infrastructure network. There are alternative models such as a TCP/IP (Transmission Control Protocol/Internet Protocol) model, however, the OSI model is generally accepted and is a good technical reference point used by many policy makers.
  The general open access regime set out in this policy addresses access at Layer 0 (conduits, ducts, collocation) and Layer 1 (local loop, dark fibre, traditional copper passive infrastructure). Layers 2 and 3 include active equipment and provide for a variety of possibilities for implementation, ranging from bit stream services at different levels of the network (e.g. national, regional, local interconnection at layer 2 or layer 3) or different technologies (e.g. IP-based, Ethernet-based, ATM) allowing for different technical implementations, to different investment needs for alternative operators, and a different degree of freedom to offer differentiated services.[52] Deemed open access networks should provide equipment and facilities or such elements as are required by other licensees available at Layer 3 or below.

[52] http://www.oecd-ilibrary.org/docserver/download/5k49qgz7crmr.pdf?expires=1453567728&id=id&accname=guest&checksum=F4EBC3A1CA6C482F7FFF7088C6DA4D77

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LAYER	WHOLESALE SERVICE PROVIDED
0	Conduit, collocation facilities, access to ducts
1 (physical layer unbundling)	Local loop unbundling, dark fibre leasing/optical layer unbundling in PONs
2 (data link layer unbundling)	Layer 2 bitstream access (e.g. Ethernet, ATM), dark fibre and link-layer electronics at each end
3 (network layer unbundling)	Basic network service provided, layer 3 bitstream (e.g. IP bitstream)

Source: OECD elaboration from Lehr *et al.* (2007)

Figure 11: OSI Model, Source: OECD

- **Specific network and population coverage** targets as set by the regulator, that align with national targets set out in SA Connect and other policy documents to achieve affordable national broadband access at designated speed, and at a high level of quality.

Deemed Open Access Networks should satisfy ***all*** of the general open access principles, and to the extent that an operator is vertically integrated, the principles applicable to vertically integrated entities, will apply as well.

Access to an "essential facility" is an important part of the characterisation of an open access network. Layer 2 and Layer 3 broadband infrastructure constitute 'essential facilities' which is in line with the ICT Policy Advisory Panel's recommendation and takes into account the central role of broadband infrastructure in enabling access to broadband services.

The regulator is therefore directed to prioritise and develop wholesale open access regulations following adoption of this White Paper. In the short term, until the EC Act is amended, the regulator is also directed to attend to the review of the definition of 'essential facilities' to align it with the intentions set out in this policy.

9.1.6 Wireless Open Access Network

There are nuances in the policy framework for implementing an open access regime in the mobile market, given the dependency on access to frequency spectrum to enable last mile access. Spectrum, in this market, constitutes a bottleneck. It is therefore important that, in line with the principle of openness, a shared approach to spectrum use is taken. This approach reduces duplication and the inefficiency that arises from the building and operation of multiple networks. It also encourages service based competition in a way that the current oligopoly does not.

The Spectrum Policy (*see subsection 8.2 below*) sets out a policy framework to address the assignment of high demand spectrum for a Wireless Open Access Network (OAN). It makes it clear that all high demand spectrum will be assigned on an open access basis, and that all currently unassigned high demand spectrum will be treated in line with this policy.

The spectrum policy also maps out the process to determine the terms and conditions for the treatment of currently assigned high demand spectrum. This policy intervention is based on the premise that allowing users to share spectrum, subject to rules that ensure they do so efficiently, is far more effective than perpetuating the current regime which is based on exclusive access by a few players. Wireless OAN's have been established in Mexico and Kenya, with mixed results. These

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experiences have provided lessons in the design of the policy framework for the envisaged open access network.

The Wireless OAN will be a public-private sector-owned and managed consortium, and will consist of entities that are interested in participating. Participants may include, but not be limited to, current holders of electronic communications service (ECS) and electronic communications network service (ECNS) licenses, infrastructure companies, private equity investors, SMME's, ISPs, OTT players and MVNO's. The participation of existing ECNS licensees will speed up the ability of the Wireless OAN to meet its coverage objective. Parties with retail businesses which participate in the network are likely to provide a natural incentive for the reduction of wholesale prices.

The regulator is responsible for the licensing of the Wireless OAN (including both ECNS and spectrum licences). The speedy licensing of the Wireless OAN is key to meeting the 2020 targets set out in South Africa Connect and the overall Vision 2030. No amendments to existing legislation are envisaged to support the wireless open access framework and the Wireless OAN should be licensed as soon as possible after the coming into force of this policy. The time frames for this will be determined by the Minister in consultation with the regulator and other stakeholders.

It is important that the members of the Wireless OAN consortium are selected on a fair basis and through a transparent and legally sound process. The licensing process will ensure and reinforce the principles of legality, fairness and transparency. In issuing a licence to the Wireless OAN, the regulator will ensure that the consortium adheres to the following principles:

- **Voluntary participation** by interested stakeholders.
- Diversity of ownership and control: The ownership structure should be diverse and enable the **meaningful participation of all entities** involved.
- **Competitive neutrality: I**t should not result in anti-competitive outcomes; and potential dominance and control by any single entity should not be allowed.
- Compliance with the prevailing legislation, regulations and codes in relation to **Black Economic Empowerment.**
- Effective participation by **targeted groups** including women, youth and persons with disabilities.
- The Wireless OAN only provides **wholesale services** and cannot provide retail electronic communications services. Nothing will prohibit the entities that are members of the Wireless OAN from providing retail services themselves, as long as they have the **requisite licenses** from the regulator.

Government fully supports wireless open access as a means to meet the public policy objectives such as lowering of the cost of communications, reducing last mile infrastructure duplication and encouraging service-based competition. Wireless open access should also be implemented in a way that increases investment, encourages the efficient and effective use of scarce resources, and results in the provision of high quality and innovative services. Incentives will therefore be provided to support wireless open access. These include:

- Reduced or waived spectrum fees.
- Access to public buildings and other type of public infrastructure, e.g. poles, towers, ducts, rights of way at reduced costs through government facilitation.
- Allocation of some funds from the fund responsible for rural and under-serviced areas.

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The regulator is hereby directed to follow a public process in licensing Wireless OAN. Although the licensing of high demand spectrum is urgent and the process is non-competitive, a public process is important to ensure transparency in the assignment of high demand spectrum. The regulator should also evaluate and be satisfied with the proposed consortium's technical plan, financial viability, ability to commence rollout of licensing, operational capacity and its strategy to enter into commercial agreements with existing operators to piggy back on existing infrastructure prior to issuing it a license. In addition, the regulator should have due regard to the network's universal access strategy - both technical and financial - to ensure full population coverage in a reasonable space of time and importantly the required capacity.

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9.2 Radio Frequency Spectrum Policy

> ***"A primary goal is to ensure optimal use of radio spectrum in social, economic and technical terms. As demand for spectrum increases, so too should our planning and management regime. However, the issues of spectrum planning have been under the spotlight over recent years, and thus require a careful re-think of the status quo."***
>
> ICT Policy Review Panel Recommendations[53]

This policy is the basis for the planning and management of the radio frequency spectrum, which is a national asset, a finite resource and a vital element of the communications infrastructure. Given the significance of spectrum in the communications sector and its impact on economic development, it is incumbent on the Government to ensure that maximum public value is derived from its use.

The radio frequency spectrum is a vital national resource. The right to spectrum vests in the state since the radio frequency spectrum is a limited resource from which all sectors of society should benefit. It is a key resource for many essential communication services and provides access for South Africans to a range of mobile, fixed wireless and satellite communications, television and sound broadcasting, transport, radiolocation, radio navigation, safety of life and other applications. Radio technology supports public services such as defence, safety and security as well as scientific activities (e.g. meteorology, earth observation, radio astronomy, space research, etc.). Demand for spectrum is rapidly increasing resulting in supply shortage.

Government is committed to maximising the socio-economic benefits derived from the use of the spectrum resource. As such, this policy, like those before it, defines spectrum as an important utility and a public good. This means that the allocation, licensing and use of the radio frequency should be underpinned by well-defined public policy goals. As a result, this policy goes a step further than previous ones and puts forward measures to support a paradigm shift towards non-exclusive[54] assignment of highly contested spectrum in bands where demand exceeds the amount of spectrum available.

The South African Government recognises that there are a number of factors, such as rapidly evolving technology, changing market demands, globalisation and an increased focus on public safety and security, which need to be taken into account in an effective and forward looking spectrum management regime.

Access to mobile broadband spectrum is a critical factor in achieving the objectives enshrined in the National Development Plan ("NDP") and the targets set out in South Africa Connect ("SA Connect"), the national broadband policy. Spectrum identified and allocated for International Mobile Telecommunications[55] (IMT) applications is central to achieving such targets. IMT spectrum is the

[53] Page 51

[54] "Non-exclusive" provides that utilization of a resource by one entity does not preclude other entity's utilization the resource and is aligned with the principle of open access.

[55] International Mobile Telecommunications is a standard and system created by the International Telecommunication Union (ITU), for the creation, operation and management of next generation mobile networks and Internet communications.

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lifeblood of wireless broadband, which is the main way in which South Africans currently access the Internet.

The ICT Advisory Panel found that in South Africa, like in many other countries, wireless technologies are more appropriate for the provision of electronic communication services in rural and other underserved areas due to the population distribution, lack of infrastructure and terrain, amongst other reasons. According to the International Telecommunications Union (ITU), globally mobile broadband is the most dynamic market segment, its penetration having increased by 12 times since 2007 to 47 percent in 2015.[56]

9.2.1 Context

Historically spectrum for mobile has been assigned to individual licensees who are then given exclusive rights to it for a defined period in a defined geographic area. Moving forward, the new spectrum management regime set out in this policy encourages that licensees work together as far as it is practicable. This includes through the deployment of a Wireless Open Access Network. The value of sharing and collaboration between licensees is that it will result in the more effective use of a scarce resource (spectrum) and the reduction of the duplication of infrastructure while facilitating services based competition.

Without the policy shift set out in this Integrated ICT White Paper, and this particular spectrum and open access framework, the specific challenges of extending access to rural and underserviced areas and lowering the cost of communications will not be achieved within the timeframes set out in SA Connect and the NDP. This particular transformation is imperative to ensure inclusive economic growth.

9.2.1.1 Challenges

The main policy issues identified and addressed in this policy are:

- **Unclear roles and responsibilities** between the Minister and the regulator resulting in institutional inefficiencies;
- **Gaps in the spectrum management regime** with regard to the alignment between national universal service objectives and the licensing of frequency spectrum resources, the setting of spectrum fees, spectrum trading, sharing, re-farming and migration;
- **An exclusive spectrum regime which promotes economic growth** for a few market players at the expense of broader socio-economic development, and therefore an inequitable assignment broadband spectrum which is in high demand. “High demand spectrum” in the context of the White Paper refers to spectrum where demand for access to the radio spectrum resource exceeds supply, or radio spectrum is fully assigned.

Each of the three broad problems is discussed in turn below:

- **Unclear roles and responsibilities**

There are two primary challenges in relation to the institutional framework for spectrum management: Lack of clarity regarding the roles of government and the regulator and a need for greater coordination between the regulator and sector-specific agencies, and between the regulator and licensees that use spectrum allocated for services that meet clearly defined public interest goals.

[56] ICT Fact and Figures 2015

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In relation to ***the roles of the government and regulator***: There has been a call to consolidate spectrum-planning functions from different institutions into one entity. This proposal is a response to the problems that arise because the spectrum planning functions are shared between the regulator and the government, and sometimes carried out by sector-specific agencies, in an uncoordinated manner which result in inefficiencies. The Ministry is currently responsible for planning and allocation – however, it shares the allocation role with the regulator, which is also responsible for assignment of spectrum. The duplication in the planning and allocation roles and an unclear framework with respect to the issuing of policy directions, has resulted in confusion in the sector – for example with respect to the manner in which high demand spectrum should be issued.

Regarding ***coordination between the regulator and sector-specific agencies***: Sector specific agencies use spectrum to enable them to perform functions in specific industries such as aviation and aeronautics (Civil Aviation Authority) and maritime (South African Marine Safety Authority). Spectrum is also used by various services that meet clearly defined public interest goals such as fire, ambulance and other services for public protection and disaster relief (PPDR). Although the regulator assigns the spectrum, the sector-specific agencies often, as a matter of practical necessity and in the course of doing their business, permit the spectrum to be used by third parties under their control. They do this because they manage the day-to-day coordination of the spectrum assigned to them and the competencies lie with them in relation to the services and sectors that they regulate. What ensues is an inefficient system characterised by cumbersome, bureaucratic institutional arrangements, and the duplication of processes for the assignment and management of various services utilising spectrum. The role of the regulator is perceived as simply 'rubberstamping' decisions made by sector-specific bodies. This policy seeks to address this situation.

- **Gaps in the Spectrum Management Regime**

Problems identified in relation to the spectrum management framework are as follows:

Gaps in the alignment between national universal service objectives and the licensing of frequency spectrum resource: Mobile network operators were given licences in the mid-1990s which gave them access to 900 MHz spectrum and included various universal service obligations relating primarily to the provision of Community Service Telephones. When operators were issued additional spectrum in the 1800 MHz band and later 3G spectrum, they were given additional universal service obligations. There has never been a policy framework to govern the design of the obligations, and these obligations (such as the provision of SIM cards and handsets to the public sector, and providing 3G service to schools) have been fragmented and not based on consistent principles. As such they have not been designed to support other national initiatives, nor aimed at facilitating the achievement of South Africa's developmental agenda. Although mobile communications has contributed to improving access to ICTs, the anticipated additional positive outcomes expected from universal service obligations have not been realised by the state and society.

***Blanket treatment of spectrum fees*:** The current spectrum fee regime (adopted in 2012) is based on the globally accepted Administered Incentive Pricing (AIP) model which promotes spectrum efficiency as its main goal. Whilst an appropriate model for spectrum assigned for commercial use, it has been argued by some licensees who use the spectrum services to meet clearly defined public interest goals, that AIP is unfair and not appropriate for charging spectrum fees for non-commercial applications or services. For example, spectrum used for defence is levied at the same fees as

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commercial spectrum. The ICT Policy Review Panel noted that AIP derived fees for spectrum used for non-commercial applications areas are excessive and prohibitive to public sector service execution.

***Hoarding of spectrum and managing unused licensed spectrum*:** The ICT Advisory Panel identified that the hoarding of spectrum is not conducive to efficient spectrum usage and recommended that this practice should be discouraged at all costs. A further problem that has been identified is the absence of regular spectrum audits, which are necessary to ensure effective and efficient utilisation of the radio frequency spectrum as well as weed out any 'ghost' services.

***Unclear spectrum trading and spectrum sharing regime*:** Market based approaches to spectrum management such as spectrum trading and spectrum sharing have been under consideration in South Africa without a clear policy framework that emphasises public policy gains. Recently, there have been proposed transactions involving the sale of companies that have access to spectrum, the 'sub-letting' of the spectrum resource held by one licensee to another, and Radio Access Network (RAN) sharing between licensees. The ICT Advisory Panel and the industry identified that there was a lack of a clear framework for such practices.

***No policies on refarming or migration*:** Refarming of spectrum relates to the re-use of spectrum for a different technology than it was originally assigned. Although it may be viewed as an efficient use of spectrum in a technology neutral regime, refarming can also have anti-competitive implications and entrench existing licensees' market power. There is currently no policy on the matter. Migration of spectrum, i.e. services being moved from one band to another, is a recognised feature of spectrum management. The most recent example is the broadcasting digital migration process that has been undertaken – a specific Digital Migration Policy was made in that regard. A review of the spectrum landscape and the ICT Review Panel's recommendations shows that currently there is no policy on compensation for the costs incurred by licensees when they have to migrate services from one frequency band to another. This policy vacuum is a problem that this policy seeks to address.

- **Exclusive spectrum licensing regime and delays in the assignment of spectrum**

The ECA recognises the strategic importance of spectrum and thus enjoins the Minister to issue policies and policy directions in relation to the treatment of spectrum. The act of licensing (or assignment) itself, however, is the prerogative of the regulator. Different problems exist in relation to the policy framework for the management and licensing of general spectrum which is not in high demand; and high demand spectrum:

- ***Spectrum that is not in high demand*** is generally not congested. Most important policy interventions in this area are related to turnaround times for approvals and use of best practices and key principles to ensure quick connectivity for remote areas and for broadband access spectrum. This can be achieved by the development of coordinated databases and the automation of processes, both of which are addressed in this policy.

- ***High demand spectrum:*** The ICT Policy Review Panel reiterated the concerns expressed by the industry and other stakeholders during the policy review process that, despite the heavy reliance of mobile broadband to access the Internet in South Africa, a substantial amount of the available mobile broadband spectrum in South Africa is not yet effectively assigned. It was noted that this is despite the spectrum being in the table of allocations since 2007. The lack of access to the bulk of the IMT spectrum is said to have resulted in congestion on existing networks, which in turn

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negatively impacts on the quality of services that South African consumers receive. It also impedes innovation and delays the launch of new networks and services. In fact, the existing LTE networks have been rolled out in the country through the refarming of portions of the 900MHz,[57] spectrum held by existing operators.

A fundamental problem is that although over four hundred players hold electronic communications network service (ECNS) licenses which would give them the right to apply for the available spectrum; only six (6) have been assigned mobile broadband spectrum which was obtained through various licensing [58] processes undertaken in terms of the managed liberalisation dispensation. The outcome is an oligopoly – a highly concentrated market where only a few firms dominate. Due to the scarcity of spectrum, not all licensees could be assigned spectrum in the "high demand" bands. This has had an adverse effect on the entry of additional ECNS licensees into the market. The lack of application of open access principles has further inhibited competition at the services level.

The existing six licensees[59] with access to mobile broadband spectrum are all vertically integrated – this means that they provide infrastructure (to themselves, and upon request to others) and services to end users or customers. Although they are required by law to share infrastructure, this is not adequately enforced. Growth and innovation are constrained due to the provision of exclusive rights to spectrum to a few players in the mobile market. Through this regime, although it is assigned on a limited period basis, spectrum has effectively become the private property of a few and serves as an entry barrier for operators who do not have access to it. This has been exacerbated by a regime that does not adequately define the entities' rights to the assigned spectrum, with an unintended consequence that the there is a perception that spectrum permanently belongs to the assigned entities. This should not be the case, considering the public policy and public good considerations mentioned above. The status quo does not maximise the economic, cultural and social benefits of spectrum to citizens.

Since 2007, proposals have been made to issue future spectrum through market-based approaches, such as auctions and hybrid competitive bidding/auction processes. Such approaches though would maintain the status quo and spectrum scarcity would be exacerbated - with the scale tipped in favour of those licensees that have the financial muscle to pay for it.

In a developmental state context, the highest value for the spectrum may not be measured in terms of monetary value – social and economic value are of greater importance. Furthermore, a market based approach may simply serve to perpetuate the current market structure in that those with the 'deepest pockets' and ability to pay for the spectrum are likely to be those who have derived economic benefit from their exclusive rights to the spectrum to date.

Neither proposal, i.e. comparative bidding or auction, upholds the principles of openness and transparency that this White Paper espouses; nor do they address the fundamental market problems of ineffective competition, infrastructure sharing bottlenecks, duplication of infrastructure, and inefficient use of scarce resources. This therefore creates a need for a policy

[57] Spectrum re-farming – rolling out of new wireless technologies repurposing spectrum used for other technologies – e.g. rolling out 4G or LTE repurposing 3G and 2G spectrum
[58] Various Licensing process were administered between 1993 to 2008
[59] Cell C, MTN, Neotel, Telkom, Vodacom and Wireless Business Solutions/iBurst.

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reform towards a more open approach in addressing challenges of spectrum management to meet the goal of broadband for all.

In addition to addressing these three broad problems, this policy covers the key spectrum policy principles, many already in place or in practice, that inform South Africa's approach to managing the frequency spectrum resource.

9.2.2 Objectives

Government is committed to the effective allocation, assignment and management of the spectrum resource in order to:

- Ensure its efficient use so that the **economic, cultural and social benefits** that South Africans derive from its use are maximised;
- Support **open access and the sharing of infrastructure** to the greatest extent possible;
- Promote **broadband coverage in rural areas** and underserviced areas
- Ensure that **as many users and potential users as possible can benefit** from its assignment;
- **Promote innovation** in particular to the extent that it addresses national developmental challenges and goals.

9.2.3 Goals

The goals of this policy are to:

- Promote the **effective and efficient management of spectrum** to ensure agility, flexibility and adaptability in spectrum administration;
- Contribute to the **promotion of national interests and to development and diversity** by improving sharing conditions among different radio communication services
- **Reduce bureaucracy and streamline processes** for spectrum assignment
- Support the attainment of the **national broadband targets** set out in South Africa Connect, at the speeds and within the timeframes contemplated therein;
- Provide clarity on the **treatment of spectrum in instances where demand exceeds supply**;
- **Set aside spectrum** for use on an open access basis and through joint private sector investment in infrastructure; and
- Support the provision of**, emergency services, safety and security and sector-specific operations** to all South Africans.

9.2.4 Principles

The principles underlying this spectrum policy are:

- Maximising the efficiency of spectrum used in South Africa
- Promoting openness, transparency and non-discrimination
- Promoting of infrastructure sharing
- Application of 'use it or lose it' principles to spectrum
- Predictability and certainty for policy makers, investors, users of the spectrum resource and consumers

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9.2.5 Interventions

This policy framework addresses separately each of the challenges identified above (see 8.2.1.1). It also confirms key elements of the spectrum policy regime which will be carried forward.

9.2.5.1 Roles and responsibilities

For the effective implementation of this spectrum policy, the currently overlapping roles and responsibilities of the Ministry and regulator in relation to the management of the spectrum resource will be addressed through a new clear framework:

The ***Ministry of Telecommunications and Posts*** ("the Ministry") is responsible for:

a) Representing South Africa at the ITU. This role includes putting forward the country's positions, frequency allocations,[60] and international coordination of spectrum use;

b) All international, multi-lateral and bi-lateral spectrum matters pertaining to South Africa, including regional and sub-regional spectrum planning, all cases concerning international harmful interference and international frequency coordination. The Department will liaise with the regulator on such matters;

c) Issuing policies and making policy directions in relation to radio frequency spectrum;

d) The development and approval of the National Radio Frequency Plan including the allocation of spectrum for the exclusive use by national security services;

e) Coordination across other Departments and sector-specific agencies whose industries are impacted by policy related to the use of the frequency spectrum resource;

f) Establishment of a National Radio Frequency Planning Committee with representatives from Government Departments. The Committee would ensure fairness and equitable distribution of Spectrum; and

g) Establishment of a Spectrum Directorate to coordinate the work of the Committee.

The ***regulator*** is responsible for:

a) Implementing this and any other spectrum policies and policy directions issued by the Minister.

b) Making radio regulations in line with the National Radio Frequency Plan, on the use of the spectrum.

c) The administration, management[61] and assignment[62]of spectrum, and the issuing of licenses, as may be applicable.

d) Spectrum monitoring, evaluation and interference control within the Republic.

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[60] An "allocation" is an entry in a table of frequency allocations which sets out the use of a given frequency band for use by one or more radiocommunication services. An allocation then is a distribution of frequencies to radio services.

[61] Spectrum management is the technical term for the process of regulating the spectrum.

[62] An "assignment" is an authorization given to use a radio frequency or a radio frequency channel under specified conditions. An assignment then is a distribution of a frequency or frequencies to a given licensee or radio station.

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e) Periodic spectrum audits.

f) Maintaining a high quality and appropriately accessible database of frequency spectrum assignments. Assignments to security services shall, however, be excluded; and

g) Advising the Ministry on areas for future research and development and planning.

The ***sector-specific agenci***es are responsible for:

a) Ensuring availability and maintenance of quality information related to spectrum assignments, licensing and utilisation; and

b) Maintaining a database of frequency spectrum users in their respective industries and ensuring that their database corresponds with that of the regulator.

9.2.5.2 International perspective

South Africa is a signatory to the Constitution and Convention of the ITU. This is an international treaty binding on all member states. The provisions of the ITU Constitution and the Convention are further complemented by Administrative Regulations such as the Radio Regulations, which also have international treaty status. In accordance with the ITU Constitution, South Africa shall endeavour to limit the number of frequencies and the spectrum used to the minimum essential to provide in a satisfactory manner the necessary services. To that end, South Africa shall endeavour to apply the latest technical advances as soon as possible[63].

The ITU table of frequency allocations will form the basis of the South African Table of Frequency Allocations (SATFA). All stations, whatever their purpose, must be established and operated in such a manner so as not to cause harmful interference to the radio services or communications of other countries. To that end, South Africa will promote harmonised usage of the spectrum at international and regional levels. Government will support a unified regional band plan and will, through such band plan and regional standardisation, strive to improve economies of scale of equipment across the Southern African Development Community and Africa as a whole.

9.2.5.3 The Spectrum Management regime

The following policies will apply to the spectrum management regime:

- **National radio frequency spectrum planning**

One of the primary objectives of radio frequency spectrum planning is to allocate frequency bands to the various radio services in accordance with national needs, while taking into account the ITU Table of Frequency Allocations (as contained in Article 5 of the ITU Radio Regulations) and the National Radio Frequency Plan to be developed by government.

In order to promote sharing spectrum among services, the national table of frequency allocations should follow as closely as possible the ITU frequency allocations for ITU Radio Region 1 (Africa, Europe). In cases where there are competing services in a particular frequency band, and where the decisions of an ITU WRC could create divergent interests nationally, the Minister will make a determination in the best interest of the Republic regarding the service allocation to be made in the national table of frequency allocations.

[63] No.195 of the ITU Constitution

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- **Aligning national universal service objectives and spectrum licensing**

The regulator is responsible for spectrum assignment which must be done in line with the National Radio Frequency Plan and with national policy. In making assignments, the regulator should ensure support of the national policies and that conditions of ownership that promote the transformation objectives of the country are adhered to. In particular, assignments should be made to parties who are registered in South Africa, are compliant with the Black Economic Empowerment legislation and meet minimum black economic empowerment criteria.

As spectrum is a public good and a scarce resource, the privilege of its assignment should be tied to obligations to meet national socio-economic objectives and the country's development goals. Licensees should have universal service obligations associated with their spectrum assignments that comply with the following principles:

- **Competitively neutral and non-discriminatory -** Licensees assigned spectrum in similar bands must have similar universal service obligations. The obligations should include incentives for efficiency and should not distort the market.
- **Transparent -** Universal service obligations should be imposed in a transparent manner and should be publically available. Furthermore, annual reports on licensees' compliance with these obligations should be made available to the public. Decisions that are taken independently by an operator cannot be considered as obligations.
- **Clear Targets–** Obligations should be specific, attainable and measurable and should be evaluated on an annual basis, as a condition of renewal of the frequency spectrum licence.

The regulator must obtain the Minister's approval on the nature and form of all universal service obligations before they are imposed on any spectrum licensees as a way of ensuring that the obligations are coordinated, relevant and aligned with national policy objectives and priorities.

- **Spectrum Fees**

One way of managing demand for a limited resource is to charge fees for its use. Spectrum pricing is a fundamental component of spectrum management. Spectrum pricing can be used as a tool to ensure that operators pay for spectrum usage through an appropriate fee system, and also to either encourage or discourage spectrum users to apply for and/or operate in particular frequency bands.

Government seeks to ensure economic efficiency in the use of the spectrum resource through application of spectrum fees for all spectrum users. Spectrum users are therefore required to pay for the privilege of using it through spectrum fees. Spectrum fees should:

- Apply to all licensed spectrum users, unless the spectrum user is exempted from payment through policy or policy direction issued by the Minister;
- Be set in a transparent manner and made publicly available;
- Maximise the economic benefits to the country obtained from use of the spectrum resource;
- Include sufficient incentives to promote efficiency;
- Be adjusted annually in accordance with the Consumer Price Index.

To align with the principle of transparency, the spectrum fee framework should be based on a methodology and/or factors that are clearly stipulated prior to their application. Administered Incentive Pricing (AIP) is a spectrum pricing method that has been adopted in a number of countries and is the preferred methodology for South Africa.

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AIP prices are based on factors such as inflation, technology, frequency band and geographic area covered. The model is 'administered' because prices are set by the Ministry, reflecting the opportunity cost of spectrum while incorporating potential 'incentive' properties.[64] Incentives can furthermore be issued by way of a policy directive if required. Generally, prices determined using AIP approximate the prices that might emerge in a market context, and are set at a level to encourage efficient use reflecting spectrum scarcity.

Going forward, a distinction will be made between the AIP-based spectrum fee for commercial use and for use for the provision of services that meet clearly defined public interest goals, for example services that ensure the safety and the stability of the Republic and its citizens related to defence.

The government may set out a special dispensation for spectrum pricing, including reducing or waiving spectrum fees for a determined period as an incentive for licensees to provide services that meet clearly defined public interest goals and meet national objectives. Spectrum fees should promote efficiency in the use of the spectrum resource and deter spectrum hoarding. In order to mitigate against unintended policy outcomes that may arise from a reduction or waiver of spectrum fees, any determination published by the Minister will also include mechanisms to ensure that the spectrum allocated to those services is used efficiently to accommodate medium and long term needs of the Republic.

- **Spectrum sharing**

In the context of this policy, spectrum sharing refers to a collaborative effort which allows licensees allocated spectrum in the same or adjacent bands to harmonise their spectrum to enhance the utilisation of the radio frequency spectrum. As technology develops, it becomes more possible to do this without compromising the quality of services, while at the same time preventing harmful interference.

The principle of sharing recognises that radio frequency spectrum is a scarce resource, which should be accessed by all who need it to meet their communications needs. It also supports 'open spectrum,' and the open access principles that are central to this White Paper. The sharing of radio frequencies among licensed services and users is a key spectrum management tool that supports the view that spectrum is a public good, addresses the problem of spectrum scarcity and promotes efficiency.

An open access or spectrum commons approach is already in place in the ***licence exempt but regulated bands*** which provide for shared access to non-exclusive use spectrum. This spectrum, which includes bands such as the Industrial, Scientific and Medical (ISM) bands, is currently technically well managed through restrictions that are imposed through SAFTA and associated regulations on what devices, uses, and users are permitted (i.e., only those that are in compliance with the rules).[65] In line with international best practice, communication devices such as remote controls, alarm systems and Wi-Fi applications can be used without a licence, but must mitigate any interference from other ISM equipment such as microwave ovens. Wi-Fi, which uses such spectrum, has potential for use as an affordable technology that can complement other technologies in bridging the digital divide. In light of the clear and effective rules governing the use of this spectrum, no changes are proposed to the spectrum sharing regime for licence-exempt, but regulated applications.

[64] ICT Regulation Toolkit, http://www.ictregulationtoolkit.org/5.5
[65] Managing Shared Access to Spectrum, Lehr and Crowcroft. http://www.comlab.hut.fi/studies/4210/papers/8_2.pdf

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Spectrum sharing in licensed bands has to be done between licensed entities and based on clearly defined criteria and conditions. The following principles will be applied to ensure this:

- The collective use of spectrum and the shared use of spectrum is encouraged, while taking into account spectrum efficiency and operational requirements of services
- Radio frequency sharing shall be based on geographical, time or frequency separation or a combination of these. Different applications using the same radio frequency band is possible provided that it is coordinated and the interference risk is reduced to a tolerable level.
- The sharing of frequencies should not compromise the provision of emergency services and other services that meet clearly defined public interest goals.

Each instance of spectrum sharing in licensed bands shall require rigorous oversight from the regulator, and such sharing arrangements must be lodged with and approved by the regulator prior to their implementation. The regulator should be concerned with:

- The impact of sharing arrangements on competition;
- Ensuring that spectrum sharing does not constitute spectrum trading or pooling, in terms of which primary users of a spectrum allocation rent out use of unused parts of their allocation to secondary users. If it is found that a 'sharing' arrangement will result in spectrum trading or pooling, provisions on spectrum trading set out below will apply.

Dynamic spectrum access, which is in its early stages of development, is an advanced and opportunistic approach to spectrum management that is closely related to other management techniques such as flexible spectrum management and spectrum trading. According to the World Bank and ITU, it involves utilising spectrum "*in terms of time slots and/or geographically. This allows users to access a particular piece of spectrum for a defined time period or in a defined area which they cannot exceed without re-applying for the resource*."[66] Dynamic spectrum access is allowed on condition that it is within the guidelines provided by the regulator.

The regulator will be required to issue spectrum sharing guidelines, including provisions on dynamic and opportunistic spectrum access, in line with this policy.

- **Spectrum trading**

Spectrum trading refers to the re-sale, leasing or sub-letting of spectrum by a licensee to a third party, whether on a stand-alone basis or as part of a business that is being purchased. Spectrum trading contributes to a more economically efficient use of frequencies. This is because a spectrum trade will only take place if the spectrum is worth more to the new user than it was to the old user, reflecting the greater economic benefit the new user expects to derive from its use.[67]

Both the NDP and the EC Act propose permission for spectrum trading. The ICT Advisory Panel, however, argued that there is no clear value proposition in respect of trading. It noted that while licensed entities may realise economic value from trading, the trading of a public resource does not necessarily result in public value which is the ultimate objective of Government. In reconciling these two positions, this policy confirms that:

[66] http://www.ictregulationtoolkit.org/5.4
[67] ICT Regulation Toolkit, http://www.ictregulationtoolkit.org/5.4

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- ***Spectrum trading of non-high demand spectrum is permissible*.** The regulator must however approve the trading of any spectrum to ensure that competition is not distorted by any spectrum trade or by the accumulation and hoarding of spectrum rights of use. Any licence obligations will be passed on to the new user of the frequency spectrum resource. The licensee trading the spectrum must have used the frequency spectrum resource in the year prior to the sale to ensure that the trade is not used to subvert the 'use it or lose it' principle. The licensee should also be in compliance with all relevant legislation. The new licence holder must be approved by the regulator which must be provided with all of the details of the transaction including the legal, technical and financial terms and conditions to ensure that the trading does not undermine policy objectives.

- ***Trading of high demand spectrum is not permissible***. Any unused high demand spectrum must be returned to the regulator. The trading of high demand spectrum would perpetuate the current market structure which places inherent value in spectrum and its exclusive use. It would furthermore undermine the 'use it or lose it' principles, and the application of open access provisions to networks using high demand spectrum.

The Minister may make a determination in respect of trading in spectrum or spectrum use rights in order to fulfil specific national objectives.

- **Refarming**

Refarming refers to the re-use of an assigned frequency band for a different technology. For example, the 1800 MHz spectrum was initially used by mobile operators to provide 2G GSM services and it is now refarmed for 4G LTE. While South Africa's licensing regime is technology neutral, thus giving licensees the rights to use the spectrum assigned to them for any technology, it is noted that a change in technology may have pricing implications based on the technology factor that is applied in the AIP-based pricing regime. It furthermore has implications if refarming results in a band that was not in high demand, becoming a high demand spectrum band.

Licensees who refarm spectrum that has been assigned to them should be transparent and should report the refarming of spectrum to the regulator. Refarming cannot be used by licensees in order to reduce licence fees, or entrench existing rights or any associated market power. It should also not be used as a loophole to avoid the imposition of obligations that other similarly situated spectrum has attracted. Refarmed spectrum will be treated in terms of its new use to the extent that pricing and/ or obligations are impacted.

9.2.5.3.1 Migration

Migration refers to the moving of services from one spectrum band to another. Migration is a recognised feature of spectrum management and might be necessitated due to a change in:

- Technical conditions for frequency assignments;
- Application (particular radio communication system using the band);
- Allocation to a different radio communication service

Any migration process must be completed within 5 years once a policy decision to migrate has been taken unless there are compelling reasons otherwise. South Africa's international commitments must always be borne in mind in setting migration timeframes and deadlines.

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The ICT Policy Review Panel raised the question of how licensees should be compensated in the event of migration and proposed a number of approaches that could be used. Further to the Panel's input and representations from the industry, the following approach will be adopted:

- It is the Minister's prerogative to decide whether there is a need for cost recovery and if so how it will be addressed. The Minister in making this decision will consider the assigned party's licence conditions and the nature and impact of the migration. If the Minister confirms the need for compensation, s/he will determine what approach should be adopted – taking into account the particular circumstances. For example, the incoming licensee might be required to compensate the outgoing licensee for the cost of migrating.
- Migration will preferably occur at the end-of-life of equipment when costs are minimal, subject to five (5) year migration principle.

- **'Use it or Lose it' Principle**

For varying reasons, in some instances spectrum will not be used. In such cases the following principles apply:

- Assigned spectrum shall not remain unused for a period of more than a year, as per the licensing period.
- If it is not used, the 'use it or lose it' principle will be applied and it must be returned to the regulator.
- Passive science services, due to the nature of their operations which do not transmit signals frequently, will be exempted from this provision. In addition, under special consideration and upon good cause shown, SMMEs and new entrants may be exempted from the stipulated time frame.

Government is committed to the strict application of the "use it or lose it" principles to all spectrum.

- **Unassigned spectrum**

Unassigned spectrum may be assigned on a short -term basis for test or research and development purposes. Such short-term assignment does not give the user any rights to a future long-term assignment, and must be terminated if a bona fide application for the spectrum is received and successfully processed.

- **Monitoring, enforcement and spectrum audits**

As a way of monitoring and enforcing the spectrum management regime, licensees must file annual reports to the Ministry and the regulator on the usage of spectrum that has been assigned to them. This will be a condition for the annual renewal of the licence. The reports should be submitted at the time of the renewal of the spectrum licences and should include information relating to the licensee's:

- Frequency;
- Bandwidth;
- Geographic location;
- Effective radiated power;
- Utilisation of the network;
- Efficiency and technology utilised;

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- Network rollout;
- Investment in the network;
- Achievement of spectrum license obligations, as applicable; and
- Alignment of its network plans with national objectives and targets

The information obtained will form the basis of regular audits to be carried out by the regulator and provided to the policy maker to support the outcomes and implementation of the Open Access Policy, Rapid Deployment Policy and any other regulations, policies and laws governing the sector. Audit results will be made publically available.

Spectrum holders may be technically audited by the regulator at any time to ensure efficient spectrum utilisation such that the 'use it or lose it' principle is applied without discretion.

The regulator needs to be equipped to deal with queries and issues arising from the assignment of the spectrum resource. It should also be able to effectively adjudicate spectrum disputes that may arise. To give effect to its monitoring and enforcement function, the regulator has to put in place and maintain a database of information that enables it to monitor and assess the usage of spectrum. The database should be implemented as soon as possible and should include additional tools to analyse data on spectrum historical occupancy/usage and to interpret alternative propagation models.

9.2.5.4 Facilitating an open access spectrum licensing regime

One of the concerns identified above relates to the perpetuation of an exclusive licensing regime where spectrum is treated as though it is private property rather than a public good. This section of the policy addresses that issue and deals with both general spectrum which is not in high demand and that which is in high demand.

- **Determination of high demand spectrum bands**

As discussed earlier, "high demand spectrum" in the context of this White Paper refers to spectrum where (1) demand for access to the radio spectrum resource exceeds supply, or (2) radio spectrum is fully assigned. Both situations can be addressed through a paradigm shift in current spectrum management practices.

The level of demand can be ascertained through an understanding of the projections for the growth of a market – in this case the mobile broadband market - and also by projecting the increase in the proliferation of devices that support new technologies. Bearing this in mind, all IMT spectrum, which is essentially mobile broadband spectrum, meets the first criteria for 'high demand spectrum,' as demand for the resource exceeds supply. IMT spectrum includes but is not limited to the 700 MHz, 800 MHz and 2600 MHz bands, as updated from time to time in National Radio Frequency Plan. It also includes the bands recently designated at the WRC-15, namely 1 427-1 518 MHz, 3 300-3 400 MHz, and 3 400-3 600 MHz.

Recognising the rapid speed of technological developments in the ICT sector, the Minister, in consultation with the regulator, may determine any other spectrum as high-demand spectrum, from time to time. Government will, within the short term assess whether the terrestrial television bands, FM bands, land mobile bands, or any other bands where there is high congestion and/ or where demand exceeds supply may be classified as "high demand". In the event that such designation is made, such bands must be treated in line with the principles set out in this policy.

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- **Set Aside of High Demand bands for Wireless Open Access**

Where spectrum is considered to be 'high demand' , in line with the principle of non-exclusivity, it must be used as a public good to support the broader policy objective of open access and therefore minimise infrastructure duplication, reduce costs and spur service based competition. As such:

- All high demand spectrum will be assigned on an open access basis.
- All currently unassigned high demand spectrum will be set aside for assignment to the Wireless Open Access Network (see above) and will be treated in line with the above policy principle.
- The regulator will be required following adoption of this White Paper to conduct an industry wide public consultation process to determine the terms and conditions, as well as the time frame, under which the currently exclusively/individually assigned high demand spectrum will be returned in accordance this policy. These terms and conditions will take into account the following:
  - Market developments
  - Projected extent of availability of open access networks

The regulator, upon completion of this consultative process must make recommendations for the Minister's approval on the terms and conditions which will apply to the network and currently assigned high demand spectrum.

This decision to set aside spectrum for use for open access is in line with the recommendations of the ICT Review Panel which indicated support for the open access model advocated in the SA Connect broadband policy. ICT Panel recommended that "*high demand spectrum should thus be set aside for an open network that will sell wholesale access to new and established operators*."[68]

- **Spectrum which is not in "high demand"**

Where there is sufficient spectrum to meet current market demand, for example in spectrum bands above 30 GHz used for fixed services (e.g. microwave spectrum, fixed wireless access and satellite), the spectrum scarcity 'problem' defined at the outset of this policy is not as acute. In such instances, spectrum must be issued on a non-exclusive basis, and there is no immediate need for a change to the 'first come, first served' approach to the licensing of such spectrum.

Even though no change is envisaged, the imperative to reduce duplication and encourage efficiency and sharing remains. In light of this,

- The use of best-fit spectrum for intended applications is encouraged;
- The spectrum pricing framework will be applied to encourage efficiency;
- Openness and infrastructure sharing are encouraged ;
- Reporting requirements are proposed to facilitate effective monitoring and enforcement; and
- The undertaking of regular audits is supported.

Further, in order to reduce the turnaround time for coordination and approval process in bands that are not considered 'high demand,' the regulator will be required to introduce an automated spectrum licensing system.

[68] ICT Panel Recommendation Report, page 52

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9.2.5.5 Spectrum for sector specific use and for services that meet clearly defined public interest goals

Government will continue to provide for the allocation of spectrum for safety of life services, sector-specific use, security services, and for scientific research. Emanating from its allocation function, the Ministry will ensure that sufficient sector-specific spectrum and spectrum for services that meet clearly defined public interest goals (including that used for fire and ambulance services for PPDR) is secured and protected and, as far as it is practically possible, harmonised internationally and/or regionally. It will furthermore ensure that there is coordination in assignment activities across various sectors.

- **Coordination in assignment activities**

The regulator will be responsible for assigning spectrum to sector-specific agencies. Sector-specific agencies will, in turn, be responsible for assigning spectrum to and registering users of frequencies in their industry. Each sector-specific agency will account to the regulator for the use of the spectrum assigned to it and will remain responsible for ensuring that the spectrum is used in line with relevant regulations and policies. Sector-specific agencies will have to report to the regulator on an on-going basis and more frequently than other users of the spectrum resource, so that the regulator at all times has a complete view of all users of the frequency spectrum resource.

Sharing of sector-specific spectrum and spectrum used for services that meet clearly defined public interest goals may be approved where practically possible and provided that such sharing does not compromise the functions for which the spectrum was intended. In order to effectively implement this policy:

- The Ministry, the regulator and the sector-specific agencies should enter into a Memorandum of Understanding (MoU) to enable the regulator to play its monitoring and enforcement role, while avoiding bureaucracy and improving administrative efficiency by enabling end users to register with sector-specific agencies through a simple process.
- The regulator will be required to develop a database with real-time updates.

- **Spectrum for safety of life services**

Safety-of-life services are among those that meet a clearly defined public interest objective. In addition to the approach generally taken to spectrum used for services that meet clearly defined public interest goals, the international spectrum regulatory framework has, as one of its founding principles, the availability and protection from harmful interference of frequencies provided for distress and safety purposes. Priority of access to spectrum must be given to safety of life services including public safety and security communications.

- **Spectrum for security services**

The allocation of radio frequency spectrum for the exclusive use of security services to be included in National Radio Frequency Plan will be determined by the Minister in consultation with the security services.

As discussed earlier in this policy, a distinction will be made between the AIP-based spectrum fee for commercial use and for use for the provision of services that meet clearly defined public interest goals. These services include security services. The Minister may reduce or waive spectrum fees for spectrum used by security services.

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- **Spectrum for scientific research**

Government is conscious of the role that radio frequency spectrum plays in environmental and climate change monitoring, including weather forecasting natural disaster predictions, detection and mitigation. Consequently, spectrum will be made available, as far as possible, to support and promote scientific research that, among other things, assists in the process of understanding climate change and the implementation of measures to mitigate its impact

Government will continue to support long-term availability of frequency bands essential to achieve the goals of Earth Exploration Satellite Services, Space Research Services, Space Operation Services, Radio Astronomy Services, Meteorological Satellite Service, Meteorological Aid Services and Radiolocation Services.

9.2.5.6 Spectrum to support broadcasting services

The Policy will continue to recognise that there is need for the allocation of adequate radio frequency spectrum to enable the provision of free to air and other broadcasting activities in recognition of the important role that broadcasting plays in a fostering democracy. This will be achieved through the allocation and preservation of specific bands for broadcasting and audio visual services. These bands will be identified and allocated in the National Radio Frequency Plan.

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9.3 Rapid Deployment Policy

> ***"By 2030 ….the underlying ICT infrastructure and institutions …ecosystem of digital networks, services, applications, content and devices, firmly integrated in the economic and social fabric, will connect public administration and the active citizen; promote economic growth, development and competitiveness; drive the creation of decent work; underpin nation building and strengthen social cohesion; and support local, national and regional integration."***
>
> The National Development Plan

"Rapid deployment" refers to the process of gaining access to and using property, including buildings and land such as waterways, roads, railways, footpaths and tunnels, to deploy electronic communications networks. This process can take a long time and have a significant impact on direct and indirect costs. Any delays in the rollout of critical broadband infrastructure will undermine the vision of an inclusive digital society and knowledge economy in this White Paper.

The purpose of this Rapid Deployment policy is thus to provide a simplified, streamlined and coordinated framework, supported by clear strategies and measures, to accelerate the infrastructure deployment process as far as possible. It starts from the premise that electronic communications network service (ECNS) licensees have the right to access any property in order to deploy their networks and that in exercising their rights they are bound by considerations of administrative justice and in particular "*reasonableness and due care*". [69]

9.3.1 Context

There are currently no uniform nationwide requirements for granting permits and authorisations for the rollout of electronic communications network ("ECN") infrastructure such as towers and ducts or for the use of existing public infrastructure. There are few legislated or regulated deadlines for granting them and landowners have wide discretion to dictate terms for access to their property. This delays network rollout and increases costs, as well as causes legal disputes between operators and landowners. If this situation is not addressed, it will hamper the implementation of the "South Africa Connect" ("SA Connect"), the national broadband policy.

Infrastructure deployment is core to meeting the National Development Plan (NDP) goals with respect to strengthening the South African economy, as well as the broadband targets set out in "SA Connect". Clarifying the regime for rapid deployment is one of the actions identified in the national broadband plan as part of improving the policy and regulatory environment for broadband deployment.

The Infrastructure Development Act (IDA), which came into effect in 2014, and formalised the Presidential Infrastructure Coordinating Committee (PICC), which was established in 2012, also applies to deployment of ICT infrastructure. The PICC's role is to co-ordinate, integrate and accelerate the implementation of a single common National Infrastructure Plan. It has a number of Strategic Infrastructure Programmes (SIPs) and SIP 15, championed by the Minister of

[69] *City of Tshwane Metropolitan Municipality v. Link Africa (Pty) Ltd and Others* (CCT 184/14) [2015] ZACC 29

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Telecommunications and Postal Services is focused on "*expanding access to communication technology*."

9.3.1.1 Scope of policy

This policy is concerned with the deployment of electronic communications facilities, which are defined in legislation as including wires, wiring in multi-tenant buildings, cables (including undersea and land-based fibre optic cables) antennae, masts, radio apparatus, exchange buildings, space on or within poles, ducts, cable trays, manholes, hand holds and conduits. While a wide range of infrastructure types are therefore covered by this policy, practical considerations and the national importance of broadband mean the primary focus is on the deployment of optical fibre cable and wireless base stations.

In that regard the main infrastructure deployment challenges requiring policy intervention relate to the deployment of:

- Underground fibre and ducts;
- Premises fibre and ducts, including in business parks and on private land;
- Aerial fibre, deployed on poles;
- High sites, including rooftops for wireless sites; and
- Masts and towers, and land or other property for such towers.

Rights of access may be authorised in a number of different ways, but are usually processed through instruments known as "wayleaves" (rights of use) and "rights of way". Simply put, wayleaves and rights of way are consents to do certain things; servitudes are the more formal legal rights to land, which is registered against the title deed of a property (this passes with the property and remains in force in favour of the holder of the servitude despite a change in ownership of the land). A servitude endures for a long period of time, whereas wayleaves and rights of way can be for one-time access only, or for a limited period of time.

Wayleaves, rights of way and servitudes ("approvals and permits") are sought from a variety of institutions operating in different spheres of government. A fundamental consideration in developing this policy is the constraints imposed by the Constitution.[70] This envisages separate powers for different spheres of government, with each sphere, despite its own jurisdictional influences, working together with other spheres to give effect to national priorities (such as broadband deployment). The Constitution states that the different spheres of Government (national, provincial and local) will "*perform their functions in a manner that does not encroach on the geographical, functional or institutional integrity of government in another sphere"* but also provides that the different spheres must co-operate with "*one another in mutual trust and good faith by … coordinating their actions and legislation with one another; … adhering to agreed procedures; and avoiding legal proceedings against one another*".[71]

[70] Constitution, Act No. 108 of 1996.

[71] Chapter 3 (sections 40 and 41), "*Co-operative Government*".

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9.3.1.2 Challenges

This policy provides a framework for parties within and outside the ICT sector on the manner in which ECNS licensees can access property. It sets out the principles that govern the rights of all parties involved and addresses the following challenges in relation to rapid deployment:

- The need to balance the rights of ECNS licensees to enter onto property to deploy critical broadband infrastructure with those of public and private landowners;
- The duplication of infrastructure and its negative impacts on the environment; and
- The lack of coordination between large numbers of affected stakeholders across different sectors.

Each of these challenges is discussed in turn:

- **Balancing the rights of licensees to enter property**

In 2015 the Constitutional Court ruled that ECNS licensees have the right to enter upon any property to deploy electronic communications network infrastructure[72] The Court specified in this regard however that the EC Act does not permit the arbitrary deprivation of property and must be interpreted in accordance with the spirit, purport and object of the Bill of Rights in a manner that preserves its constitutional validity. This judgement has wide-ranging implications for ECNS licensees, in that they now have the right to enter upon any property without the consent of the landowner to deploy electronic communications network infrastructure, provided that they exercise these rights respectfully and with due caution. The challenge is to apply this right to the approval process that is in place at local, provincial and national levels for gaining access to public and private property.

- **Duplication of infrastructure with a negative impact on the environment**

Currently roads, new buildings and other infrastructure projects are not required to take into account ICT infrastructure in their planning. As a result, although it may be more efficient to, for example, lay fibre when the road is being developed, this is not done. The result is an uncoordinated and inefficient approach to ICT infrastructure deployment, additional costs and delays in the deployment process. It also results in environmental degradation through either infrastructure duplication, or by repeatedly conducting processes with potential negative environmental impacts, such as digging and trenching.

- **Lack of coordination between stakeholders in different sectors**

The problem of lack of coordination was highlighted by the ICT Policy Review Panel as key. The Panel recommendations were however made in March 2015, prior to the Constitutional Court ruling of September 2015 and some of the issues have therefore subsequently been clarified. The following factors contribute towards the lack of coordination:

- ***Unclear institutional framework:*** There are many stakeholders involved in the infrastructure deployment process, at a national, provincial and local government level. In addition licensees and a range of regulators have critical roles to play in the process, and varying interests to protect. These role players are not coordinated and in some cases are not aware of each other's roles and responsibilities. This leads to overlaps, inconsistent processes and delays in the issuing of approvals.

[72] *City of Tshwane Metropolitan Municipality v. Link Africa (Pty) Ltd and Others* (CCT 184/14) [2015] ZACC 29

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- ***Existing processes, procedures and fees are not streamlined:*** There is "*no central co-ordination, no consistency in process, no benchmark for pricing, lack of specificity in laws and regulations, failure to implement some regulations, and no clear method for determining exactly what constitutes 'the public interest'*".[73] Essentially, there is no standard process for obtaining rights of way, wayleaves and servitudes. Not only do the processes and procedures required to obtain approvals differ between municipalities and other landholders, but in many cases these processes are unnecessarily time-consuming and cumbersome.

  For example, municipalities reportedly tend to have differing requirements for standards of work – and stakeholders have claimed that at times they apply these standards inconsistently. Some municipalities, including City of Johannesburg and City of Tshwane, for example, will not allow micro-trenching or slot-cutting on local roads as this supposedly damages the integrity of the road surface, while others do. Where the ban is in place there have been reports that it is arbitrarily applied.

  Research by the DTPS has confirmed such inconsistencies. This is concerning as municipalities have competence in relation to property such as municipal roads, traffic, parking, street lights, fencing, storm water management including drains, billboards and advertising, potable water supply, domestic waste and sewage, electricity and gas reticulation, and municipal public works. Provincial government has responsibility for provincial roads and traffic and public works and housing. National competencies include national roads (SANRAL), electricity supply (Eskom), environmental approvals (DEA), telecommunications rights of way (DTPS) etc.

  The same challenge of lack of streamlining applies to fees: There is no consistent fee structure for approvals and permits. In addition Environmental Impact Assessments (EIA), which are required in terms of the National Environmental Management Act (NEMA), require an additional administrative process, which is not aligned with other processes in the rapid deployment value chain. Finally, the challenge with respect to existing processes is exacerbated by the fact that they are manual in many cases.

  As a result of this, an ECNS licensee has to deal with a multitude of requirements to obtain approvals for essentially the same thing, especially if the licensee deploys national or even provincial infrastructure. This increases the administrative burden borne by licensees, the time to deploy, as well as the costs of deployment and ultimately investment in the network.
  The ICT Review Panel proposed a "one stop shop" to address this. However Government consultation in 2015 found that there are conflicting views on whether this would be appropriate.

[73] DTPS Discussion Paper on the Development of a Rapid Deployment Policy for Electronic Communications Infrastructure (2015)

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9.3.2 Objectives

The objectives of this policy are to:

- **Balance the rights** of electronic communications network service licensees to enter onto private and public land with the rights of landowners;
- **Facilitate access to rights of way, way-leaves and servitudes ("approvals and permits")** in order to allow for the rapid deployment of infrastructure and enable the deployment of electronic communications infrastructure in an efficient, cost-effective, environmentally responsible manner that is in the public interest;
- **Promote strong intergovernmental relations** while at the same time respecting the unique functions of the various stakeholders that have a role to play a municipal, local and national government level.
- Enable the deployment of electronic communications infrastructure in an **efficient, cost-effective, environmentally responsible manner** that is in the public interest so far as possible;
- **Avoid unnecessary duplication of infrastructure and in so doing to promote competition** in the provision of high quality, innovative and affordable services;
- **Facilitate the achievement of the goals and targets set out in the National Broadband Policy, 2013 ("SA Connect") and other national policies** regarding the access to and availability of electronic communications services by other licensees and the public by speeding up the process for infrastructure deployment;
- **Promote and facilitate a consistent, simple and co-ordinated approach among government departments and agencies to formulate, process and determine applications for planning approvals, permits** and other assents for deployment and construction of electronic communications infrastructure, and to expedite these processes particularly through promoting capacitation of local authorities;
- **Reduce or eliminate inconvenience to the public and unnecessary damage**, including to aesthetics or amenity, to land, property, existing premises and infrastructure in deploying and making use of electronic communications infrastructure;
- **Promote the sharing of infrastructure** between property owners and infrastructure providers, especially where it has already been deployed in complexes, office parks, estates and other types of shared buildings, to reduce deployment times and increase efficiency. It also encourages the use of common publicly owned facilities including roads, and electricity to achieve the goals of rapid deployment; and,
- **Establish a forum for stakeholders** such as government departments, property owners and infrastructure providers to collaborate and to coordinate their efforts.

9.3.3 Goals

This policy:

- Provides a framework for ECNS licensees and landowners to work together for the public benefit while upholding the right of ECNS licensees to access property in order to deploy their networks;
- Simplifies, streamlines, co-ordinates and ultimately accelerates the infrastructure deployment process to enable the sustainable and environmentally sound deployment of critical broadband infrastructure.

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9.3.4 Principles

The principles that underpin this policy are:

- **ICT networks are key infrastructure** necessary for socio-economic development and attainment of national developmental, social and economic goals and objectives
- **ECNS licensees have the right** to enter upon any property to deploy electronic communications network infrastructure, provided that they exercise these rights respectfully and with due caution
- The deployment of electronic communications facilities must be done in an **environmentally friendly manner,** avoiding duplication of infrastructure wherever possible.
- **Rapid approvals to access property** to deploy electronic communications facilities and the avoidance in unnecessary delays in granting such access
- **Coordination and cooperation** between access providers and seekers, to the extent possible on an open access basis
- **Transparency** is key in order to reduce the administrative burden associated with obtaining approvals and permits; and to ensure reasonable pricing
- **Access to communications is a national priority** as such all town planners and human settlement developers should include the provision of ICT services in their plans

9.3.5 Interventions

The interventions outlined below apply to stakeholders within and outside the ICT sector.

9.3.5.1 Application of the principles of reasonableness and due caution

Government is committed to increasing access to ICTs, and in particular broadband, in light of the central role of broadband in driving a digital society and meeting national socio-economic objectives and goals. As such, ICT infrastructure is considered critical infrastructure. As has been upheld by the Constitutional Court, ECNS licensees have the right to enter into and use property for the deployment of such infrastructure; however in exercising their rights to access private and public land, the ECNS licensees should exercise reasonableness and due caution when they engage with property owners.

Network licensees are entitled to select appropriate premises based on their network rollout strategies and plans and gain access to such premises for the purposes of constructing, maintaining, altering or removing their electronic communications networks or facilities This selection must be done in a civil and reasonable manner, including giving reasonable notice to the owner of the property where the ECNS licensee intends locating its electronic communications facility. Access to the property must be determined in consultation with the owner.

Compensation in proportion to the disadvantages suffered by the owner should be payable in respect of the exercise of the ECNS licensees rights.

The following principles must be adhered to so as to demonstrate 'reasonableness and due caution':

- **Reasonable notification:** An ECNS licensee must give written notice of its proposed property access activity to an owner and/or occupier of the affected land. This notice must specify why the licensee intends to engage in the activity, outline the objection process to its plans and provide environmental, health and safety information, as applicable. In turn, an owner has

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limited rights of objection to the proposed property access activity (see below under "Opportunity for Objection).

Notwithstanding the rights of licensees to enter upon any property, licensees must seek prior permission from the landowner, provide all information required by the automated application process and obtain a wayleave certificate from the concerned authority. This wayleave should specify information such as the presence of other infrastructure (e.g. water pipes and electricity cables, gas pipes, etc.) in the area. The wayleave should also indicate the depth of these services below the surface. Thus, the landowner has a key role to play in providing accurate information as to the suitability of the property for use by the ECNS and the presence of other infrastructure. As such, the approval process cannot be bypassed.

- **Opportunity for Objection**: A landowner may object at least 14 days before the ECNS licensee plans to start work *only* if the proposed electronic communication facility will cause significant interference with the property. The matter may either be resolved by agreement or through the regulator. Alternative arrangements need to be put in place if the landowner cannot be located.
- **Minimal damage:** Licensees should do as little damage as practicable, act according to good engineering practice, and take all reasonable steps to ensure that property is restored to a condition similar to that before the activity began. ECNS licensees must ensure the design, planning and installation of the facility follow best practice and comply with regulatory or industry standards. They must also undertake to repair any damage caused by the installation and restore the property to its former state.
- **Minimal interference:** Licensees should take all reasonable steps to ensure the activity interferes as little as practicable with the operations of a public utility.
- **Transparency:** ECNS licensees must maintain records about the type and location of certain facilities and update the centralized GIS Database
- **Sharing and avoidance of duplication:** ECNS licensees must uphold the principle of sharing and avoid unnecessary duplication by taking all reasonable steps to make use of existing facilities for the activity and making reasonable efforts to cooperate with other ECNS licensees and public utilities undertaking similar activities on the same property to minimise inconvenience and damage.

ECNS licensees, and their contractors, must at all times balance their rights with broader social and environmental goals. In so doing they should comply with good engineering practice and consider noise limits, the environment, and obstruction of essential services when installing or maintaining facilities.

ECNS licensees retain ownership over any infrastructure they install, including cables. Property owners have a duty of care to ECNS licensees under common law. If an ECNS licensee is able to demonstrate that a landowner has deliberately or negligently caused damage to any infrastructure situated on their property, the ECNS licensee should be able to seek damages from the landowner in a court of law.

9.3.5.2 Principles of non-discrimination and fair competition

No electronic communications licensee can gain undue advantage due to the behaviour of landowners. Property owners must act on all similar requests to access their land or other property within a reasonable time, taking into account the nature and scope of the request and electronic communications network service providers must be treated equally by landowners. Non-

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discrimination applies to impositions of technical standards and property owners are not allowed to impose different setback, height, or safety restrictions in residential and commercial zones. Similarly, there must be consistency in the time taken by authorities to grant approvals for the deployment of electronic communication facilities.

Any request and decision accepting or denying a request must be in writing and substantiated by evidence contained in the written record of the decision-making body.

9.3.5.3 Approval of applications and permits

- **Process and Timelines**

Approvals for rapid deployment will take place at municipal level. Municipalities shall, when planning municipal infrastructure, make provision for the installation of ICT infrastructure such as fibre ducts. This will enable proper planning and reduce the incidences of duplication of infrastructure. In light of the cross cutting and significant impact of ICT on development at municipal, provincial and national levels, and the need to keep the cost of the deployment of ICT infrastructure low, the creation of wayleaves for the installation of ICT infrastructure must be done at cost.

Municipalities are obliged to provide information on municipal infrastructure, including plans for ICT infrastructure, to the appropriate coordinating structure in a digitised format for easy retrieval and processing.

- **Application Process**

The process for the rollout of electronic communications facilities is as follows:

- Identify site or fibre route;
- Conduct site survey/design plan of fibre route;
- Conduct environmental impact assessment;
- Obtain civil aviation authority permission (for erection of masts if necessary);
- Obtain town planning approval; and
- Obtain building plan approval

The EIA process is a key part of the infrastructure deployment process and currently takes between 6 and 18 months, and up to 24 months if there are objections. Civil Aviation Authority ("CAA") approval for the erection of masts takes up to 18 months. Town-planning schemes/rezoning approval can take up to two years. Furthermore, building-plan approval can take anywhere from one to 18 months. The timeframes are exacerbated by the fact that currently, licensees must apply for these approvals sequentially rather than in parallel.

All processes relating to the implementation of electronic communication facilities, including processes relating to applications for any approval, authorisation, licence, permission or exemption and processes relating to any consultation and participation required by the relevant laws must, as far as it is possible and in order to expedite the matter, run concurrently in order to expedite the deployment of electronic communications infrastructure.

- **Common and minimum Information to be provided**

Each Authority has its own application process and requires its own unique information. The Ministry will co-operate with various authorities to obtain the application process and minimum information requirements, including:

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- Contact details of applicant
- Name of contractor (if applicable)
- Location of the infrastructure deployment
- Start date of the infrastructure &
- End date of the infrastructure
- Nature of work
- Base stations
- Fibre route
- Relevant engineering drawings

The Infrastructure Development Act provides for the facilitation and co-ordination of public infrastructure development which is of significant economic or social importance to the Republic to ensure that infrastructure development is given priority in planning, approval and implementation. Broadband infrastructure is one such type of infrastructure. The process and periods of time for the deployment of infrastructure for strategic integrated projects is set out in the Act. However this legislative process takes almost a year from the submission of the application to the relevant authority making the final regulatory decision. The timelines are realistic in the case of infrastructure such as roads, railways and dams, but are far too long in the fast moving environment of electronic communications infrastructure.

In the case of deployment of electronic communications facilities, where possible, notification and application procedures for rapid deployment should take no more than a month from date of submission of all relevant documents, to date of final decision by the relevant entities. Entities must communicate with applicants, as soon as possible and certainly within a month, if any delay beyond a month is expected – in the latter case they should indicate reasons for the delay.

The planning process for rapid deployment will be initiated by the entity seeking to roll-out infrastructure through an application to the relevant authority. Any authority responsible for granting approvals and permits for the deployment of ICT infrastructure must:

- Ensure that its employees are familiar with this and other relevant policies.
- Acknowledge receipt of a request within a week, and indicate any omissions as regards the application, if any;
- Must not refer the request back to the requesting party after providing confirmation for additional information or changes to the request.
- Not unduly delay the granting of permissions, or place injudicious conditions on the deployment of electronic communications network infrastructure;
- Must enforce only reasonable conditions stipulated in the applicable standard for any works in the road reserve or other land;
- Ensure and enforce compliance with reasonable conditions and standards;
- Not decline an application for access to sites without due reason. Any refusal must be in writing to the ECNS licensee and provide evidence and sound reasons as to why such permission was not granted.
- No by-law, regulation or local legal requirement, may prohibit or have the effect of prohibiting the ability of any ECNS licensee to provide any electronic communications services.

  - **Automation of approval and permit systems**

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It is expected that an improved digitised and automated GIS database which co-ordinates approval and permit systems and which makes it possible to identify available sites and permissions will simplify the achievement of rapid deployment. This coordinated GIS is critical to reducing the timeframes for the property owners to revert to ECNS licensees once an application for approval is lodged. The GIS database should:

- Be a central database or set of linked databases that record locations and planned locations of services infrastructure, which could include electronic communications cabling, ducts and high sites, and potentially also roads, electricity, gas, and water and sanitation.
- Include information such as location and depth of other infrastructure (such as water pipes and electricity cables, gas pipes, etc.) in the area;
- Be a means of expediting applications, avoiding bureaucratic red tape and enabling transparency using on-line tracking mechanisms.
- Be coordinated keeping in mind the requirements and sensitivities of the security services

The centralisation of the GIS is one of the recommendations arising from the ICT Review process. Access to such data could reduce planning complexity and promote sharing. In that regard, all licensees and service providers should submit detailed information on their infrastructure types and locations to local authorities and/or to relevant national agencies:

In the longer term, once the GIS has been established for a while and found to be stable, builders of new infrastructure will not be held liable for damage to existing infrastructure if the information has been supplied to the centralised GIS. This will serve as an incentive for licensees to provide critical information to the GIS, which is central to coordinating and implementing rapid deployment. It is important that an incentive is can only be introduced once the GIS has been established and all parties agree that it has effective and robust systems and is reliable.

The GIS database will be open to the extent that it does not compromise security or lead to anti-competitive outcomes. Relevant information in the database should be made available upon reasonable request to other licensees, other entities responsible for infrastructure, landholders and entities responsible for constructing new buildings. The Rapid Deployment Regulations should provide guidance on the structure of the database, its security and the manner in which is can be accessed.

An automated permit and application system supported by an up-to-date infrastructure GIS database for electronic communications and other service infrastructure must be developed following a definitive study on coverage and underserviced areas. The Department should work with the municipalities, landowners and other stakeholder to develop such GIS database in cooperation with the regulator within 24 months of the implementation of this policy

9.3.5.4 Reasonable compensation, fees and charges

Currently, each municipality, public-sector landholder (municipality or metro), state-owned company and private landholder can legitimately determine its own process, terms and price for these rights, provided such a price or tariff has been incorporated in the fee tariff of the municipality each year and published as a by-law under the Municipal Finance Management Act, ("MFMA"), where applicable. SALGA must endeavour to ensure uniformity in process and prices charged by Municipalities.

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Compensation for financial loss or damage - In exercising reasonableness and due caution, ECNS licensees must apply the principle of fair compensation. An owner of a property may be entitled to compensation for any financial loss or damage, whether permanent or temporary, caused by an ECNS licensee entering and inspecting land, or installing, deploying or maintaining electronic communications facilities. In the case of any dispute on compensation, such dispute will be settled by the regulator on an expedited basis. A claim for compensation is not a ground for objection to the use of the property by a licensee. If the amount of compensation cannot be agreed between the parties, the below-mentioned general principles should be taken into account and ultimately the regulator will decide on what is a reasonable amount.

Compensation for Access – Different types of infrastructure may attract different approaches to the levying of fees. The amount of compensation or fees for access to property should be based only on the actual costs of restoring the property to its original state and the extent to which the infrastructure is intrusive. To that end, fees for infrastructure, such as buried or overhead cabling, that does not constitute a cost to the landholder, or deprive the landholder of its own use of the land, should be kept as minimal as possible, and if possible should be at cost. The only fee that should be charged under these circumstances is an initiation fee, which should be set according to the administrative cost of dealing with the application and installation. Fees may be charged in cases where more intrusive facilities, such as masts, are erected on property. In such cases any rental charged must be reasonable and must not enrich the landowner or exploit the ECNS licenses.

Bearing in mind the requirements of the Public Financial Management and Municipal Finance Management Acts, public sector entities may provide in-kind contributions, including but not limited to anchor tenancy, in response to requests for the provision of duct, route changes or provision of additional services, among others. This is particularly encouraged in areas that are considered as priorities in terms of SA Connect and other national policies.

9.3.5.5 Access to high sites for radio-based systems

A high site is any structure or feature, constructed or natural, which is suitable for the erection of radio equipment to a designated geographic location. Such sites must be chosen for their ability to provide coverage of the required service area. Buildings or other existing structures can be used providing a suitable antenna system can be erected. In deciding the suitability of sites, the effects on coverage of local physical obstructions must be taken into account. The antenna height must be sufficient to clear obstructions in order to obtain satisfactory coverage.

The open access regime outlined in this White Paper complements this rapid deployment regime. Through the effective sharing of infrastructure, licensees can avoid many of the costs and delays associated with new wayleave and permit applications. Equally, the processes in general would likely be quicker as there may be fewer wayleave and permit applications to process. Open access and infrastructure sharing mechanisms reduce unnecessary and inefficient duplication and promote rapid deployment.

No owners of a radio site may refuse access to a licensee for the installation of broadband equipment unless it is technically not feasible to do so. Radio high sites at national, provincial and local government levels will be made available for broadband equipment installation at a cost-based rental and in line with open access principles and infrastructure sharing or facilities leasing regulations

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9.3.5.6 Access to trenches

This policy supports an open access, single trench approach wherever possible. There should be a single trench for fibre in each geographic location where it is technically feasible to do so. This means that every time infrastructure is laid, other parties need to be notified so that they have an opportunity to lay their own infrastructure, for example fibre, in the same trench, thus avoiding the need to build multiple trenches. It is noted that processes need to be set up to enable this. Such processes can be driven either by the company applying or by the authority that is responsible for issuing the approval. If the authority is responsible, this may have the negative impact of increasing the timeframes for approval while they consult on whether other parties seek to share the infrastructure. As such, the preference is for the party seeking approval to undertake a formal process prior to submitting the application for approval.

The regulator is directed to include single trench provisions applicable to the ICT sector in its Rapid Deployment Regulations. The regulations should provide that licensees must consult with other parties in the interest of the single trench policy, and they should provide guidance on how the regulator envisages that licensees can get access or capacity at a later stage if they are unable to participate at the time of trenching. An obligation should be put in place for licensees to include excess capacity in their deployment and to lease spare capacity to other licensees at reasonable rates or such rates as prescribed under the open access policy regulatory framework, whichever is lower. This should be supported by effective dispute resolution. The regulator should include such provisions in its regulations on Rapid Deployment.

The approval process should incentivise the application of approaches to trenching which lessen the environmental and traffic impacts of open trench work.

This policy recognises the argument that property owners can only be bound by legislation and not policy. It furthermore recognises that the regulator has no jurisdiction over property owners. Therefore, it relies on a Rapid Deployment Steering Committee which will be established to coordinate its efforts with key stakeholders such as landlords.

9.3.5.7 Access to infrastructure

Road infrastructure and power supply are important inputs to accelerated and inclusive economic growth in South Africa, and are the major investments required to deploy ICT infrastructure. Power suppliers play an important role in supporting infrastructure deployment. There are certain prerequisites for connection, separate metering and prepayment that must be taken into account in deploying infrastructure. In that regard there is a need for greater dialogue and some degree of compromise between roads authorities, national, regional and municipal power suppliers, and parties that deploy infrastructure.

In line with the openness that underpins the White Paper and in order to encourage the efficient use of public infrastructure and to avoid duplication, rights of way of critical infrastructure (e.g. roads, pylons, etc.) and other utilities (water, sewers, etc.) should be made available to communication entities for their networks.

9.3.5.8 Deploying electronic communications facilities in new developments

ECNS licensees may seek access to buildings with multiple tenants for the following reasons:

- To provide telecommunications services, including broadband, to tenants

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- To install radio communications facilities to serve customers outside the building
- To inspect the site to determine whether it is suitable for its purposes
- To maintain a facility located in or on the building[74].

New developments vary greatly in their size, character, stage of occupancy and location. They may be residential, commercial, industrial, special purpose or mixed; rural or urban. They may also be isolated or adjacent to other developments. This policy aims to be flexible enough to accommodate these differences when it comes to the way telecommunications services are provided; it ensures equality in treatment of property owners regardless of the location of the property and in so doing reduces the digital divide.

It is important to leverage the development and construction of new buildings to provide infrastructure as a strategy to support the attainment of the targets for individual access and public access to broadband (as set out in SA Connect) and to facilitate the development of 'smart cities'. Infrastructure in new developments must support high-speed broadband and voice services, and occupants of new developments should have timely access to high quality and affordable communications services. Broadband service requirements in new developments, whether business or residential, in rural and urban areas should be set to at a minimum be consistent with the speed targets set out in SA Connect. Given the fast pace of change in the ICT sector, the infrastructure will also need to be upgradeable and affordable if it is to remain competitive.

In many countries, when designing buildings and new developments provision is made for communications infrastructure. This is not the case in South Africa. In principle building plan approval for building plans for network infrastructure should be conditional on the structure supporting the equipment of minimum number of licensees (subject to the restrictions deemed necessary and appropriate by qualified civil engineers). Section 17 of the National Building Regulations and Building Standards Act empowers the Minister of Trade and Industry to make national building regulations. The provision enabling all new and other buildings undergoing renovation to be equipped with facilities such as ducting for fibre optic cabling may be included the National Building Regulations. The Ministry will liaise with the Minister of Trade and Industry to ensure that the applicable building regulations are updated to include requirements for ICT infrastructure, such as ducting, based on international practice, and to provide for sufficient additional capacity to allow infrastructure competition on the premises.

The Government recognises there is a risk that some developments may not be serviced at all and sub-optimal solutions may be provided at others, particularly if developments are less commercially attractive to providers, such as in rural and underservices areas.

To address the concern relating to unequal implementation, the Ministry will work with all spheres of government so that planning laws are put in place to ensure that the principle of "adequately served" is applied to all developments. The term "adequately served" means that electronic communications networks have already been deployed to and within a set of premises by a licensee ("the primary licensee"). It is not possible, nor is it desirable, to prescribe an inclusive list of such areas and entities, but for example, a gated complex, an office park, a shopping mall, a government

[74] http://www.acma.gov.au/Industry/Telco/Infrastructure/Network-facilities/accessing-buildings-to-install-telecommunications-facilities-i-acma

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building or a block of flats which meets the above-mentioned criteria, may be considered adequately served. When a premises is 'adequately served' the following principles will apply:

- The network or elements of that network should be available from the primary licensee to requesting licensees on an open-access basis. Such network or elements are deemed essential facilities for purposes of the open access policy.
- The primary licensee should have the ability to connect each and every occupant or user within that set of premises (whether or not they are actually connected) on a commercial basis.
- Every occupant and consumer within that set of premises should be free to choose their ultimate service provider, regardless of the identity of the primary licensee, and to conclude a contract with that service provider, and is not obliged to conclude any other contract with the primary licensee.
- To facilitate this contractual relationship, the primary licensee should establish a "meet-me" facility at a suitable point within the premises at which all requesting licensees may install their own network facilities or equipment so as to interconnect with the network of the primary licensee, or that the requesting licensee may use those facilities of the primary licensee as would enable it to provide services as requested.
- Licensees should be discouraged from installing their own ECN in adequately served areas. However service-based competition in such areas is encouraged to give consumers more choice, competitive prices and better quality.

All new buildings, and any buildings undergoing renovation, must be equipped with facilities such as ducting for fibre optic cabling.

Government supports choice. Buyers – in this case developers – should be free to choose a preferred infrastructure provider, while infrastructure suppliers should be free to bid for developments they wish to service. Similarly, consumers must be free to choose among competing ICT service providers. Given the first network built in an area will often secure an effective monopoly, it is crucial that open access and competitive provision of retail services are supported.

The above measures are intended to speed up the process of infrastructure deployment, and to simultaneously reduce the number of exclusive access arrangements that are concluded between licensees and landlords, which have the effect of limiting the number of services from which a consumer or occupant can choose. The proposed interventions are a natural adjunct to the concepts of open access and infrastructure sharing discussed elsewhere in this Chapter.

9.3.5.9 Environmental, health, safety, security and social impact

The wayleave and rights of way process is addressed by the Constitutional Court judgment, however the judgment does not address the other permits that are required as part of the ICT infrastructure deployment process. EIA's must be undertaken and where applicable, permissions from parties such as the civil aviation authorities, environmental authorities, and building authorities, among others ("environmental, health, safety and security authorities") sought before an ECNS can enter and use land. Bodies responsible for the management of heritage sites must also be consulted.

The Constitution provides that everyone has the right to an environment that is not harmful to their health or well-being and to have the environment protected. In keeping with this, licensees must comply with the requirements of the National Environmental Management Act and associated regulations when deploying electronic communications facilities. It is noted that infrastructure such

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as fibre carries significantly less risk to the environment and therefore should have a lesser qualifications criterion than other utilities.

To further these environmental considerations, and in line with the principle of open access, there should be no unnecessary duplication of infrastructure. Existing infrastructure should be utilised as far as is practicable for the deployment of electronic communication facilities, even if such infrastructure is not ICT related. For example, ICT infrastructure can be deployed over electricity cables, and through water pipes and sewerages. The importance of a centralised GIS database to identify the location of existing infrastructure accurately and speedily is reiterated.

Part of the application of the principle of 'reasonableness and due caution' is the consideration of the impact of the proposed deployment on health, safety and security standards. In addition, social considerations, such as the preservation of heritage sites, must also be taken into account.

The processes undertaken by the health, safety and security authorities must be streamlined and made more efficient. They should complement the wayleave and rights of way processes set out in this policy. The Rapid Deployment Steering Committee should, within a time frame to be set by the Minister, develop coordinated and streamlined processes in this regard.

9.3.5.10 Rapid deployment in emergency situations

When disaster strike, communication links are often disrupted, yet these links are essential for relief workers who arrive on the scene. The Minister recognises that there is no policy in South Africa on rapid deployment in emergency situations. Emergency situations are distinguished from the provision of emergency services under normal, non-emergency, conditions. Similarly, there is no coordinated regional approach to the matter.

No entity may refuse access to any site for the deployment of emergency electronic communications infrastructure, nor charge any fee whatsoever for the deployment of ICT infrastructure in emergency situations.

9.3.5.11 Institutional framework

The problem of lack of coordination requires that a clear institutional framework for the management and implementation of rapid deployment is developed. The framework has to include stakeholders that are part of the ICT sector, and therefore fall within the scope of sector specific regulation, as well as non-ICT sector stakeholders from the public and private sectors. This section of the policy discusses the institutional framework for rapid deployment as follows:

The ***role of the Ministry*** is:

a) Oversight over implementation of this policy.
b) Liaison with other Ministries responsible for aspects of rapid deployment of ICT infrastructure.
c) The establishment of a Rapid Deployment National Co-ordinating Centre and a Rapid Deployment Steering Committee to oversee the activities of the Centre.

The ***role of the regulator*** is to:

a) Provide support for the implementation of this policy through the regulatory framework, and in particular through rapid deployment regulations, facilities leasing regulations and the licensing framework,

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b) Provide information to the National Coordinating Centre on the deployment of electronic communications infrastructure received from licensees for inclusion into the GIS database;
c) Ensure through licences and regulations that licensees :
   - Share information on existing and planned infrastructure amongst themselves and with the regulator;
   - Seek out alternatives to new deployment of infrastructure, notably through the sharing or leasing of existing facilities;
   - Contribute to research and development on new deployment methods;
   - Comply with environmental requirements;
   - Co-ordinate activities wherever appropriate, avoiding anti-competitive behaviour;
   - Advise landholders in writing of their right to recourse through the Authority; and
   - Resolve disputes between ECNS licensees and landowners on an expedited basis.

Landowners at municipal, provincial and national levels will be required to:

a) Charge reasonable fees for access to land and other property under their control;
b) Co-ordinate activities wherever appropriate, avoiding anti-competitive behaviour;
c) Provide information on infrastructure, including plans for ICT infrastructure, for inclusion in the national GIS database;
d) Provide clear rules and guidelines relating to access to their facilities, and comply with any national policy and rules published in that regard; and
e) Make provision for the installation of ICT infrastructure such as fibre ducts when developing their infrastructure deployment strategies and plans.

Role of the Rapid Deployment Steering Committee: A national coordination centre, working together with the SIP 15 infrastructure team, will be established to support rapid deployment and interface with local municipalities to fast track rights of way and way-leave approvals. It will oversee:

a) Establishment of common automated wayleave application systems based on an understanding of common information requests across various bodies;
b) Creation of a GIS database and mapping of all fibre deployments and other electronic communication facility deployments;
c) Coordination of infrastructure rollout and participation in other infrastructure coordination fora such as SIP 15;
d) Engagement with relevant industry bodies dealing with 'rapid deployment' or any aspect thereof; and
e) Provide advice to ECNS licensees on the provision of electronic communications facilities.

Role of SALGA and Municipalities: Approvals for rapid deployment will take place at municipal level. Municipalities shall, when planning municipal infrastructure, make provision for the installation of ICT infrastructure such as fibre ducts. The creation of wayleaves for the installation of ICT infrastructure must be done at cost.

Municipalities are obliged to provide information on municipal infrastructure, including plans for ICT infrastructure, to the appropriate coordinating structure in a digitised format for easy retrieval and processing.

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9.4 Licensing Framework

This section gives an overview of the licensing framework for both electronic communications networks and electronic communications services. It outlines the principles and approaches that will guide the implementation of the licensing framework. Although all holders of spectrum must hold electronic communications network service licenses, it does not deal in any detail with spectrum assignments and licensing as this is covered in the Spectrum Policy (see above).

As indicated in the introduction to this White Paper, Government is undertaking a separate review of the broadcasting policy framework, recognising the specific cultural and freedom of expression issues related to that sector (including the need to promote diversity of content). That process could affect what audio and audio-visual services are regarded as broadcasters and this section therefore does not deal with the licensing framework for broadcasting and/or broadcasting-like services in any detail.

9.4.1 Context

This White Paper introduces an open access wireless network – thus shifting the focus to service based competition to address identified bottlenecks and ensure that users have access to a wide choice. The licensing framework in place will need to accommodate this new approach and reinforce the objectives for this. This will take place broadly within the licensing framework that was introduced with the promulgation of the EC Act.

In terms of this, there are two categories of licence:

- **Individual licences** are generally given to networks and services of significance and/or which use scarce resources (e.g. spectrum and numbers). These licences are characterised by individual licence conditions including obligations specific to the licensee.
- **Class licences** are general authorisations given predominantly to networks and services which do not use scarce resources or which do not have a significant impact on socio-economic development in South Africa as a whole. The licence conditions for these licensees tend to be generic and they are regulated predominantly through rules and regulations set for the type of service or network they provide.

Within these broad categories there are different types of licence: Electronic Communications Services (ECS), Electronic Communications Network Services (ECNS) and Broadcasting Services.

The licensing of individual ECNS and ECS services has only been permitted by Ministerial invitation.

9.4.2 Broad approach

The broad approach to licensing will not fundamentally change with the introduction of new policies on networks and services incorporated in this White Paper. The motivation for separating out individual and class licences remains. Those entities using scarce resources such as spectrum (i.e. the open access wireless network) will generally continue to be required to have an individual ECNS licence.

Broadcasting services will still require a separate and specific licence and entities that distribute broadcasting services will continue to require ECNS licences. This includes Sentech, as the common carrier, private networks that distribute broadcasting services and broadcast licensees that provide their own signal distribution (e.g. some of the community radio licensees).

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The expected increase in the number of potential class ICT (rather than broadcasting) ECS licences might however require the regulator to evaluate what obligations it will place on different types of service based on the nature of the service offered, notwithstanding the fact that 'scarce' numbering resources may not be used to provide the services**.** Where necessary, obligations can be set in regulations and the Authority will be required to consider if it needs to adapt its approach in light of this.

The Regulator will consider the license applications and decide on the awarding of licenses to successful licensees. The Regulator will issue every licensee with licence conditions pertaining to each class of licence. The licence conditions will be reviewed from time to time and the Regulator will issue competition terms for the licensees after consultation with Competition Commission.

9.4.2.1 Exemptions

The EC Act currently allows the regulator to prescribe which services and networks will not require a licence i.e. which are licence exempt. This will be retained – though this policy outlines the objectives and considerations that should inform such a decision.

The regulator must in deciding on licence exempt categories consider the following:

- The public interest obligations and goals outlined in Government policy and legislation – including, for example, the need to ensure universal service and access while promoting innovation and investment. The best interests of users will be paramount in considering this.
- The impact these entities have on the existing market (including, for example, the revenue they generate from South Africa and the effect of this on the viability of licensees).
- Whether or not the network or service specifically targets the South African market or derives a significant portion of its revenue from South African consumers.

Given the fluid nature of the ICT market due to ongoing technological advances, digitisation and convergence, it will be necessary for the regulator to regularly reassess exemptions given and it must retain the right to review any decision to exempt the network or service.

The ITU's guidance on the regulatory approach to over the top (OTT) is instructive in considering the approach to these and other services and will inform the policy-maker and regulator's approach. It has stated that:

- Proliferation of content and applications services is to be welcomed as they introduce choice and innovation to users.
- Change is inevitable. As network operators migrate to next generation networks, voice services will become software applications riding over the network. Policy-makers need to find ways to balance innovation, investment and competition during this transition period.
- Regulators cannot hold back innovation and change to maintain the status quo.
- These changes are disruptive and inconvenient for those with a stake in existing arrangements, but the benefits of change to users outweigh the costs.[75]

[75] ITU-infoDev, "ICT Regulation Toolkit: Regulating 'Over-the-Top Services", undated, http://www.ictregulationtoolkit.org/2.5.1

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Government is of the view in line with this that there is no need to immediately regulate Over- The-Top (OTT) services but that this position should be regularly reviewed by the regulator, based on the considerations detailed above.

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10. A Digital Society

"A single cohesive strategy is essential to ensure the diffusion of ICTs in all areas of society and the economy. Like energy and transport, ICT is an enabler – it can speed up delivery, support analysis, build intelligence and create new ways to share, learn and engage"

NDP: Vision 2030[76]

This Chapter of the White Paper focuses on the *demand-side* policy frameworks necessary to transform South Africa to an inclusive digital society, where all South Africans can safely access and create affordable and relevant digital content and services in their language/s of choice.

Digital and mobile infrastructure and technologies are tools to enable all citizens to engage with, create and access information and services from a range of sources anywhere and at any time. This assists in addressing unequal access to public and other services (such as education and health-care) and boosts opportunities for employment and economic growth. Digital transformation is by its very nature disruptive and has and will continue to change the way everyone communicates, interacts and transacts. It will transform the way societies and economies work- how citizens interact with government, how government delivers services and how consumers access goods and services.

Three key pillars inform the approach adopted for transforming South Africa to a digital society:

- **Digital transformation of Government** to fulfil government's development objectives and increase efficiency across the public service. Digitisation of the public service will drive up demand for access to the Internet and therefore boost growth in e-commerce and other sectors.
- **Digital access** focusing on ensuring all citizens have the capacity to actively participate in the digital society and realise the potential of ICTs to improve their quality of life (including e-skilling, development of digital identity verification systems and promoting trust and security); and
- **Digital inclusion** to ensure that no South African citizen is excluded from the benefits of a digital economy and knowledge society.

Figure 12: Graphic representation of the three pillars

[76] NDP, page 171

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10.1 Context

The World Summit on the Information Society (WSIS) identifies a range of interrelated components necessary to realise its vision of an inclusive information society. These include ensuring access to infrastructure, that the content and services available on Internet and mobile platforms are relevant and that people have the skills and knowledge to utilise ICTs safely.[77] Transforming South Africa into a dynamic digital society and knowledge economy where all citizens can participate is therefore a multifaceted and complex process requiring partnerships between the public, private and civil society sectors.

This is focused on throughout this White Paper. For example, Chapters Five and Nine introduce interventions to address supply-side barriers while Chapter Four reinforces mechanisms established to facilitate multi stakeholder involvement. This Chapter specifically looks at how to address demand-side issues identified in WSIS and echoed in South Africa's national broadband plan. In doing so however it cannot ignore the many processes, studies and initiatives focused on digital transformation of society which have preceded this White Paper. Successes must be reinforced and challenges addressed. Policies and approaches adopted include:

- The 1998 Report of the Presidential Review Commission on the Reform and Transformation of the Public Service in South Africa, "*Developing a Culture of Good Governance*", included a chapter on Information Management, Systems and Technology in the public sector. This paved the way for the establishment of the State Information and Technology Agency (SITA). The report highlighted that there were several very valuable initiatives in Government but that it was crucial for effective cross government implementation that these programmes were integrated.
- The Centre for Public Service Innovation together with the Department of Public Service and Administration (DPSA) and SITA published a study entitled "*Citizen Access to E-Government*" in 2003. This was focused on developing a strategy to implement an e-Government Gateway Project initiated by DPSA. This study highlighted that one of the challenges to effective implementation of an e-Government Gateway Project was skewed access to telecommunications services and platforms. In addition, the researchers noted that responsibilities related to addressing the challenges was spread across different Government departments and entities including the then Department of Communications (which included the functions of DTPS) and DPSA, as well as individual Departments and local governments.
- In 2000 the Presidential National Commission on the Information Society and Development was established and the National Information Society and Development Plan adopted by Government in 2007. This too identified the need for a whole of government strategy and plan.
- Several laws have also been promulgated to deal with specific areas. The Electronic Communications and Transactions Act ("the ECT Act") sets out the framework for electronic signature verification and stipulates that the DTPS should finalise an e-strategy. The Public Administration and Management Act, 2014, ("PAMA") among other things provides "*for the use of information and communication technologies in the public administration"* including

[77] WSIS, "Declaration of Principles", Geneva 2003

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requiring the head of a public institution to ensure interoperability of information systems across government and use ICTs "*to develop and enhance the delivery of its services*".[78]

The policy review process leading to the finalisation of this White Paper identified a number of overarching challenges that have resulted in these initiatives not fully achieving the objectives set. Many of these have been identified, expanded on and highlighted during the above previous studies and the NDP therefore stresses the need for South Africa to implement "*an enabling coordinated and integrated e-strategy*" that cuts across government departments and sectors.[79] South Africa Connect in addition identified the importance of public sector demand aggregation to encourage uptake and increase the returns on investment in infrastructure. The broadband plan identifies e-health, e-education, public Wi-Fi access and extending Internet access and ICT capacity to all government departments and entities as key components of this.

10.1.1 Challenges

The key challenges identified include:

- A lack of synchronisation in approaches to digital transformation adopted by different government departments will, if not addressed, stymie the overarching vision of this White Paper of an inclusive information society and knowledge economy and result in overlaps, duplication of costs and unnecessary expenditure.
- There is uneven capacity across government to roll out digital solutions and services.
- There is uneven access across society to the skills and capacity to meaningfully engage with ICTs and take advantage of all the opportunities offered.
- The content and service available on the Internet is predominantly in English and produced outside South Africa.
- While the Internet can potentially result in greater exports and extend the reach of South African businesses, there is a risk that technology-savvy foreign competitors will outdo local firms.

Overcoming these challenges requires a holistic, coordinated government policy and strategy for digital transformation across all spheres of government and public services. The framework for achieving this through establishing a Cabinet Digital Transformation Committee and reinforcing participation by all social partners is covered in Chapter Four. This Chapter focuses on how to implement this commitment to address the above challenges.

10.2 Goals

The overarching goal of this Chapter is to develop a national framework to transform South Africa into an inclusive digital society where all citizens can benefit from the opportunities offered by digital and mobile technologies to improve their quality of life.

10.3 Objectives

This policy aims to:

- Promote use of ICTs to transform the relationship between government and citizens to facilitate active citizenship.

[78] PAMA, section 14
[79] NDP, page 191

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- Ensure all South Africans can access quality public service and government information from anywhere at any time.
- Reduce the cost of public administration.
- Provide a framework to ensure that ICTs fulfil their potential to facilitate South Africa's development goals.
- Increase the efficiency of delivery of public services across South Africa.
- Set out the framework for providing all citizens with a digital identity.
- Provide the framework for implementing Government's commitment to open governance and open data.
- Drive uptake of digital and mobile services by providing an impetus to citizens to enhance their e-skills.
- Facilitate inclusive economic growth across the country and expedite the transformation of South Africa to a digital economy where all South Africans have the opportunity to participate in and benefit from global economic opportunities.
- Reduce the cost of doing business in South Africa and therefore prompt growth across the private sector, including boosting development of the SMME sector.
- Increase the quality and amount of local content, services and information available in all South African language on all digital platforms.
- Ensure South Africans have the same protection online as offline and that all users that they are secure online.

10.4 Pillar I: Digital transformation of the public service

> ***"South Africa needs to build a state that is capable of playing a developmental and transformative role. …Developmental states are active. They do not simply produce regulations and legislation. They constantly strive to improve the quality of what they do by building their own capacity and learning from experience."***
>
> The NDP: Building a capable and developmental state

This pillar includes the policy frameworks for e-Government as well as the approach to promoting open Government and open data.

10.4.1 Context

The term "digital government" or e-Government refers broadly to the innovative use of communications technologies (including mobile devices), websites, applications and other ICT services and platforms to link citizens and the public sector and facilitate collaborative and efficient governance. A digital government uses ICTs and digital technologies to make government processes more efficient, strengthen public service delivery and enhance participation by citizens in governance. It includes:

- Government to Government programmes (G2G);
- Government to Citizen programmes (G2C);
- Citizen to Government programmes (C2G); and
- Government to Business programmes (G2B).

The United Nations has identified four stages to e-government:

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- **Stage One – Emerging Pres**ence: E-government presents information which is limited and basic. It includes an official web-site and links to individual web-sites.
- **Stage Two – Enhanced Presence**: Online services of government include interactive services such as downloadable forms.
- **Stage Three – Transactional Presence**: E-government allows for two-way interaction including e-tax filing for example and systems to allow for citizens to submit applications online 24/7.
- **Stage Four – Networked Presence**: Two-way dialogue between government and citizens enables participatory decision-making.

Achieving this is not just about moving government online. It will require a change in approach, process and culture across the public sector and concerted effort and commitment across government.

10.4.2 Principles of e-Government

The following principles and approaches will be applied to all digital government solutions:

- Services must be **designed for users/citizens** and must consider the needs of those with the least digital skills and the most limited access to devices.
- **Online end-to-end public sector services** should be made available as far as possible. Such services are fully available online.
- The public sector needs to offer **services to users/citizens on and off line** and provide assisted digital services.
- Government digital services provided must be generally based on **open standards** and be available and accessible on all devices and platforms.
- **Personal information must be protected**.
- The **most cost-effective solutions** for both users and government should be explored and any investments in digitisation of public services must lead to defined benefits to the public.
- Systems should **incorporate mechanisms for monitoring of delivery of services**, thus enhancing accountability of government.
- **People must be more than just users** of public services. ICTs should assist in facilitating that they use, create, customise, share and improve public services.
- **Citizens must all be provided with a digital address** to ensure government can communicate with them directly.

10.4.3 Interventions

Successful digital transformation will require extensive cooperation and collaboration between different government entities and spheres to ensure that the above principles are rigorously applied. Cabinet will lead this project through the Inter-ministerial Digital Transformation Committee (see Chapter Four).

10.4.3.1 e-Government strategy and roadmap

The Digital Transformation Committee will oversee the development of a detailed, integrated national digital government strategy and roadmap. This national strategy and roadmap will be based on a diagnostic assessment of the state of digital readiness across all spheres of government including an analysis of different capabilities and a review of the current systems and technologies. The strategy and roadmap will also consider all previous reviews and plans in place and the challenges experienced in implementing these.

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The strategy and roadmap will include implementation and rollout plans for:

- ***Government to Citizen programmes***: Including identifying which front-line public services will be prioritised and the timelines for roll-out
- ***Government to Government programmes***: Focused on increasing the internal efficiency and effectiveness of government, including developing platforms to share data across government to reduce duplication and service delivery costs.
- ***Government to Business programmes*** to boost the economy and ensure inclusive economic growth; and
- ***Citizen to Government programmes*** to enable more active participation by citizens in government policy development, implementation and promoting transparency and accountability.

10.4.3.2 Promoting ease of use

A single online access point for all e-Government services will be developed and a plan for achieving this incorporated into the e-Government strategy and roadmap.

In addition:

- Digital public services will be made available as far as possible in all official languages and be aimed at addressing citizens' needs rather than making it easier for government or public servants.
- Systems will be put in place to ensure that users only need to provide information once and that this will be captured and accessible across all public entities.
- Applications will be developed recognising that many users will at least initially be using less sophisticated devices and technology (including mobile phones) to access digital government services.
- Universal design standards and assistive technologies will be adopted to ensure access by persons with disabilities to all digital government services.

10.4.3.3 Cost-effectiveness

One of the core principles informing this policy is that of promoting open standards across government. This allows for reuse of solutions and collaboration across Government. The roadmap and strategy will extend this and outline the process of developing a common architectural model and platform based on open standards. The diagnostic assessment of systems currently in use will identify what proprietary systems are in place to assist in developing this strategy.

Implementation plans for the roll-out of services will as far as possible include pilot studies to ensure that the solutions meet identified needs.

10.4.3.4 Promoting affordable access to key public services and information

Reduced or free access to certain commercial applications or websites is one way that operators drive uptake of their services. The validity and fairness of this practice will be one of the issues looked at during regulatory hearings into net neutrality (see Chapter Eight). Government, however, wants to extend this investigation by the regulator to consider the viability of zero-rating data fees to access clearly defined public interest digital applications, content and services, including emergency services.

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Government will therefore direct the regulator to specifically consider in its study on net neutrality whether or not to permit zero-rating of key public sector/public interest sites, services and applications. The needs of users and the public policy objectives of government should be paramount considerations in this regard and the impact this would have on driving uptake of technology and the effects on the viability of operators. Such a review should also include assessment of the criteria to be used to determine which sites/services/applications would qualify should an exclusion to any bar on zero-rating be introduced should.

10.4.3.5 Protecting privacy and security

Security solutions must be embedded in all software and systems and Government will determine standards for such security solutions in its e-government roadmap and strategy. Existing standards put in place to enforce rules and regulations related to security and protection of private and confidential digital information should be reviewed to assess if any amendment is necessary and how to ensure adherence to these. Standards should apply to all public servants and to people/entities in charge of the technology, including service providers.

10.4.3.6 Confirmation of digital identities

A common, robust and secure system to provide assurance of the identity of any person accessing digital public services will be developed and will be applied across Government. The system will be developed in partnership with Government entities that have already developed identity confirmation mechanisms and systems to ensure alignment. If necessary, regulations and/or legislation will be introduced to support this framework. This digital identity will be used for all transactions with government.

10.4.3.7 Implementing solutions

The State Information and Technology Agency (SITA) will work closely with IT leaders in the individual departments in developing digital government solutions. SITA will focus on, among other things, providing transversal services for digital government, developing and managing an integrated digital government services platform, determining digital norms and standards for the digital service platform and developing and managing the one stop government portal/s.

10.4.3.8 Monitoring impact

The DTPS will work with StatsSA to establish mechanisms to track the impact of interventions adopted.

10.4.4 Open Government/Open Data

The South African Constitution commits Government to open and transparent governance of the country. ICTs and digitisation provide a means to reinforce this commitment by making it more possible to ensure that *key non-personal public information and data is freely available to everyone to use, reuse and republish as they wish*, subject only to restrictions to protect privacy, confidentiality and security in line with the Constitution.

South Africa is one of the founding members of the global Open Government Partnership and took over the chair of this in 2015.[80] As one of the signatories to this partnership, South Africa has committed to developing an open data policy framework and action plan.

[80] The founding countries of this multilateral partnership are South Africa, Brazil, Indonesia, Mexico, Norway, the Philippines, the UK and the USA.

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10.4.4.1 Objectives

The objectives of this open data policy framework are to:

- Set out the principles that will inform the development of an open data action plan to allow everyone to access, use and re-use non-personal and unclassified public information and data.
- Make non-personal and unclassified government-held data more widely available and usable, taking into account the South African legal context.
- Promote informed active citizenship through providing the framework to facilitate access to public data.
- Promote innovation and economic growth through facilitating greater access to data which will enable entrepreneurs to better understand their communities and markets.
- Promote efficiency and cost-effectiveness in the public sector by making it easier and less costly for government entities to access and re-use their own data and that from other public agencies.
- Promote evidence-based policy making across Government.

10.4.4.2 Principles

- Government should default towards making information and data open while not compromising people's rights to privacy and security.
- Personal, classified and confidential information will be protected.
- Identified data should be freely available for redistribution, use and re-use on conditions, including that the source of the data is identified, and that it is redistributed under the same terms and conditions.
- Data must be legally open (i.e. in the public domain for use and re-use with no restriction) and technically open (published in formats that are machine readable and non-proprietary) so that it can be accessed by common, freely available software.
- All data and information should be easily discoverable and accessible.

10.4.4.3 Interventions

A clear Open Government Data action plan and manual will be developed through consultation with all relevant stakeholders and will include:

- Information on what types of public information should be available for everyone to access, reuse and redistribute. It will also clarify what information will not be made available, such as personal and classified information and data.
- A standardised public licence setting out the terms and conditions for using and re-using public data and information.
- Clarity on what tools and systems will be put in place to ensure that open public data and information is discoverable and searchable.
- An implementation plan to establish a single, easy to use, open data government access point.
- Detailed information on how government entities should implement Open Data policies and the standards required.
- What security measures will be put in place to protect data and metadata from interference by unauthorised users?
- How Government will facilitate innovation and involve citizens in developing software and applications to utilise public data.

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10.5 Pillar II: Digital Access

This pillar includes programmes of action to promote trust and security and facilitate digital literacy and e-astuteness. Note that policy interventions to ensure universal access and service are covered in Chapter 5.

10.5.1 Promoting trust and security

Public trust in digital services is essential to both government and business services if digital transformation programmes are to be successful. Users must be able to trust that they will be protected online or when using communications technologies (including cell-phones). A range of laws and policies and already provide protections to South Africans both on and offline. For example:

- The Film and Publications Board Act includes provisions on **protection of children** and classification of content so users can make informed choices about what they want to access.
- The Protection of Personal Information Act (the POPI Act) sets out provisions to **protect personal data** (including personal details, digital identification information and, for example, credit card numbers) by setting out requirements on how such data is exchanged, stored and collected..
- **Identity theft** is recognised as a crime in the new Cybercrime Bill. The cybercrime policy framework also introduces a range of mechanisms to deal specifically with crime online and amends the ECT Act to clarify responsibilities.
- **Electronic signatures** are dealt with in the ECT Act which gives the Minister responsibility for accrediting electronic signature service providers. To date two service providers have been accredited (the South African Post Office and LAWtrust). In addition, Internet service providers have adopted a voluntary self-regulatory code to increase protection of users.
- In 2012 a Cabinet **National Cybersecurity Policy Framework** was adopted and a Cybersecurity Response Committee (CRC) established to begin addressing this and centralise coordination to better tackle online infringements. A draft Cybercrime and Cybersecurity Bill has been tabled which aims to regulate crimes committed in cyberspace including 'phishing', hacking, unlawful interception of or interference with data and creating or distributing malware. The Bill removes sections of the ECT Act which deal with cybercrime and cybersecurity including all sections dealing with the protection critical databases (Chapter IX), and sections on cybercrime. crimes

The policy review process identified the need for **finalisation of a national framework for digital identity verification**. While there are a number of systems in place to verify identities, there needs to be one system adopted at least in government to ensure integrity and ease of use of identity verification mechanisms. An approach to this is expanded on in the specific interventions outlined below to address trust and security related issues.

Finally, it is important to emphasise that prosecution cannot alone sufficiently protect people in a digital world, and proactive **measures to promote awareness of risks** and provide information on tools and practices to protect users will be increasingly necessary. Many awareness-raising measures are already in place, but there is a need to extend these to reach, for example, those users with only basic or limited digital literacy and increase their impact through coordination. It is also necessary to strengthen the e-signature provisions in place in South Africa and ensure awareness of these.

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10.5.1.1 Interventions

The interventions below are aimed at promoting trust in ICT platforms and networks by protecting users.

- **Review related laws**

Government will review all relevant laws to ensure they do sufficiently deal with new issues arising from convergence and digitisation. This review will also address contradictions and duplication between different laws and policies if any.

The legislative and policy review will include the following assessments:

- If there are sufficient mechanisms in place to protect children online from commercial and other exploitation.
- If there is sufficient protection regarding privacy concerns relating to clandestine digital data trail tracking and potential unauthorised personal data storage as a result of this tracking.
- If South Africa should consider introducing provisions to allow citizens to remove information from the Internet that unfairly stigmatises them.[81]

- **Empower users to protect themselves**

Government will lead and coordinate awareness campaigns on security mechanisms and tools that users can utilise to protect themselves from Internet crime, digital identity theft and cyber-bullying and ensure their children are protected. This will include facilitation of increased coordination across government to ensure maximum impact of public awareness programmes and communication with other social partners (including the private sector, banking community, civil society, Internet intermediaries, etc.) with the aim of extending the impact of all such campaigns.

- **Strengthen electronic signature framework**

The existing framework in the ECT Act will remain in place but the law and implementation approach will be adapted to:

- Bring legislation in line with international and regional protocols and guidelines and with South African laws such as the National Credit Act. A “mixed” and flexible approach to authentication of electronic signatures will be adopted, and the focus will be on removing all legal and social obstacles to digital transactions while ensuring that any electronic signatures offer the same protections to all parties involved as hand-written signatures.
- Put in place strategies to ensure increased awareness and acceptance of the framework in place; and
- Address factors that have resulted in delays in accrediting service providers.

- **Regulation**

The sector regulator will be required to actively cooperate and collaborate with other relevant regulators (including self-regulators) to reinforce security of digital services and promote trust in these. This will include cooperation with the new regulator established to protect privacy, ICT sector self-regulatory entities, the FPB and banking regulators.

[8181] Note that such provisions are in place in European countries and it requires that entities in other countries, such as cloud storage facilities, adhere to its laws.

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10.5.2 Digital literacy and e-astuteness

"Investments in broadband must be combined with new investments in training and education to ensure that every woman and man has the skills and capabilities, as well as the opportunities, to make the most of ICTs and new technologies for human rights and dignity, for social inclusion, for poverty eradication and for sustainable development. "

ITU/UNESCO, "State of Broadband 2015"

Digital astuteness includes the skills necessary to access ICT services and to create content as well as the capacity to continually adapt and apply new technological applications to personal and local benefit.[82]

10.5.2.1 Context

The SA Connect national broadband policy raises e-literacy and e-astuteness as critical areas for intervention and emphasises the need for collaboration with all stakeholders across government, business, education, civil society and global development partners to address this decisively.

Research conducted as part of this ICT Policy Review process has highlighted that there are a number of initiatives in the private, public and non-governmental sectors aimed at building e-literacy skills, but that the maximum impact of these programmes is not achieved due to a lack of coordination between initiatives.

10.5.2.2 Interventions

Government will focus on facilitating multi-stakeholder collaboration on e-literacy and digital astuteness activities with all social partners. The diverse capacity building needs of different sectors will need to be considered in finalising strategies and programmes of action:

- **Government and the public sector**: An assessment of skills gaps and capacity needs to drive digital transformation across all sectors of government will be conducted so that a detailed plan can be developed to address this.
- **Citizen needs**: Government will develop a "list" of the basic skills that citizens need to participate in the digital society and work together with all social partners to develop integrated plans to address these. This will include support and training at public access sites (e.g. post offices), and integration of digital skills in formal primary, secondary and tertiary educational institutions.

Government will establish a multi-stakeholder collaborative forum to better coordinate digital capacity building efforts across all spheres of society and "aggregate" efforts to enhance the impact of these initiatives. This forum will form part of the ICT Stakeholders Forum to ensure that its work is aligned to multi-stakeholder strategies developed through this forum.

E-skills programmes will be integrated into primary, secondary and tertiary levels to ensure that all students can fully benefit from the learning opportunities offered from digitisation and access to

[82] Note that this is not the only section of this White Paper addressing the issue of e-literacy. Chapter Five (Universal Service and Access) highlights that programmes to promote digital literacy will be supported by the Digital Development Fund and Chapter 11 (Industry Growth) looks at interventions to promote e-skills training in primary, secondary and tertiary education.

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Government Gazette
Staatskoerant

REPUBLIC OF SOUTH AFRICA
REPUBLIEK VAN SUID AFRIKA

Vol. 616 3 October / Oktober 2016 No. 40325

PART 2 OF 2

N.B. The Government Printing Works will not be held responsible for the quality of "Hard Copies" or "Electronic Files" submitted for publication purposes

ISSN 1682-5843

9 771682 584003 40325

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global knowledge. This will include the development of an e-skills plan for the post-school education and training sector.

10.6 Pillar III: Digital Inclusion

> ***"By 2030 (communications infrastructure will be) an enabling platform for economic enterprise…and innovation. It will … promote economic growth, development and competitiveness; drive the creation of decent work; … and support local, national and regional integration".***
> NDP

This pillar focuses on maximising the potential of ICTs to facilitate digital inclusion across society.

10.6.1 Building a digital economy and e-commerce

ICTs have changed the way business is conducted and people and companies sell/buy, access, deliver and pay for goods and services. Digital transformation of the public sector and promoting uptake of digital services through this will create further opportunities for digital entrepreneurship and the introduction of new innovative digital goods and services. Innovative e-commerce and digital services responsive to needs in communities in turn have the potential to promote uptake of ICTs.

The digitisation of government services is further aimed at reducing the red tape and bureaucracy involved in setting up and running a business and will contribute towards digital transformation of the economy. The digitisation of the public services will moreover prompt digital take-up and therefore increase the market for e-commerce products and services. Chapter 11 (Industry Growth) outlines how government will facilitate growth in opportunities across the Internet and digital value chain – thus further prompting growth in the digital economy.

10.6.1.1 Intervention

Government's primary role in promoting the digital economy will be to create enabling frameworks to encourage innovation and enterprise – and therefore to address inequality in opportunity. While Government will ensure an enabling environment to promote digital and e-commerce broadly, the focus will be on using ICTs to facilitate growth in the SMME sector.

Extending reliable access to communications networks (and facilitating the broadband targets set in the National Broadband Plan), boosting adoption of new technologies through digital government services and promoting digital awareness and literacy, while putting in place robust frameworks to protect users from cybercrime, will all assist in this. Reducing red tape and bureaucracy in government through ICTs and developing simplified online compliance tools and systems for business registration will also make it easier for entrepreneurs. Extending the reach and efficiency of delivery systems through transforming the postal sector (see Chapter 10) will further facilitate growth in this sector.

- **Promoting small and micro enterprises**

The focus of Government policy interventions to boost small and micro enterprises will be on reducing costs, making it easier to reach customers and limiting geographic barriers. Government will also initiate programmes to address digital capacity challenges in this sector, including IT skills.

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A whole-of-government approach will be developed to oversee the development of cross-government strategies to promote uptake of ICTs and digital business by SMME's through, for example:

- Raising awareness of the benefits of ICTs.
- Building digital and IT skills.
- Encouraging the development of local software that give SMMEs access to software without incurring high capital costs.

10.6.2 Financial inclusion

People need to have the means to pay for or receive money for digital goods and services to participate in e-commerce (either as consumers or enterprises). Financial exclusion is therefore a threat to the growth of e-commerce and the digital economy. ICTs create opportunities for the development of innovative digital payment systems[83] and to extend the number of people with financial accounts.

The South African Reserve Bank has regulatory control over banking systems in South Africa and is exploring ways of creating an environment for easy/faster payments and the appropriate policy/regulatory framework in line with international standards and best practice. The Bank is working closely National Treasury, the Payments Association of South Africa (PASA) and the Financial Services Board (FSB) on this.

10.6.2.1 Context

According to the World Bank ("the Bank"), 70 per cent of all adults (15+) in South Africa had a financial account in 2014 – up from 54% in 2011. The World Bank data indicates that there is no inequality in South Africa between men and women or rural and urban adults' access to financial services, but there are disparities based on age (only 53% of young adults had a financial account) and between rich and poor (58% of the poorest 40% in the country had an account).

The World Bank study also extracts data on the number of people that used the Internet to buy things or pay bills. According to this, in 2014, eight per cent of adult South Africans used the Internet to buy things or pay bills (compared to 73 per cent in the UK and 65 per cent in the USA). South Africa leads in use of the Internet for payment in SADC but lags behind most BRICS partners: 19 per cent in China, 18 per cent in Russia, nine per cent in Brazil, and one per cent in India.

The 2014 Mobile Research study conducted by World Wide Worx and First National Bank reported a sharp spike in mobile banking in South Africa from 2012. The survey reports that while only one per cent (1%) of all banking customers using banking applications (apps) in mid-2012, the figure shot up to nine per cent (9%) in late 2013. Cellphone banking, according to the study, has also surged, rising from 28 per cent in mid-2012 to 37 per cent in late 2013.[84]

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[83] This includes electronic money or e-money (the electronic equivalent to cash held on a device, server or card), mobile financial services (services offered via a mobile phone e.g. transfers, payments and mobile banking) and electronic and mobile wallets.

[84] World Wide Worx and FNB, "The Mobile Internet in South Africa 2012", http://www.worldwideworx.com/wp-content/uploads/2012/07/Exec-Summary-The-Mobile-Internet-in-SA-2012.pdf

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Members of the banking sector highlighted during this policy review process the need for greater collaboration between the ICT sector regulator and banking regulators to ensure enforcement of the financial regulatory framework in place.

10.6.2.2 Intervention

A new regulatory framework will be introduced to ensure coordination between the ICT sector regulator and regulators in the banking sphere to ensure that licensees comply with requirements set out in financial services legislation.

Accessible e-payment systems will be developed for payment of government grants. A platform will be developed for such e-payment systems including relevant software, applications and infrastructure. (*Note that Chapter Eleven: Postal Services deals with approaches to be adopted to ensure that the South African Post Office promotes financial inclusion*

10.6.3 Developing relevant digital content and services

> *"(E)mpowering people via broadband needs much more than infrastructure alone – extending access must be accompanied by the development of relevant content in different forms … and new services (e.g., e-commerce and payments) in local languages."*
>
> **ITU/UNESCO, "State of broadband 2015"**

UNESCO defines local digital content as that which is relevant and in the speaker's own language.[85]. It states that local content is crucial to promoting access to and uptake of digital services. Users, particularly those most digitally marginalised, need content and applications relevant to their developmental needs, in languages they understand, and accessible through devices and applications that are affordable and easy to use. Digital transformation also means enabling all South Africans to develop and share their own content on the Internet.

The public sector has an important role to play in increasing the local content and services available in a range of languages on digital platforms through ensuring its own information, applications, content, and services are offered on these platforms in all languages and accessible to persons with disabilities.

10.6.3.1 Intervention

As indicated in Chapter One of this White Paper, Government is conducting a separate review on broadcasting and audio and audio-visual content services, including considering the implications of convergence and digitisation on the cultural and freedom of expression objectives underpinning that sector. This section therefore does not deal specifically with broadcasting or broadcasting-like content carried on ICT networks and platforms. It does however recognise that any audio and audio-visual policy frameworks adopted in South Africa will include measures to ensure access across all platforms to South African public interest content in a range of languages.

- **Review**

Government will conduct a review to ascertain what local digital content is available and whose needs are not being fulfilled. This review will include an assessment of what initiatives are in place to

[85] Internet Society, OECD, UNESCO, "The relationship between local content, Internet development and access prices", 2011, http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/local_content_study.pdf

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grow the content and software development industries and the discoverability of South African content.

- **Maximising public support**

Based on this review, Government will develop a strategy to maximise the impact of existing support provided by public institutions to promote South African content development. This will include extending existing support mechanisms in place to specifically support the growth in development of local digital content, services and information.

- **Digitising cultural heritage**

Government will also fast track existing programmes aimed at digitising cultural heritage (including content from libraries, museums, galleries, archives, film, music and video), and making this accessible online. Government will work together with other institutions, including private sector bodies and academic institutions to create a single access point for cultural heritage in South Africa.

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11. Postal Policy

"We must deliver a postal world where innovation is shared, promoted and driven - not as a luxury, but as a reality for all."

UPU Director General Bishar A. Hussein[86]

South Africa has made significant strides to develop and strengthen the postal sector through the provision of universal access to quality and secure services. Progress made in this regard is highlighted in the table below. Note that there are some areas where there has been a decline since 2011 (e.g. in the number of post offices accepting financial transactions) but generally more people have access to postal services than previously.

Postal Market Trends[87]

Key statistics	**2011**	**2012**	**2013**
Total number of permanent post offices	2 446	2 482	2 482
Average number of inhabitants served by a permanent post office	20 630	20 443	21 264
Number of mobile post offices (including rural delivery staff)	1	4	4
Number of post offices (permanent and mobile) accepting financial transactions	2 006	1 944	1 590
Number of permanent post offices connected to an electronic network	1 568	1 623	1 590
Number of post offices using a counter automation system	1 568	1 623	1 590
Percentage of income linked to letter post	67%	66%	62%
Percentage of income liked to parcels and logistics	12%	12%	15%
Percentage of income linked to financial services	19%	11%	5%
Percentage of income linked to other products	2%	11%	18%
Income from Philately as a percentage of total income	1,00	1,00	1,00
Percentage of the population having mail delivered	81%	81%	81%

[86] Universal Postal Union World Strategy Conference, 2015

[87] http://www.upu.int/en/resources/postal-statistics/query-the-database.html

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Percentage of the population having to collect mail from a postal establishment	15%	18%	18%
Percentage of population without postal services	3,6%	1,3%	1,2%

Source: UPU, 2015

Given the progress in universal service to postal services as shown in this table, this section of the White Paper focuses on the provision of innovative e-services, maximising the current infrastructure of the SA Post Office (SAPO). ICT convergence and technological advancement opens possibilities for unleashing new business and economic opportunities for the postal sector and users and this framework aims to enable this.

11.1 Context

Convergence cuts across the traditional market segments of the postal sector: Letter mail, parcel and financial services, necessitating a full restructuring of the postal sector, especially the Post Office which will be required to continue to play a leading role in the provision of universal access to converged services. While SAPO already provides some of the services mentioned above[88], there is still a long way until it transforms into a fully digitised postal company.

Due to its extensive network of postal points of presence and distribution capacity as well as its role in the financial sector and its current status as an authentication service provider for digital signatures, the SA Post Office in particular lends itself as a strategic platform through which citizens and businesses can access ICTs, including e-government, e-commerce, e-post, e-finance and general ICT services. This entails maximising the benefits and impact of the current infrastructure through the introduction new ICT services and products.

Evidence in countries like Estonia, Finland and Kenya confirm that postal operators that have embraced ICTs are beginning to reap benefits with a significant increase in revenues generated from new services. In Estonia for example, in 2015, the Estonian postal operator reported that the volume of parcels that it handled was 10 per cent up on the 2014 figure, driven by e-commerce. In 2013, Estonian Post acquired a 51 per cent stake in a start-up company offering online payment solutions. This acquisition provided the company's logistics business the chance to offer e-commerce merchants a payment solution for all the Baltic States. Similar trends have been observed in other jurisdictions.

This policy provides for the restructuring of the SAPO and the postal sector in general to contribute towards the provision of universal access to innovative e-services while at the same time continuing to provide quality and secure traditional postal services. The SA Post Office is accordingly being restructured to provide the services highlighted in the table below.

E-Services

e-Post services	e-Finance services	Secure e-government services	E-commerce services

[88] http://www.upu.int/uploads/tx_sbdownloader/studyPostalEservicesEn.pdf

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Public Internet access point in post offices. Web information on services and tariffs. Postal electronic mailbox. Online direct mail. Postal registered electronic mail. Electronic stamp. Electronic signature. e-cards. Hybrid mail (physical to electronic and electronic to physical). Postcode lockup. Track and trace.	Electronic invoicing. Electronic account management. Electronic remittances. Online bill payments. Bills management E-payment of utilities (water, electricity, etc.). E-payment of phone bills. Electronic money transfers. Mobile money services and transactions.	Secure e-government gate way. Authentication of digital signatures. Verification of addresses.	Online shop for philatelic products. Online shop for postal goods. Online shop for non-postal goods. e-commerce web-based customer service and contact. Subscription for periodicals and physical delivery.

SAPO will also provide a secure e-government gateway building on its mandate as an authentication service provider for digital signatures and as the custodian of the National Address System.

While the focus is on embracing digitisation and convergence, this Chapter also deals with other issues related to the definition of the sector, market structure and competition framework, licensing framework, approach to universal access, framework for the national address system and the regulation of the Extra Territorial Offices of Exchange (ETOE).

11.2 Objectives

This policy seeks to address the following policy objectives:

- Restructure the SA Post Office to contributes towards universal access to ICTs;
- Provide the definition of the postal services and the scope of the sector;
- Delineate a new market structure, competition and licensing frameworks;
- Define a new framework for the role of the postal sector and SAPO in particular in providing universal access to ICTs;
- Provide an approach to universal access;
- Expand the role and obligations of the Postbank to include the payment of government grants;
- Define a new National Address System, including the roles and responsibilities of different role players such as SAPO and Statistics South Africa;

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- Set out a framework for the Stamp Advisory Council;
- Provide a regulatory framework for the ETOEs.

11.3 Defining postal services

Globally the traditional postal services sector is undergoing reform fuelled in the main by the introduction of the digital society and the Internet. The proliferation of electronic mail as well as other communication mediums poses both challenges and opportunities for the postal services sector. Post Offices around the globe are transforming and innovating to include the provision of such services, given the decline in traditional mail volumes.

This policy's emphasis on the convergence of postal services with ICTs necessitates that the definition of postal services in South Africa be clarified for the purposes of delineating the market structure as well as to identify the services that will be regulated. In line with this position, the postal sector will include the following services:

- Traditional/physical services and related online letter business such as basic letter services, basic parcel services, registered letters and parcels, addressing, retail outlets, collection points;
- Digital and e-postal services such e-registered mail, hybrid mail, access to internet and e-mails, e-filing, fax mail, parcel and related online innovations such as parcel tracking and e-commerce; and
- Financial services and associated ICT innovations such as sale of stamps, cash on delivery, insured letters and parcels, issue and pay money orders, money transfers, postal orders, registered insured letters.

11.3.1 Three Dimensions: Physical, Electronic & Financial services

This new definition raises questions about what to regulate or not to regulate. In particular, there is a question of how to deal with e-services that are associated with the delivery of postal services. To avoid confusion, the convergence between the two sectors is largely limited to services and applications and it does not include infrastructure which means that any postal service that provides electronic communications services, as defined in policy or the law, will need a separate electronic communications service and/or electronic communications licences.

With the exception of the provision of public Internet services, the other services (e-post, e-finance and e-commerce), do not require an electronic communications licence. For SAPO, this means that the company should obtain or use a separate electronic communications licence to provide ICT services unless the company uses the services of a duly licensed electronic communications service provider.

11.4 Market structure and competition

The postal market is segmented into three markets:

- The communications and distribution market in relation to postal services offered and the movement of parcels,
- The retail market through its post office networks and the financial services market through third party payments and money orders, and
- The Postbank. SAPO is active in all these markets.

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Government is committed to creating a competitive landscape over a reasonable period of time. Under the current environment, it is not possible to make a fair assessment because the rate of encroachment in the reserved market is exceedingly high. Government is aware that a number of jurisdictions are doing away with the reserved market, either as initial objectives have been met or because the set aside is no longer profitable. The extent of this shift will vary from country to country. South Africa as well requires a well thought out long-term policy trajectory that is based on local realities.

Regulated competition in the postal market ensures that postal operators compete with each other in providing services efficiently and at acceptable levels of quality and price. The aim is to ensure market led and customer oriented postal providers that satisfy the needs and expectations of users of postal services.

Modernised and effective postal market and competition is important for the development of the South African postal market. Currently the unreserved postal market is not regulated. Unreserved postal operators, private operators and courier operators are not licensed by the Regulator. There is no license fee required to operate in this market. It is further noted, that although prohibited by law, courier operators continue to encroach into the reserved market. Currently there are no obligations and conditions on unreserved and courier operators.

11.4.1 Interventions

At this stage, this policy provides for the retention of the status quo until an in-depth review is undertaken after the finalisation of this policy. The review of the market structure will be prioritised. It will link an assessment of the reserved market to a review of the universal service obligations as outlined below. In the meantime, the restructuring of the licensing framework will be introduced (see below). Accordingly, the current policy framework will be retained with new penalties to be imposed on those who encroach in the reserved market.

In summary, the following approach is adopted:

- The current market structure (reserved and unreserved) will be retained until the next review of the market structure is undertaken.
- Mail and parcels weighing up to 1kg will thus remain reserved for SAPO. SAPO should provide services to all South Africans throughout the country. No other entity is allowed to provide services in the reserved market.
- SAPO will also retain exclusivity in the issuing of postage stamps and addressing.
- The regulator will prescribe regulations and compliance requirements to ensure that operators other than SAPO do not encroach into the reserved areas. This will include the regulator imposing a fine of up to five per cent of total revenue on any company that encroaches into the reserved market.
- The regulator will further impose obligations on SAPO to deliver adequate, timeous and quality services in the reserved market.
- The regulator will also prescribe regulations to ensure that all providers of services in the unreserved market are registered. Failure to register with the regulator will carry penalties to be prescribed by the regulator. This is done to ensure that the regulator always has up to date information about the state of the industry.

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The regulator will develop mechanisms to monitor and ensure compliance by the operators and submit quarterly reports on this to the Minister. The quarterly reports will include postal sector statistics including the number of licensed entities across the different market segments.

11.5 Licensing framework

SAPO is the only entity in South Africa licensed to provide local, national and international postal services. Operators in the parcel or courier business are required to be registered with the regulator. As a result, there are no obligations on operators which use the post office's infrastructure to deliver mail to different destinations, including rural areas that are generally deemed to be uneconomic by private operators.

In terms of the Post Office licence, the monopoly in the reserved area will be reviewed every three years. Service standards and the protection of customers have been incorporated into the licence agreement. Should the terms of licensing not be met, the regulator can impose penalties on the Post Office.

11.5.1 Challenges

There is a need to create a level playing field between SAPO and other players in the postal market. The lack of an explicit licensing environment for parcel operators makes it difficult to measure the total size and the contribution to the economy of the sector. Before the next review of the monopoly of the SAPO in the reserved market, there is a need to reorganise the industry in terms of a well-defined licensing framework.

11.5.2 Interventions

In anticipation of the review of the reserved market and the imposition of universal services obligations on all players, subject to the definition of universal service on the postal sector, this policy sets out a licensing framework for the postal sector. The licensing framework for postal services will include the following categories:

- **Public Operator/s**

This is the designated operator responsible for universal service obligations and has international and domestic coverage. It is the sole provider of services in the reserved postal market and competes also in the unreserved postal services.

- **Private postal operators**

Private operators providing services in the unreserved postal market include the following categories:

- **International Private Postal Operators:** These are operators that deliver services in other countries. They operate inbound and/or outbound deliveries on a worldwide network but they also perform national and local deliveries;
- **National Postal Operators**: These operators will provide services throughout South Africa.
- **Provincial Postal Operators:** These are operators that operate and deal with deliveries within a particular province.
- **Municipal and Metropolitan Postal Operators:** These operate only within a designated local municipality or metropolitan area. These are often the smallest type of operator and usually represent the entry level for the courier industry.

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Informed by the categorisation of licences envisaged above, the regulator will be required within the short term to advise the Minister on the terms and conditions for these licences, including, but not limited to:

- Licensing procedures
- Social and economic obligations
- Licensing fees
- Requirement to publish tariffs
- Economic empowerment
- Penalties

The final licensing framework will be set out in an amended Postal Services Act.

11.6 SAPO services expansion

In line with the thrust of this policy review, government maintains that ICTs are not a threat to postal services, but enable new innovations for the delivery of quality, secure and timeous services to individuals, households and business users. In this regard, the uptake of e-services should be at the centre of the strategic turnaround of SAPO. A range of options should be explored over a period time. For example, SAPO may develop an e-commerce gateway for its own postal services, while providing a distribution service to other e-commerce providers, including non-postal services.

Given the significance of this, SAPO is required to submit quarterly reports to the Minister on progress towards the realignment of its traditional services with ICT innovations. Decisions on e-services should be based on sound business considerations and the extent to which ICT enabled economy impact on the economy as a whole.

SAPO should prioritise the connection of rural postal services to provide ICTs to communities. There are currently 589 postal offices that are classified as rural, and these should be prioritised in the rollout of ICT services. Only those postal outlets that are owned by SAPO will be connected to the high-speed Internet networks and solutions.

11.6.1 Context

The Internet and the digital revolution are fundamentally changing the world of communications and commerce. The digital economy continues to grow and electronic substitution of traditional mail is accelerating as both consumers and businesses adopt electronic processes across multiple domains. Postal mail users are shifting from traditional hard copy distribution models to a variety of new ways to digitally communicate, advertise, or transact. They are attracted to greater convenience, faster service, and lower cost.

Over the last decade, the number of customer visits has fallen at an accelerating rate. The South African Post Office has been facing falling revenues - a major reason why SAPO has been loss-making. Many services traditionally delivered exclusively by the post office are now also available through alternative channels in a digital platform.

11.6.2 Interventions

Embracing the ICT sector should be central in the strategic turnaround of the SA Post office. As a result, SAPO should develop a commercial strategy and business plan to embrace digitisation, taking into account the need to continue providing physical mail and other services.

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The digitisation strategy should include the following:

- E-commerce, taking into account its extensive distribution network and access to financial infrastructure through the Postbank
- Innovations such as e-post, e-finance and related services
- Broadband provision through the extensive postal infrastructure, prioritising rural post offices
- Maximise the role of the Trust Centre to provide secure e-government services as well as seek opportunities in the private sector
- Through its broadband offerings SAPO should play an important role in extending access to the internet to underserviced areas to benefit all users, including small businesses.
- SAPO will also provide secure e-government services as a way to maximise the capacity of the Trust Centre.

11.7 Universal postal service and access

Access to basic postal services is crucial to Government's efforts to promote socio-economic inclusion. Government is committed to facilitating the development of the postal sector, and ensuring the provision of access to a universal postal service by all South Africans- irrespective of where they live or who they are - in a transparent and fair environment.

Government views postal services as strategic public utilities with a serious impact on social and economic development. Provision of secure postal services therefore remains the cornerstone of this policy review. Given the significance of universal postal service and access in the unfolding policy, technological and market landscape, Government prefers a comprehensive policy on universal postal services and access. In particular, national policy should achieve the following:

- Define universal postal services and access in the postal sector, taking into account the digitised environment;
- Identify the targets to be met by SAPO in the reserved area and all licensed or registered entities in the reserved market;
- Explore various mechanisms of financing universal access, which may include imposing universal service obligations or a contribution to a dedicated universal service fund; and
- Consider exemptions for SMMEs and other entities to promote economic empowerment (including youth and women).

11.7.1 Interventions

As stated above, universal access and service are among the key drivers of ICT and Postal policies. In this regard, the following needs to be implemented to ensure that the postal sector as a whole contributes towards universal access:

- Pursuant to the review of the market structure and the licensing framework, the regulator should advise the Minister on the access gap and the definition of universal service and access;
- The regulator should also advise the Minister on the universal service and access obligations to be imposed on the various classes of licences;
- Furthermore, the regulator should advise the Minister on the process to be embarked upon to ensure that postal licences also contribute towards the Digital Development Fund, wherein, funds needed to support the non ICT aspects of the postal sector will be ring fenced.

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11.8 National address system

An effective addressing system and address infrastructure plays an important part in the social and economic development of any country and forms part of any citizen's identity. South Africa is one of the developing countries with a good addressing system, particularly for urban areas, although approximately seven million households in rural areas and informal settlements do not addresses.

Most rural communities in South Africa do not have an effective addressing system and this leads to different organisations providing addresses to those communities for their own service delivery requirements, resulting in multiple addresses for the same household.

11.8.1 Context

Internationally, the UPU has emphasised the importance of an address for everyone. The UPU encourages member countries to develop national policies to ensure that everyone has a proper address, not only for postal services but also for other essential services and to facilitate participation in the economy. The Pan African Postal Union (PAPU) and the Southern Africa Development Community (SADC) have also set out policy intentions to advance the roll out of addresses to bridge the existing gaps across countries.

PAPU and SADC have adopted a regional development plan for Africa. As one of its objectives, the plan seeks to standardise the addressing system within the continent and regional economic communities. As part of standardising the continental and regional address systems, the two organisations have encouraged member countries to improve the interoperability of postal networks and to promote addressing systems and the use of postcodes. The drive to ensure a universal address system for all has also been endorsed by the African Union, which has urged member countries to prioritise the development and improvement of postal network with a specific emphasis on the modernisation of the national addressing system.

A comprehensive National Address System is important for all South Africans to enjoy human rights outlined in the Bill of Rights. Without addresses, citizens cannot participate in the economy and are excluded from receiving socio-economic services. As stated, a significant number of South Africans still do not have access to addresses thereby staying out of the socio-economic loop.

Physical addresses are the most common resources used to define and identify geographic locations. Various aspects of Geographic Information System (GIS) applications such as public health, public safety and defence, local government, real estate and marketing, natural resource exploration or extraction, transportation and the geospatial industry depends on addresses to function.

In this regard, it is critical that an effective national address system be developed to ensure address rollout, particularly to rural and unaddressed communities and the development and maintenance of national address database. The policy envisage the development of national address system whereby all South African will have an effective address and where such address related information will be securely kept and maintained by the designated agent in terms of this policy.

This policy envisages that a new address system will amongst others assist with the effective management of statistics and census, provide a one-stop-shop for biographical data, provide information for the compilation of the voters roll, enable infrastructure rollout and the provision of utilities, and enable the rollout of other essential services to communities.

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11.8.2 Interventions

This policy provides for the governance of address data production, aggregation, and distribution and usage functions in South Africa and promotes the roles of various stakeholders as follows:

- The Ministry of Telecommunications and Postal Services is responsible for policy development, monitoring, evaluation and review.
- Statistics South Africa (StatsSA) will provide technical support to SAPO as well as assist with the promotion of the policy.
- SAPO will be responsible for, among other things, address production, allocation/distribution and maintenance of National Address Database. SAPO will also be responsible for communication and conclusion of agreements with other agencies, traditional authorities and homeowners.

Any person or entity with address related information is required to submit it to SAPO for the purposes of developing and maintaining the national address database. Users of address data are encouraged to utilise and reference authoritative address data as published in the National Address Database.

The SABS's SANS 1883 provides for the informal address allocation standards for rural areas by SAPO. In line with the SANS standards, SAPO is mandated to develop a National Address Plan and implementation in the rural areas to ensure fairness and efficiency by among others:

- Undertaking planning, mapping, allocation and roll-out of physical addresses, and
- Managing postal codes and national addressing systems.

For the first time in the history of South Africa, national policy provides a comprehensive framework to ensure that all citizens and businesses have adequate addresses. In particular, this policy emphasises access by those in informal and rural settlements throughout the country. To achieve this, the policy is based on a new methodology that allocates a six-digit address to an informal or rural household, as follows:

- Each village within an area is identified and allocated a two digit number,
- Each section within the village is allocated a two digit number. The allocation of numbers is flexible for further upscale as the number of households increase in an informal settlement or village,
- Each dwelling within the section is allocated a two digit number,
- This gives a six digit number which is used to identify a specific dwelling,
- Where a stand has more than one household, as is in some rural areas, each housing unit will be numbered with the six-digit number plus an Alphabet at the end.

The address allocated by SAPO will be recognised as the authoritative address for such households.

Given the unlimited scope of individual user requirement for addresses, SAPO will maintain various formats of addresses in the National address database. The database will create a link between old and new addresses and all other addresses linked to an individual.

For the purposes of developing and maintaining a comprehensive National address database as defined in this policy, the Ministry will support the ongoing improvement of the national address

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database with a view to standardising address data quality and maintenance regimes for the country.

Individuals and legal entities are required to make address change notifications in writing to SAPO. Such notifications shall be made in person within 20 working days of the change of address at SAPO outlets or via post, fax or electronic mail to the addresses to be given from time to time by SAPO.

For the purposes of ***providing service delivery information***, SAPO is required to provide make available any address information to the South African Government.

In order to support the use and verification of authoritative address data, SAPO should verify address data. SAPO shall be responsible for recording data verification transactions and utilizing this information to update, improve or amend existing records in consultation with key stakeholders.

11.9 Financial inclusion and the role of the Postbank

This section extends policy approaches included in Chapter Ten.

There are now 22.5 million banked adults in South Africa or 67 per cent out of a total of 33, 7 million population (Stats SA 2011 mid-year population estimate). The report also reveals that about 2, 4 million or seven per cent of the adult population in South Africa that are social grant holders are unbanked. [89]

According to a survey conducted by FinMark Trust there are 9.8 million people in South Africa who have basic transactional bank accounts and no other kind of formal financial product.[90]

Financial services have been an integral part of SAPO's business around the world and continue to be one of the key dimensions of the postal sector as provided for in the UPU resolutions. Completely separating the Postbank from SAPO will compromise the financial sustainability of both institutions.

About 200 million small and medium-sized enterprises (SMMEs) in emerging markets lack adequate financing. While the higher income segments of the population have access to financial services lower-income groups, particularly in rural areas, have no formal access to these services. Most commercial banks consider it unprofitable to provide financial services to rural communities.

11.9.1 Context

With close to six million accounts, the Postbank has a critical role to play in the financial services environment in South Africa, especially as it concerns economically marginalised citizens. The Postbank has one of the most expansive infrastructures in South Africa and is therefore critical to achieving government's objective of ensuring that all citizens have access to banking and related services and products.

Evidence in other jurisdictions points to the need for ongoing restructuring of post-banks to play a bigger role in the economy in addition to the current role of providing access to banking services. In addition to ICT innovations, postal banks in other jurisdictions act as gateways for various state transactions such as pensions and grants to small businesses across different industries.

11.9.2 Interventions

[89] http://businesstech.co.za/news/banking/25527/south-africas-banking-population-revealed/
[90] http://businesstech.co.za/forum/showthread.php/5771-FinMark-Trust

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In order to maximise the value of Postbank infrastructure, the mandate of the Postbank in the medium to long term should include:

- provision of insurance and other financial products
- introduction of electronic and mobile money services
- payment of social and other government grants
- provision of lending services to consumers

As part of this process, the Postbank should extend its network and footprint beyond SAPO's current infrastructure. To further strengthen the Postbank, the Ministry will work with other government departments and entities to develop a new legislative environment that will enable the Postbank and SAPO in general to provide government services without going through supply chain processes.

SAPO should be tasked with the responsibility of disbursing social grants working with SASSA as the lead agency. The postal legislation should be amended accordingly to reposition the Post Office to play a significant role in the disbursement of social grants.

11.10 Preserving South African heritage

Stamps are universally recognised as prepayment for the mail services rendered by postal companies around the world. The sale of postage stamps and philatelic products (commemorative stamps) is a significant source of revenue for stamp issuing organisations (including designated operators, where applicable), especially in developing countries. Stamps are generally referred to as "*the country's smallest ambassador*" as they carry messages throughout the national and international postal system.

Stamps are also linked to national identity as they portray the political, social, economic and cultural outlooks of countries. Because of their ubiquitous reach, stamps can be used to preserve a country's history and other attributes. Internationally, the UPU has recognised the role of and therefore encourages the development and distribution of commemorative stamps. In this regard, the UPU has directed that postal companies should prioritise the development of stamps and commemorative as part of their business models.

SAPO has published a number of commemorative stamps since 1994 highlighting South Africa's countries heritage including significant political, economic, social and cultural developments that took place since the advent of democracy. SAPO has also issued commemorative stamps featuring icons of our democratic dispensation amongst them: President Nelson Mandela, President Zuma, Former President Thabo Mbeki, Oliver Tambo, Chris Hani, and Steve Biko. Major national and international events such as the 2010 FIFA World Cup have also been commemorated.

11.10.1 Context

Philatelic and stamp initiatives can support the objectives of the National Development Plan (NDP) to promote nation building and social cohesion.

There is however a policy gap with regard to the issuing of commemorative stamps and the commercialisation to ensure the sustainability of philatelic innovations. With regard to the development of an annual stamp programme, the current process is not informed by policy and therefore happens on an ad hoc basis at a significant financial cost to SAPO. There is a need for

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policy to outline the process of appointing the Stamp Advisory Committee, and for developing and issuing commemorative stamps.

11.10.2 Interventions

The g policy framework for philately is outlined below.

- **Development of philatelic products (stamps)**

SAPO should continue with an exclusive mandate to develop and issue stamps and any other philatelic products such as books, pre-paid envelopes, air letters, postal orders, registered labels, post marks and any other products in republic.

The development and designs of stamps and philatelic products should consider the operational and commercial needs of SAPO.

- **Annual Stamp Programme**

SAPO will be responsible for developing the annual stamp programme in consultation with the Stamp Advisory Committee a year prior to implementation. The following will apply:

- The process for the development and approval annual stamp programme will be included in the Charter of the Stamp Advisory Committee.
- A maximum of 15 themes may be submitted to the Minister for consideration and approval and the final list for annual stamp programme shall consist of no more than ten (10) themes.
- The annual stamp programme should among other things endeavour to portray the following themes that are relevant and current to attract interest by stamp collectors and any other interested stakeholders:
  - Historical, cultural, political, social and economic achievements of South Africans
  - Events of outstanding national and international interest or significance
  - Contribution of our people to the scientific, cultural and economic development of a broader society
  - Environmental and heritage of our country.

- **Commemorative stamps**

Commemorative stamps are those stamps that are issued to celebrate events of national, continental and international importance; individuals, anniversaries of institutions and organisations that have played a significant role in the liberation, social and economic development of the country and its citizens.

- For anniversaries, commemorative stamps will only be issued for the celebration of 50 and 100 years anniversaries. With the approval of the Minister and under exceptional circumstances, the South African Post Office may issue stamps for 10th, 25th and 75th anniversaries.
- Presidential commemorative stamps will be issued for every incoming president of the Republic of South Africa immediately after the inauguration.
- Subject to the approval of the Minister, SAPO may in consultation with the Committee issue commemorative stamps to celebrate an event of national and international importance as and when there is a need to do so.

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- Interested parties may request the Minister in writing to issue commemorative stamps in honour of events and people as indicated in this policy. The Minister will inform the requestor of his/her decision.
- Should a request be approved by the Minister, the approval will be communicated to SAPO for implementation.
- Final approval of the design of stamps will be done by SAPO in consultation with the requesting entity and any other institution having interest in a particular stamp.
- Commemorative stamps that are of organisational, provincial coverage, demographic in nature, the requesting entity will purchase at least 20% of the stamps issued. Commemorative stamps that are of national, continental or international scope, the requesting party will be required to purchase at least 10% of the stamps issued.

▪ **Joint stamps issues with other countries**

SAPO may jointly issue stamps with another postal administration subject to the approval of the Minister.

The issuing of joint stamps should benefit the South Africa through inter alia promoting the country's heritage.

▪ **Printing of the stamps**

When printing stamps, SAPO should endeavour to use South African printers where possible as a way of building local skills and entrepreneurship capacity in the philatelic and stamp environment.

▪ **Appointment of the Stamp Advisory Committee**

The Minister of Telecommunications and Postal Services is responsible for the appointment of Stamp Advisory Committee members, in consultation with the SAPO Board of Directors.

The Minister will ensure that the Committee is representative of the South African society as well as having appropriate expertise in the field of arts and culture, marketing, environmental, education, history, graphic design and stamps amongst others.

The appointment procedures as well as the terms of service of the Stamp Advisory Committee will be outlined in the Stamp Advisory Charter which will be approved by the Minister of Telecommunications and Postal Services.

11.10.3 Regulation of Extra Territorial Offices of Exchange

An Extra Territorial Offices of Exchange (ETOEs) is defined by the Universal Postal Union (UPU) as an office or facility operated by or in connection with a designated operator on the territory of another country, and that these offices are established by designated operators for commercial purposes to draw business in the markets outside their own national territory. Multinational courier companies, many of which are owned by designated foreign postal operators are increasingly setting up operations around the world and South Africa is no exception.

The main objective of establishing an ETOE by foreign operators is to avoid paying international tariffs called Terminal Dues that would have been paid to the designated operator of the country where an ETOE has been established for processing and delivering items within their country and transit services charges services, where mail from the foreign designated operator transit to another country.

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11.10.3.1 Context

The legal status of ETOEs has been a matter of intense debate within the Universal Postal Union (UPU) from one congress to another. The 2012 DOHA UPU Congress under resolution C 6/2012 decided that, items that originate from ETOEs are strictly commercial items not covered by the provisions of the UPU Convention, unless the laws or policies of the destination country allow ETOE traffic to be considered as international mail covered by these provisions. The UPU regulations further provides that it is upon each member country to provide in their national policies how to deal with ETOEs.

ETOES in the country continue to be unregulated and as a result, the designated operator loses strategic business especially international mail (inbound mail) from countries with local presence, as mail is channelled through their ETOEs. The same goes for outbound mail, which has been drastically reduced because of these multinationals operations. This skewed arrangement is further exacerbated by the fact that ETOEs have access to domestic postal rates intended for the local universal service provider such as SAPO and the registered unreserved postal service providers.

Multinational courier companies, many of which are owned by the designated postal operators from foreign countries are increasingly setting up operations around the world. This result in the designated operator not receiving international mail (inbound mail) from those countries as mail is channelled through their ETOEs and similarly the outbound mail; has been drastically reduced because of these multinationals operations.

The regulator has been unable to regulate ETOES because of the lack of an enabling policy and legislative framework. This policy and legislative vacuum has allowed ETOEs to also encroach into the reserved section of the market. Having taken into consideration emerging trends government has decided to prove a comprehensive policy framework to govern the establishment of ETOEs in South Africa.

11.10.3.2 Interventions

- An Extra Territorial Offices of Exchange operating in South Africa will comply with Universal Postal Union guidelines on re-mailing, subject to monitoring by the Regulator with regard to trading practices and agreed-to service standards.
- No foreign postal operator, private or public is allowed to establish an ETOE in the country or use the Universal Postal Union system without having registered with the Regulator.
- Any public or private foreign operator that has established or intend to establish ETOE operations in the country must in writing inform and apply to the regulator in the prescribed manner and form as determined by the regulator.
- The public or private foreign operator must provide details of the ETOE established or to be established to the regulator, which shall include the full name of the ETOE, street address, telephone, fax and email address of the persons or persons responsible for the ETOE operations in the country.
- No ETOE operating in South Africa will provide services in the reserved market.

With regard to the **inbound mail**, the following rules will apply:

- All postage and dispatch logos must show which postal operator runs the ETOE Postal articles originating from a foreign country to be processed through an ETOE shall be considered to be

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commercial cargo upon arrival in the country and shall be subject to custom clearance procedure

- The postal item shall be mailed as either domestic or international mail charged at domestic postage rates or UPU terminal Dues (rates) as determined by the designated operator
- The designated operator in consultation with the regulator will determine which mail is charged at domestic rates and which mail is charged at UPU terminal dues rates
- The designated operator may enter into bilateral agreement with the designated operator where an ETOE originate to allow for the cooperation with regard to the distribution of mail items emanating from and ETOE.
- SAPO must inform the regulator of such agreement.

Regarding **outbound ETOE mail cargo**, the UPU Acts shall not apply to ETOE commercial operations in the country and ETOEs shall not use UPU documentation to export commercial cargo from the country. All mail cargo shipments by ETOE shall be conveyed on commercial documentation (air way bills) under commercial customs clearance procedures. Postal Service equipment, such as bags, containers and other receptacles, and customs forms shall not be used by ETOE to export cargo from the country.

Any outbound mail from an ETOE shall be accepted by the designated operator under the following conditions:

- UPU Terminal Dues (rates) shall apply that is the designated operator will charge the same terminal dues it would have charged if the mail has been sent by the designated operator of the country in which the ETOE is located.
- UPU documentation shall be used by the designated operator for all outbound ETOE mail and Postal custom clearance must also be followed.

In the interest of promoting regional integration, national operators from SADC countries should be exempted from the provisions of this section. This is limited to operators that are owned by the governments of the respective countries in SADC.

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12. ICT Industry Growth

"The ICT sector in South Africa is an important component of the national economy. Technology is involved in almost every facet of the economy – from telecommunications to increasing productivity in manufacturing with robots, and more efficient computer hardware and software."

Statistics South Africa[91]

After 23 years of ICT industry regulation, South Africa is still a net importer of almost all devices and technologies that are used in the sector. From a technology point of view, South Africa is a net consumer of innovations from other countries. Judged by the demand, measured in terms of people who use ICT devices, South Africa has a captive market for new industries, especially in the electronics sub-sector. The ICT sector has an immense, untapped potential to contribute to industrialisation and re-industrialisation in South Africa.

Consistent with a new drive to promote industrialisation across sectors, this Chapter focuses on innovative approaches to position the ICT sector as a driver of industrialisation and reindustrialisation. It locates the ICT sector at the centre of innovation to promote the national goals set out in the National Development Plan, the Industrial Policy Action Plan and other legal and non-legal instruments aimed at promoting sustainable growth. This builds on the current strength of the ICT sector, including advances in mobile software and electronic banking services, amongst others, as well as the projected growth of the sector to reach R116 billion in 2016.[92]

Strategies to stimulate demand for ICT goods and services cut across the different Chapters in this White Paper. These include the adoption of a new market structure to stimulate competition and innovation as well as innovative applications such as e-government and local content. The overall strategy in this particular Chapter distinguishes between three key sub-sectors, each with unique properties and needs viz. the electronics and hardware manufacturing sector; the software, local content and applications development sector; and the ICT services sector.

12.1 Context

At the heart of this new drive lies the need to improve coordination within government and between government and industry. As it is, key government departments with the mandate to promote industrialisation generally work in silos with limited or no coordination on key interventions.

Key departments involved in the ICT sector include the Department of Telecommunications and Postal Services, Department of Science and Technology, Department of Trade and Industry, Department of Economic Development, Department of Education, Department of Higher Education, and the Department of Small Business Development. The Development Financial Institutions such as the Industrial Development Corporation (IDC) and the Development Bank of Southern Africa (DBSA) have a key role to play in the growth of the ICT industry. All other government departments use ICT and therefore contribute towards industry growth.

[91] StatsSA, Information and Technology Satellite Account for South Africa, 2012
[92] SA IT Market Overview for 2011 with forecast for 2012-2016. BMI-T. 2012

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Effective coordination within and outside government should be underpinned by a measurable policy trajectory with clear indicators and priorities. Such a policy should focus on the entire value chain of the ICT sector, including, importantly, the role of small businesses, which have immense potential to contribute towards employment creation and poverty eradication, key requirements in efforts to redress rising inequalities within and between communities.

12.2 Objectives

The ICT industry growth perspective is underpinned by and seeks to meet the following sectoral and national policy objectives:

- Defining the ICT sector and its value chains;
- Positioning the ICT sector in the industrialisation and reindustrialisation of South Africa;
- Stimulating demand for ICT goods and services;
- Aligning key state interventions such as ICT policy development and regulation, Research and Development, Funding, Efforts to promote local and Foreign Direct Investment;
- Strengthening coordination between key state institutions and with the private sector;
- Promoting research and development, innovation and local manufacturing;
- Promoting the role of SMMEs and community innovations;
- Introducing a new skills development dispensation.

12.3 Definition and delineation of the ICT sector

The lack of a coherent definition in South Africa of what constitutes ICTs is one of the reasons for the lack of a coordinated strategy to promote ICT industry growth across the value chain. In the policy and regulatory context, the ICT sector is generally confined to the regulated sector, that is, the provision of voice, data and associated services by licensed companies. The ICT Charter and StatsSA however, use different definitions. The issue of defining the sector is further complicated by technological convergence, which blurs the lines between telecommunications, broadcasting, information technology, and of late, postal services.

12.3.1 Interventions

In order to create certainty in the industry and other ICT using industries a classification system based on Statistics South Africa (Stats SA) satellite account is adopted, viz:

- **Sector classification:** The OECD based sectoral classification adopted by Stats SA, will be used to determine eligibility for support schemes developed for the ICT industry. According to the OECD this refers to "*a combination of manufacturing and services industries that capture and display data and information electronically*".
- **Product classification:** In addition, the OECD [93] provides a products categorisation for ICT products, content and media products. These are classified into three categories, namely: ICT services industry, software and content development and electronics and hardware manufacturing. The product category "*Printed and other text-based content on physical media, and related services*" will be excluded in the South African delineation.

[93] Organisation for Economic Co-operation and Development, "Information Economy Product Definitions Based on the Central Product Classification (Version 2)", 2009

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The Minister will direct the ICT Charter Council to revise the definition in the ICT Charter in line with the position adopted in this policy and all affected national laws and policies should be aligned with the new definition.

12.4 Role of the ICT sector in industrialisation and reindustrialisation

The strategic role of the ICT sector goes beyond what happens within institutions that drive policies and innovations. The Sector has a far reaching impact for other sectors and the economy as a whole. Central to the industry growth chapter is the role of the ICT sector in industrialisation and re-industrialisation. This relates to building new industries on the backdrop of what exist in the country. As part of this effort it is important to recognise and pay attention to the dual role of the ICT sector as a standalone and as an enabler in other industries.

While this Chapter largely focuses on the role of the ICT sector as a standalone, it is important for policy to ensure that it enables the uptake and usage of ICT in other sectors such as tourism, agriculture and transport. For reasons including lack of awareness, the high cost of communications and lack of coherent sectoral strategies, the uptake and usage of ICTs across sectors does not reflect the potential of the sector.

12.4.1 Interventions

Building on sections of this White Paper promoting digital transformation across society, sectoral strategies are needed to promote the uptake and usage of ICTs in different industries. This should be linked to strategies to promote local e-commerce. In this regard, sector specific strategies and plans (agriculture, tourism, and transport) are needed to increase uptake and usage of ICTs throughout the economy. Alongside this is the need to address the high cost to communicate that inhibits the ubiquitous utilisation of ICTs.

12.5 Aligning approaches

Industry growth involves multifaceted interventions that cut across many government departments. Key activities in the value chain include:

- Policy and regulation;
- Research and development;
- Incentives and funding;
- Transformation; and
- Skills development

12.5.1 Interventions

In order to maximise the existing and future interventions to promote ICT industry growth, a coordination mechanism involving various government departments and state institutions is needed. The following will therefore be put in place:

- Government will establish an ICT Industry Growth Coordinating Mechanism to facilitate synergies across relevant Government departments and ensure bottlenecks are addressed.
- The coordinating body should be structured along the broad sub-sectors of the industry viz. ICT Manufacturing (including the electronics and related hardware sub-sectors), ICT software

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development (including applications development) and the ICT Services industry (providing maintenance, logistical support, data warehousing, network support etc.). This distinction is necessary to ensure that interventions recognise the uniqueness of each and that targeted support programmes are developed accordingly.

- The coordinating mechanism will also consider how further value chains are created under each of the sub-sectors to ensure effective implementation and will:
  a. Consider new EEPs and continuously monitor implementation and evaluate outcomes and impact.
  b. Ensure alignment between electronic communications policies with government's industry growth strategies, including efforts to promote export revenues; local and foreign direct investment (FDI).
  c. Coordinate strategies to promote e-skills and work readiness of interns taking into account the fiduciary roles of various government departments and state enterprises.

12.6 Research, development and innovation

SA Connect notes that, while South Africa's overall R&D spend has moved towards one per cent of GDP, this is still significantly below what is required for economic competitiveness.[94] South Africa spends close to 10 per cent of GDP on ICT goods and services - most of which are imported. The extension of national broadband infrastructure envisaged in this Chapter will further create unprecedented demand for ICT goods and services.[95]

Notwithstanding interventions such as the Department of Science and Technology's ICT Research, Development and Innovation Roadmap, a great deal still needs to be done to position South Africa as one of the leading nations in new innovations arising from its own research and development programmes. The Industrial Policy Action Plan (2014-2017) expresses concern about the inadequate levels of coherence and coordination in prioritisation and agenda setting for science and technology innovation by, and between, government, business, academia and civil society.[96]

12.6.1 Interventions

South Africa will focus on positioning itself to leverage the potential market growth so that the country becomes more internationally relevant, as well as becoming a key supplier to the African continent. To achieve this, South Africa must significantly increase and sustain levels of public and private investment in ICT-RDI and strive to:

- Develop a healthy innovation culture, such that research results flow unencumbered to government and industry to achieve impact in and for society;
- Ensure that industry engages robustly with research communities, so as to ensure rapid uptake and promotion of research results and indigenous innovation;
- Develop an advanced ICT infrastructure which provides requisite quality of connectivity to supports RDI initiatives within our borders and with the continent and the world;
- Develop content and applications addressing local needs and creating export opportunities.

[94] DTPS, South Africa Connect, pg 25.
[95] For example, PricewaterhouseCoopers' Entertainment and media outlook (2014–2018) indicates that South Africa's entertainment and media market will see a compound annual growth rate of 10.2% to 2018, with Internet spend the largest and fastest growing segment.
[96] DTI, Industrial Policy Action Plan (IPAP 2014/15 – 2016/17), pg 62.

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In order to improve the R&D environment, this policy adopts the following:

- An ICT RDI Investment and Planning Advisory Council including senior officials from various government departments, as well as industry and research institutions (Universities and Science Councils) and civil society representatives, will be established to support the Office of Digital Advantage, which is provided for in the ICT RDI Roadmap.
- The ICT RDI Investment and Planning Advisory Council will be Co-Chaired by the Departments of Telecommunications and Postal Services (DTPS); and Science and Technology (DST)
- The Council must establish a working relationship with other institutions that are involved in RDI.
- The Council must continuously evaluate priority areas, promote and monitor policies to support RDI growth in the ICT sector.

12.7 RDI Innovation Funding

Government has established a number of institutions and instruments to support general industry growth and RDI in particular. These initiatives cut across various government departments. Like other interventions aimed at promoting industry growth, these interventions are largely uncoordinated. The ICT Policy Advisory Panel noted the current funding for RDI was not adequate to meet the current and future needs of the ICT sector.

12.7.1 Interventions

Having considered submissions on whether a single fund was needed, the final determination is that this is not necessary. However the following strategies will be pursued to create a sustainable flow of RDI funding:

- Make provision for RDI Funding as part of the Digital-DF (ring-fencing);
- Encourage non-regulated ICT companies to contribute to the Digital-DF.

12.8 Intellectual property rights

Intellectual Property Rights are central to research, development and innovation. The intellectual property system helps strike a balance between the interests of innovators and the public interest, providing an environment in which creativity and invention can flourish, for the benefit of all.

A number of views were expressed during the policy review such as:

- Concerns about IP issues in the ICT sector included that IP protection may create barriers to entry for SMMEs and that the nationality of IP ownership is somehow relevant to the growth of a thriving domestic IT sector.
- IP protection provides much-needed incentives for innovation and creativity by enabling enterprises to recoup their investments in research and development and to fund future innovation.
- An important factor in attracting FDI in the sector is IP protection. Foreign firms are more likely to invest in developing countries that have stable IP regimes.
- That IP is not a barrier but a bridge that enables an innovator to share an innovation with other companies that pass the innovation to their customers.
- That IP issues are not a matter for ICT policy as it is dealt with in other laws and policies.

12.8.1 Interventions

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The following approaches to intellectual property are adopted:

- South Africa can and should encourage domestic ICT innovation and associated IP, subject to the country's intellectual property laws.
- Government will therefore explore measures aimed at introducing a creative commons licensing[97] framework.
- Government will further consider incorporating the utility model system[98] into Intellectual Property provisions to promote domestic innovators. An awareness campaign will be implemented, to familiarise grassroots innovators with the benefits of the utility model once this is introduced. This is a critical element in protecting small and micro innovators given the importance of not disclosing information related to invention before protecting the IP.

12.9 Digital Technology Hubs

International trends indicate that many countries have started to extend innovations beyond universities, state research institutions and private sector RDI. This is about bringing innovation at the disposal of SMMEs and young innovators. Increasingly, there is a significant shift in favour of digital hubs such as the United Kingdom's Silicon Roundabout and Kenya's iHub. The establishment of the Meraka Institute in South Africa, heralded a shift to this strategy of creating hubs for digital innovation. In order to maximise and spread innovation across the country, there's a need for technology hubs across the country.

12.9.1 Interventions

Informed by international trends regarding the development of Digital Technology Hubs, the following decisions are made:

- The Departments of Telecommunications and Postal Services, Science and Technology and the Meraka Institute will coordinate programmes to roll-out support mechanisms for the technology hubs to be established in various centres of the country;
- Government will aim to develop at least one technology hub in each of the country's metros and one each in provinces without metros over the short-to-medium term. These hubs will serve as zones in which ICT entrepreneurs are incubated, formal RDI entities (universities and research institutes) and industry partners could co-exist. They will be directed, to focus on the priority market areas identified in the ICT RDI Roadmap:
    - The model adopted for these hubs will promote partnerships between municipalities and service providers to re-purpose commercial and industrial premises,

[97] A creative Commons (CC) license is one of several public copy right licenses that enable the free distribution of an otherwise copyrighted work. A CC license is used when an author wants to give people the right to share, use, and build upon a work that they have created. Creative Commons licenses let people easily change their copyright terms from the default of "all rights reserved" to "some rights reserved." https://en.wikipedia.org/wiki/Creative_Commons_license

98 A utility model is an exclusive right granted for an invention, which allows the right holder to prevent others from commercially using the protected invention, without his authorization, for a limited period of time. In its basic definition, which may vary from one country (where such protection is available) to another, a utility model is similar to a patent. In fact, utility models are sometimes referred to as "petty patents" or "innovation patents." The term of protection for utility models is shorter than for patents and varies from country to country (usually between 7 and 10 years without the possibility of extension or renewal) – World Intellectual Property Organization (WIPO). http://www.wipo.int/sme/en/ip_business/utility_models/utility_models.htm

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- The hubs should be able to operate as community ICT access centres such as the community ICT centres currently supported by USAASA.
- Strategies will be developed to integrate the informal economy into the Hubs to encourage local and community based innovation.

- Small-scale community ICT centres will be established in rural areas and satellite access points of the digital hubs.

Small ICT innovators should be assisted to manage and commercialise their own intellectual property rights. The Hubs should also assist SMMEs to access funding to commercialise their creations and innovations.

12.10 Stimulating revenues and investments

Investment in the ICT sector is a fundamental policy goal for Government, alongside transformation, diversity, universal access, and Black Economic Empowerment. While investment can be approached in broad terms, the ICT industry is slightly complex as each sector is governed by its own legislative and regulatory particularities. Government, through its Strategic Infrastructure Programme 15 (SIP 15), aims to ensure that investment resources are effectively coordinated in order to expand access to communication technology infrastructure in the country. A holistic approach to stimulating local and foreign direct investments will maximise the available resources to achieve broader national policy goals.

Government has established a myriad of funding instruments to finance critical infrastructure and manufacturing across sectors, including the ICT sector. However, the current approach to financing the ICT sector does not include non-infrastructure, yet important aspects of the ICT value chain, such as software and applications. This is beside the fact that the operations and functioning of ICT infrastructure depends on these products or services. A holistic view is needed to ensure that government's funding interventions in the ICT sector are not confined to hard infrastructure, but it is all encompassing to promote competitiveness throughout the ICT value chain.

Finally it is important to consider the following challenges facing ICT start-ups:

- Funding institutions appear to focus on infrastructure development investment, and hardware manufacturing and less on software programmes.
- South Africa is generally short of Greenfield funding.
- Collateral requirements are prohibitive to starting up micro and small businesses.

12.10.1 Interventions

The ICT sector should be catered within the existing Government funding framework and the Minister has already begun working with other Ministries to ensure that these funds extend to support for ICT innovations, especially software and applications.

This however does not preclude the development of new funding programmes, which are targeted at specific sub-sectors of the ICT industry, and Government will explore this further in partnership with industry and other role players.

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12.11 Export revenues and Foreign Direct Investments

Attracting Foreign Direct Investments remains one of the key policy priorities of South Africa. South Africa seeks to attract foreign direct investment (FDI) to enhance growth, productivity and skills. South Africa needs to ensure in doing so that it is well positioned to achieve its socio-economic goals, which will allow for more freedom to attract the kind of FDI that suits the economic goals of the country.[99] Over the years, strides have been made to promote local and foreign direct investment although a lot still needs to be done, especially around coordination between the policy and the industrial responsibilities of government.

12.11.1 Interventions

The Minister and the Ministry of Trade and Industry will actively collaborate on developing strategies to attract sustainable FDI in the ICT Sector. These strategies will consider opportunities across the Internet and ICT value chains (see Chapter Eight).

12.12 Manufacturing

Developing a vibrant and sustainable electronics manufacturing industry in South Africa is an important aspect of the National Development Plan (NDP). As outlined in the NDP, South Africa must develop from an economy based on extraction of natural resources to one in which economic value is created from the manufacturing of goods for both the domestic and export markets. The electronics industry is identified in the Industrial Policy Action Plan (IPAP) and the New Growth Path as one of the areas for employment creation and transforming the structure of the South African economy to prioritise industrialisation and address problems relating to balance of payment and trade. South Africa needs to move from being a consumer of other countries' finished goods to being a producer. [100]

Current plans to increase broadband connectivity; the introduction of digital terrestrial television and the recovery in the global semi-conductor industry are opportunities for growth in the electronics sector which should stimulate manufacturing and local manufacturing. Set Top Boxes and cables, for example, are some of the products which have been designated for local procurement by state entities to stimulate local manufacturing.

Local demand, coupled with the prospect of export into other parts of the African continent, provide a formidable case for continued policy interventions to catalyse growth. Given a broad spectrum of possible interventions and opportunities, priority areas of growth in the electronics-manufacturing sector must be informed by a proper market analysis, which must be jointly coordinated by the DTPS and the DTI, taking into account their respective mandates.

The DTI developed an electro technical sector development strategy in 2008 and commenced with its review in 2016. Its focus is primarily on opportunities which can be targeted from the manufacturing elements of the sector, including taking advantage of emerging sub sectors such as White Goods and Compressor manufacturing.

With regard to supporting electronics manufacturing, the following were considered:

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[99] Samuel, C. "The Dark Side of Foreign Direct Investment: A South African Perspective", South African Institute of International Affairs, December 2013

[100] SACF. 2014. Position paper on STB controls

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- While South Africa has introduced various incentive packages to boost investment, only a few are specific to the ICT environment.
- The disadvantages of the current broad incentives are that they have to be competed for against established and capital-intensive industries. They do not apply a budget quota system to ensure that all the sectors can benefit.
- In addition, the number of ICT beneficiaries demonstrates that ICTs are not prioritised[101].
- These incentives operate on a first-come first-serve basis, thus benefiting established industries and there is a perceived limited ICT competency. Therefore, on its own the ICT industry does not have industry-specific incentives to drive its growth.

12.12.1 Interventions

Government will develop an Electro Technical industrial strategy that will focus on interventions necessary to promote local manufacturing of electronics goods for local use and for export purposes.

12.13 Economic Empowerment

The ownership patterns across all sectors of the South African economy remain skewed in favour of predominantly white males, notwithstanding the strides that have been to promote diversity though black economic empowerment policies. Black ownership of JSE listed companies (including ICT companies) remains marginal at less than 10%. Transformation is therefore still a critical policy goal to achieve equal participation in the economy.

Transformation is not an issue of race alone. It has to be looked at from a broad industry perspective in terms of ownership, decision-making, business practices, staffing and products, and the society within which it operates. There is a need therefore for continuous and sustainable transformation that adds value to the industry at large and adds to the bottom line. The moral and social reasons for empowerment to succeed also cannot be ignored.

12.13.1 Interventions

During the policy review process, a number of benchmarks were considered to evaluate whether the EC ACT and the ICT Charter sufficiently provide for the transformation of the ICT sector, from a B-BEEE perspective. While the existing legislation provides an explicit framework for economic empowerment, more work still needs to be done to strengthen implementation.

- The ICT Charter Council will be adequately resourced and mandated to urgently put in place monitoring mechanisms to ensure that the Charter is being consistently enforced.
- Mechanisms will be put in place to ensure that the Council fulfils all aspects of its mandate including that of an annual review of the threshold for BBBEE stakes.[102]
- The Council must further ensure that the sector definition is aligned with the ICT charter, once the overall definitions have been reviewed (*refer to recommendation in previous section*).
- Mechanisms will be put in place to ensure that penalties will be applied to government departments, which do not adhere to the Charter.

[101] According to the DTI's 2012/13 Report on Incentive Performance: Selected Projects, only 2 electronics companies, Tellumat and Hi Sense, have benefitted from the MIP scheme.

[102] An important feature of the Charter compared to the generic Codes of Good Practice is that, if the rand value of the total BBBEE stake is in excess of R7.5 billion, the measured enterprise is considered to comply with the equity target.

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Multinationals, which cannot contribute to BBBEE through equity shares, are required to contribute to economic empowerment through Equity Equivalent Programme (EEP). The value of these EE contributions may be measured against 25 per cent of the value of the multinational's South African operations or may be measured against four per cent of the total revenue from its South African operations annually over the period of continued measurement.

In order to ensure the effectiveness of Equity Equivalents within the ICT sector, the following requirements are introduced:

- Equity Equivalent programmes should be considered amongst various policy tools to promote economic empowerment.
- The ICT Charter Council will be mandated to undertake a study of the impact of Equity Equivalent Programmes and undertake amendments of the provisions if it is deemed necessary.
- Multinationals conducting business in South Africa will be encouraged to establish local offices and manufacturing plants.
- Government will ensure that the EEP also addresses the empowerment of women and youth.

12.14 Skills development

The ICT Panel recognised the need for a new skills dispensation to drive heightened innovation in the ICT sector. In order to meet the goals set out in this policy, South Africa needs to increase ICT skills across all spheres of society. SA Connect[103] provides for interventions within the basic education and post-school sectors, in government and adult e-literacy as well as youth development and sectoral programmes.

Skills development for an ICT-enabled world under the mandate of the DTPS was carried out by the E-Skills Institute, the National Electronic Media Institute of South Africa (NEMISA) and the Institute for Satellite and Software Applications. In February 2014, these institutions were merged to form the iKamva National e-Skills Institute (iNeSI). The underlying iKamva model was developed specifically for South Africa following a six-year international investigation. As its principal role, the Institute seeks to act as a catalyst for a new e-skills dispensation in South Africa working in partnership with other role players within and outside government.

12.14.1 Interventions

There will be a focus on developing programmes which focus specifically on ICT innovations such as skills for cloud computing, big data and Internet of Things.

The ICT policy review noted the fragmented nature of the skills sector, making it difficult to maximise the value of the existing interventions to develop new e-skills across the ICT sector. The ICT review panel recommended that a new dispensation based on improved coordination and partnerships within and outside government was necessary.

In this regard, Government will consider how best to ensure coordination in order to:

- Monitor the national e-skills gap.

[103] South Africa Connect: pg. 58-59.

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- Co-ordinate and facilitate opportunities for e-skills within the various current skills plans and strategies, including the current National Skills Development Strategy, the Skills Accord and the DHET's Green Paper for Post School Education and Training.
- Advance synergies and promote alignment in the planning between the different organs responsible for skills in the ICT sector, including the MICT Seta, and other Setas, TVET's, industry, universities, colleges, and schools;
- Develop and maintain an Information and Knowledge Management System (IKMS) in respect of labour market data;
- Address the disconnect between the supply side skills (through universities and FET colleges) and the demand side skills, where the skills needed for economic growth are not supplied by the universities and FET colleges;
- Monitor and report on the various e-skills initiatives;
- Establish an integrated database of information on skills training, collating data from relevant government departments and agencies through Statistics SA.

Finally, policy needs to provide clarity regarding the treatment or certification of industry skills development programmes. Most of the programmes offered by industry are currently not recognised in terms of the National Qualification Framework. Submissions from stakeholders indicated that programmes offered and developed by industry including ICT Vendors are generally not accepted as qualifications, and that this is a problem, which needs to be addressed.

In order to address uncertainties industry should be encouraged to align its training programmes with those of the SETA and participate in the development on new courses and programmes.

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13. Institutional Frameworks

"A capable state does not materialise by decree, nor can it be legislated or created from conference resolutions. It has to be painstakingly built, brick by brick, institution by institution, and sustained and rejuvenated over time. It requires leadership, sound policies, skilled managers and workers, clear lines of accountability, appropriate systems and consistent and fair application of rules."[104]

National Development Plan

This Chapter focuses on the governance and institutional frameworks necessary to implement this White Paper and ensure maximum public value from public resources, in line with Government's vision of a capable state. The Policy positions adopted are aimed at both addressing challenges faced in the past and developing institutional frameworks relevant for the future evolving ICT sector.

13.1 Context

The South African Constitution sets out the overall framework for policy-making, oversight and accountability and the responsibilities of different spheres of Government. It states that:

- Parliament is the Legislative Authority and must scrutinise and oversee executive action. (Section 42) All organs of state are accountable to Parliament. (Section 55)
- The Executive is responsible for crafting and implementing national policies and implementing national laws. (Section 85)
- Each sphere of government (national, provincial and local) must "*exercise their powers and perform their functions in a manner that does not encroach on the geographical, functional or institutional integrity of government in another sphere*". (Section 41)
- Provincial government is given exclusive powers in some areas (provincial planning, provincial cultural matters and sport), and concurrent powers with national government in others. (Schedules 4 & 5)
- Municipalities have the right to "*govern, on (their) own initiative, the local government affairs of (their) community, subject to national and provincial legislation*". National and provincial governments "*may not compromise or impede a municipality's ability or right to exercise its powers or perform its functions*". (Section 151)

The Constitution further guarantees the right to just administrative action that is "*lawful, reasonable and procedurally fair*" (Section 33).

Finally, the Constitution sets out the values and principles governing administration across the public sector. Section 195 states that public administrations must, among other things:

- Maintain high ethical standards;
- Be efficient and effective and use public resources economically;
- Be "*development-oriented*";
- Respond to people's needs;
- Promote public participation in policy-making; and

[104] Ibid, page 363

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- *Foster transparency*
- *Provide services "impartially, fairly…and without bias".*

13.1.1 Challenges

Several concerns were highlighted during the process of developing this White Paper about the effectiveness of the institutional framework in place.

Stakeholders consulted indicated that a lack of coordination between different public entities, duplication of resources and inefficient and ineffective regulation has hampered the realisation of objectives set by Government for the ICT and postal sectors. South Africa's National Broadband Policy, "*South Africa Connect*" notes similar issues and proposes that:

- Constraints on effective regulation be addressed urgently;
- Institutional capacity should be strengthened in the Department itself and in portfolio organisations; and
- State-owned companies should be rationalised.[105]

As indicated in previous chapters, the need for a whole-of-government commitment to digital transformation, a holistic approach to governance, regulation and administration of the ICT sector and coordination across the Internet and digital value chain were highlighted during this policy review process as crucial. It was also noted that governance and regulation of the Internet and the ICT value chain is currently fragmented across different institutions:

- The Independent Communications Authority of South Africa is responsible for the regulation and licensing of spectrum, numbering resources and electronic communications networks and services in line with national policy objectives. It is also mandated to regulate postal services and, among other things, ensure fair competition in the ICT sector and the protection of users.
- The .za Domain Name Authority (.zaDNA) is responsible for regulating and administering the .za namespace including licensing of .za registries and registrars.
- The Universal Service and Access Agency of South Africa (USAASA) is responsible for some aspects of regulation of universal service and access.

13.2 Objectives

The objectives of this institutional framework are to ensure:

- Effective, responsive and flexible ICT governance and regulation across the ICT and Internet value chain to facilitate the vision of a people-centred and inclusive digital society.
- Effective oversight and accountability of public institutions to realise the NDP vision of a capable state focused on inclusive social and economic transformation in South Africa.
- Maximum public benefit and value from public resources.
- Meaningful public participation in policy making and regulatory processes to facilitate active citizenship and reinforce the multi-stakeholder approach to Internet governance.

[105] Department of Telecommunications & Postal Services, "South Africa Connect – Creating Opportunities, Ensuring Inclusion: South Africa's Broadband Policy", page 32

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13.3 Principles

The NDP emphasises the important role that public entities can play in fulfilling policy goals and constitutional obligations, but cautions that such institutions should be established only if objectives cannot be met by either Government and/or the private sector. In line with this, the following principles will guide the approach to institutional governance:

- Institutions must have a distinct mandate focused on meeting clearly articulated public goals.
- Regulation of the sector must focus on realising Government's objectives for the sector and ensuring maximum public benefit from public resources. Within this framework, the regulator will fulfil its mandate freely, fairly and impartially.
- Government's obligation to ensure inclusive and sustainable development and its responsibility therefore to counter market failure and ensure equity will be paramount in determining what entities or partnerships it establishes or supports.
- Any state support (whether monetary or in kind) for any entity, company or institution must not result in market distortion/s but focus on addressing market failure.
- Government support must not exceed what is necessary to cover the costs of fulfilling the identified public interest mandate.

13.4 Interventions

The following policy interventions are aimed at addressing the above challenges while considering the new policy approaches identified throughout this White Paper:

- **Coordinated leadership**

The realisation of the objectives of digital transformation of government, the economy and society outlined in this White Paper will require whole-of-government commitment, leadership and coordination (*see Chapter Four*). The Cabinet will therefore establish an Inter-Ministerial Digital Transformation Committee to drive the vision of an inclusive digital society in South Africa. This Committee will be responsible for coordination across different Departments and entities to ensure the objectives set out in this White Paper are realised efficiently and effectively. The Committee will lead the digital transformation project and further clarify the specific roles of particular Ministers, Departments, spheres of government, and portfolio organisations.

- **Enhancing public value**

Government has initiated a review of all state owned companies and entities within its portfolio. The goals and objectives set in this White Paper will guide this process of streamlining mandates and institutions within the portfolio.

- The oversight and accountability framework for all entities under the DTPS will be strengthened in line with government policy and legislation (including the PFMA). Failure by entities to fulfil mandates will be sanctioned.
- Government will regularly review the ongoing relevance of all ICT-related portfolio organisations and partnerships. This will include a thorough assessment of whether the mandate and functions of any institution can be fulfilled by Government, another state-owned entity, the private sector or a non-governmental organisation.
- No entities, institutions or partnerships will be established without an assessment of the expected benefits to be derived from these against the likely costs involved. This will include

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appraisal of whether the mandate or responsibilities for such entity or partnership can be better delivered by Government itself or a private entity and if the establishment of the entity or partnership is the most feasible remedy.

- **Clarifying roles and responsibilities**

As indicated above, the Executive is responsible for developing policies and implementing these and legislative provisions. Individual Ministers are ultimately accountable to Parliament for the performance or non-performance of their Departments and that of portfolio organisations falling under them. All portfolio organisations, including any regulatory institutions, are obliged to fulfil and advance policies and objectives set by Government in line with the Constitution. They are accountable to the Minister and the public, via Parliament, in line with provisions of the PFMA.

The policy interventions adopted in this White Paper in preceding chapters provide greater detail on the roles and responsibilities of Government and the Minister. A summary of the interrelationship in some key areas is provided below.

As regards **Universal Service and Access** (*Chapter Five*):

- Government (the Minister) will be responsible for formulating policy approaches to universal service and access to communications and defining this concept. The Minister will determine and regularly review what baseline services are essential for meaningful access.
- A specific development fund aimed at supporting universal service and access (Digital-DF see below) will determine what entities and projects will be supported, based on Ministerial policy determinations. It will also be responsible for monitoring the impact of such developmental support and recommending changes in approach if objectives are not being met. The Digital-DF will continuously assess the universal service and access gap to inform its plans.
- The sector regulator will be responsible for implementing "*pay or play*" obligations for licensees, in consultation with the Minister. It will also be responsible for implementing the open access policy in line with this White Paper (*see Chapter Nine*) and monitor performance against objectives set.

In relation to **spectrum policy, planning and allocation** (*Chapter Nine*):

- Government will be responsible for spectrum policy-making, planning and allocation functions, and coordination of the roles of relevant stakeholders across all sectors. The Ministry will establish an Inter-Governmental Spectrum Working Group responsible for research, develop country positions, and allocation.
- The Ministry will also be responsible for international participation and frequency coordination functions, and allocation. The functions include reviewing and updating the National Radio Frequency Plan (NRFP), within a year after each World Radio Conference.
- The regulator will be responsible for assignment and licensing in line with government policy and the NRFP that has been developed by the Ministry. It will also be responsible for spectrum monitoring and evaluation, periodic audits and for maintaining a high quality and accessible database of spectrum assignments.

As regards **rapid deployment of ICT infrastructure** (*Chapter Nine*):

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- The Cabinet Digital Transformation Committee will have overarching oversight of implementation of this policy to ensure that the objectives set are met and infrastructure is efficiently rolled out. This Committee will ensure effective coordination between the different Ministries, spheres of government and stakeholders (including landowners). It will also establish a Rapid Deployment Coordinating Committee to ensure that all stakeholders and spheres of Government are aware of the Rapid Deployment Policy and of their responsibilities in relation to this.
- Government will, where necessary provide support (including training support) to municipalities, recognising the different capabilities and capacities at a local government level.
- The Minister will ensure that organisations within his/her portfolio implement policy decisions of Government in line with government policy. The Ministry will further be responsible for establishing and managing a centralised GIS database collating information on infrastructure deployment from licensees and other stakeholders (such as municipalities, government departments and landowners). The Minister will participate in relevant Government infrastructure coordination fora (e.g. SIP 15).
- Local governments will be predominantly responsible for approving deployment of infrastructure in their respective areas (as per the Constitution).
- Municipalities will be required to make provision for the installation of ICT infrastructure in their planning and ensure efficient roll-out.
- The regulator will put in place the regulatory framework to support this policy (including rapid deployment regulations, facilities leasing regulations and licence conditions). It will also gather information from licensees on deployments to assist government in updating the GIS database and be responsible for speedy dispute resolution where necessary.

13.4.1 Strengthening regulation and governance

Effective regulation and governance of the sector is a crucial contributor to fostering investment and innovation and therefore to social and economic transformation and growth. This White Paper has identified the need for coherent, coordinated and effective governance and regulation of the ICT sector across the digital value chain to ensure holistic implementation of the digital transformation strategy. As indicated above, regulation and governance of the ICT sector is currently spread across different entities including the Ministry, ICASA, .zaDNA and USAASA. This has resulted in overlaps and duplication of roles and a lack of coordination between the different entities.

Throughout this White Paper a number of additional “gaps” have also been identified – including the need to ensure a specific focus on governance of the Internet and promotion of this platform across society so that it can fulfil its potential to radically transform the economy and society. The policy review process has in addition emphasised the very different Constitutional imperatives underpinning the regulation of content (broadcasting) and infrastructure and resources. Section 192 of the Constitution stresses the need for independent regulation of broadcasting in light of this. It states:

“*National legislation must establish an independent authority to regulate broadcasting in the public interest, and to ensure fairness and a diversity of views broadly representing South African society*.”

Regulation of infrastructure and networks however needs to be underpinned by different Constitutional considerations, such as those related to equality of access to services, fair competition, consumer protection and administrative justice.

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13.4.1.1 Regulatory imperatives

Government is committed to the following key principles and approaches to regulation and governance of the ICT sector:

- Regulation and governance must be in the public interest and advance digital transformation of the public sector, the economy and society in line with the objectives of this White Paper.
- The integrity of the regulatory framework for ICTs, including the Internet, must be reinforced and protected in order to promote trust and confidence by all stakeholders.
- Regulatory and administrative decisions must be justifiable, evidence based and must be made fairly and objectively, without conflict of interest, bias or improper influence by any stakeholder.
- Independent regulation of content must be protected and broadcasting regulation insulated from any perceptions of government influence.
- There must be effective and holistic governance and administration of the Internet at a national level.
- The multi-stakeholder model for Internet governance must be reinforced.

13.4.1.2 Consolidating regulation across the Internet and ICT value chain

In line with the principles and imperatives above, governance and regulation across the ICT value chain (including the Internet value chain) will be consolidated into one entity. The integrated regulator will have sole responsibility for overseeing and promoting Internet governance, licensing and regulation of networks, services, spectrum and other scarce ICT-related resources, to achieve the objectives set in policy and law.

Specific broadcasting content regulation (such as licensing and regulation of broadcasting service licences) will not fall under this regulator – pending the finalisation of the review of all broadcasting related policies which will consider the framework for policy and regulation of the audio and audio-visual content sector holistically, taking into account the Constitutional objectives of freedom of expression including cultural expression.

The Economic Regulator will however issue all spectrum assignments and licence all electronic communications services (ECS licences) and network services (ECNS licences), including those providing broadcasting signal distribution services (*see Chapter 9*). It will also be responsible for *ex ante* competition regulation across the ICT and Internet value chains (*see Chapter 6*), and be responsible for consumer protection, regulation of the sectors in line with the objectives of this White Paper, the responsibilities currently allocated to the domain name authority, .zaDNA (*see Chapter 8)* and those aspects of USAASA's current mandate related to regulation. Regulation of the postal sector will also be incorporated. The consolidated ICT regulator will be given additional responsibilities to ensure holistic governance, administration and regulation across the Internet value chain.

Its responsibilities will include:

- Effective regulation, administration and governance of the ICT sector and all Internet resources to ensure affordable universal service and access in line with this White Paper.
- Spectrum allocation and administration in line with Government's spectrum policy.
- Licensing and regulation of networks and services and ensuring effective implementation and regulation of the open access network (*Chapter Nine*).
- Protection of the Open Internet (including ensuring net neutrality).

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- Governance, regulation and administration of Internet related resources and infrastructure, including implementing policy and managing the .za domain namespace, operating the .za second level domain name registries and accreditation of .za registrars;
- Approval, endorsement and operation of registries of current and future gTLDs based on South African geographic, cultural, community and other exclusively South African names. This responsibility includes developing policies for the gTLDs.
- Coordination of Internet Governance dialogue with all stakeholders, including monitoring developments in the global Internet Governance processes.
- Research into technical, policy, social and economic aspects of ICTs to facilitate pro-active regulation in line with government policy.
- Promotion of Internet security.
- Accreditation of Internet authentication service providers and cryptography providers;
- Development of a regulatory framework for digital object architecture.
- Regulation and management of scarce resources such as numbers.
- Type approval of equipment and devices;
- Ex ante regulation to ensure fair competition and promote innovation across the Internet and ICT value chains, in consultation with the competition and other regulators.
- Regulatory interventions to ensure proactive protection of consumers and users and ensuring quality of service, together with consumer protection agencies.
- Regulation and licensing of the postal sector.
- Collaborating with other public and/or regulatory (including self-regulatory) structures and entities to ensure compliance by licensees with general legal and policy requirements in place in South Africa. This includes the content regulator, the FPB, the privacy regulator, competition authorities, consumer protection agencies and financial regulatory bodies.
- Regulation to promote economic transformation (e.g. BBBEE).

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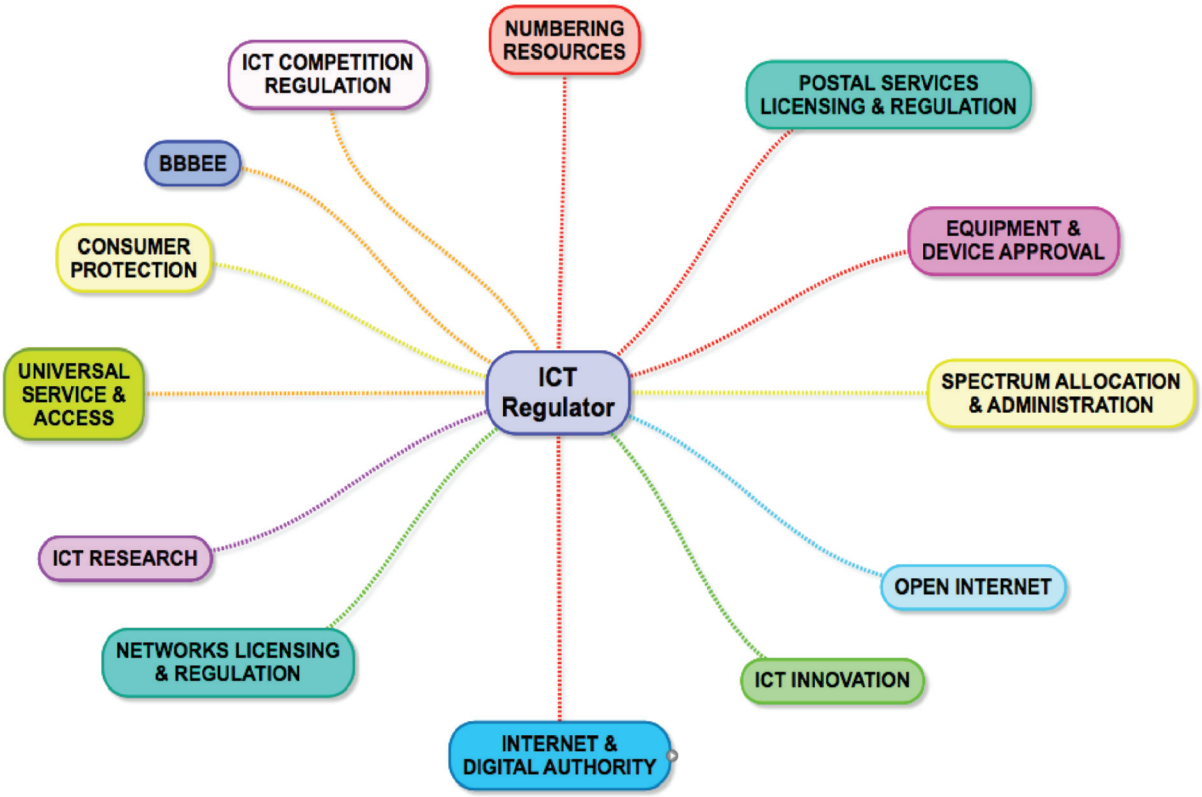
Illustration of New ICT Regulator



13.4.1.3 Independent regulation and governance of the sector

Government is committed to ensuring independent administration and regulation of ICTs.

In line with international best practice and broader South African policies and laws, the regulator will be solely responsible for fulfilling its licensing and regulatory responsibilities within the policy framework set by Government. It will be required to act fairly and impartially and will be protected from influence by all stakeholders, including those in the ICT sector.

- **Policy directions and policy provisions**

Legislation will clearly delineate the responsibilities of Government and the Minister (policy makers), Parliament (oversight and accountability) and the regulator in line with this White Paper to reinforce the autonomy of the regulator. It will stipulate that the regulator must apply the policy framework set by Government.

Legislation will also set out the framework for policy directions to the regulator. It will stipulate that the Minister may issue policies and policy directions on any matters except the granting, amendment, transfer, renewal, suspension or revocation of a particular licence. Any policies or policy directions will be developed through consultation with the public, in line with the South African framework for participatory governance.

The regulator will be required to timeously act on such directions unless it can legally justify deviating from these. In such event, it will be required to publish written reasons for why it varied

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from the policy/legislative provisions or directions including reporting on the impact the deviation will have on the envisaged policy outcomes and how it will ensure that the intended policy objectives are still met.

- **Assessing regulatory impact of decisions**

The regulator will be required to base its decisions on regulatory impact assessments (RIAs). Different types of RIAs might be required depending on the issue being explored and the cost of such an assessment must be weighed against the potential value-add of the process. The regulator will be required to outline different types/levels of impact assessment and how it will determine which type to apply (trigger criteria).

13.4.1.4 Compliance and enforcement

The regulator must also be able to effectively and efficiently monitor and where necessary enforce compliance with regulation, licence conditions, policies and laws. This requires swift action to redress any violations. The monitoring process will also assist the regulator in assessing whether the regulatory interventions adopted are having the intended impact and therefore, if necessary, adapt approaches adopted.

Administrative justice principles and the separation of powers require that there is independent arbitration of any allegations by the regulator of alleged non-compliance by licensees. The Complaints and Compliance Commission (CCC) of ICASA currently fulfils this function. The CCC is made up of independent legal and other experts who serve in a part-time capacity to adjudicate on complaints.

There have been concerns raised, however, about the efficacy of the current structures. These stem mainly from ICASA's perceived lack of capacity to effectively monitor compliance and from the length of time it takes the CCC to decide on complaints. It was argued, for example, that the CCC has to deal with too many complaints to be able to efficiently resolve these on a part time basis. The need to empower the CCC to make decisions rather than just make recommendations on remedies was also highlighted.

- Legislation will strengthen provisions in place to enforce compliance, resolve disputes between licensees (e.g. regarding interconnection disputes) and address consumer complaints against those regulated. It will also need to strength the regulator's ability to address commercial disputes that may involve licensees and other non-licenced parties (e.g. rapid deployment, landowners). Some aspects of this will be handled by an independent dispute resolution and/or consumer complaints committee (similar to the CCC) empowered to make and enforce decisions. The decisions of the revised complaints committee will be reviewable by a regulatory tribunal to be established (see below).

13.4.1.5 Accountability

There are two key components to this:

- Transparency and effective oversight, and
- Independent review of regulatory decisions

- **Oversight**

While the regulator will have sole discretion on licensing and regulation (see above), it exists to fulfil the public interest objectives set by Government and Parliament. It is therefore accountable to the

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Minister (as its executive authority) and the legislature (in relation to the powers conferred on it by Parliament through laws). The Minister will be held ultimately responsible by the legislature for the effectiveness of the regulatory framework. In light of this:

- Expectations of the regulator will be clearly outlined in law and in any performance management agreements reached between Parliament and/or the Minister and the regulator.
- Legislation will clearly outline and define the areas and issues that the sector regulator must report on to the Minister, Parliament and/or the public.

▪ **Reviewing decisions of the regulator**

In line with South African law and the right to administrative justice, stakeholders should also be able to review decisions of the regulator. This assists in establishing confidence in regulation, and addressing any perceptions of unfairness or wrongful application of the law by the regulator.

Regulatory decisions have been challengeable in courts since 1994. This has been crucial to ensure fairness and objectivity by the regulator. One of the obstacles however faced has been that these challenges have at times been lengthy thus defeating the need for speedy redress and/or delaying implementation of key policy interventions.

In order to address delays in legal processes, a specific ICT regulatory review tribunal will be established to appeal decisions of the regulator and/or its committees. This will not remove the right of those impacted by the decisions of the regulator to ultimately challenge decisions in court but will assist in resolving many issues and concerns speedily. Any stakeholder will be able to appeal decisions by the Tribunal in the courts.

13.4.1.6 Structure of the regulator

This White Paper does not set out a detailed structure for the new regulator but rather outlines the considerations that will guide the final determination of this:

- Government recognises the importance of facilitating increased coordination of regulation across the ICT and Internet value chains while ensuring that specific considered attention is given to each specific area (e.g. spectrum licensing, ECNS and ECS regulation and licensing, regulation of postal services, governance and administration of the Internet and competition related issues). The ICT Policy Review Panel recommended that specific focus areas be incorporated into the governance and management structure of the regulator through, for example, appointing vice-chairpersons responsible for specific areas. This recommendation will be considered along with other options to reinforce the needs for coordination and specialised interventions.
- Government further recognises the need to shift the focus of regulation to economic regulation and that this will need to be specifically considered in finalising the structure of the new regulator.

13.4.1.7 Funding of the regulator

Government will adopted a hybrid model for the funding of the regulator – in line with recommendations from the ICT Policy Review Panel. In terms of this:

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- The regulator will retain some of the fees collected on a cost-recovery basis so that the sectors regulated cover the costs of regulation. Legislation will set out mechanisms and processes to ensure that the determination of these fees is transparent and proportionate.
- Certain of the regulator's mandates will however continue to be funded by Government if there is no matching revenue stream. These include public interest inquiries and reviews of fair competition in the sector.

13.4.2 Supporting universal access and service

All policy interventions in this White Paper are focused on addressing current and possible future digital divides. Chapter Five looks specifically at development support for both supply and demand side issues to give the necessary impetus to digital transformation across society and the economy. It outlines challenges with structures put in place to provide such support (the Universal Service and Access Agency of South Africa and the Universal Service and Access Fund) and indicates how these entities will be transformed into a Digital Development Fund. In summary:

- Regulatory-related functions currently allocated to USAASA will be transferred to the regulator. USAASA will be dissolved and the USAF will be replaced by a new Digital Development Fund ("the Digital-DF") responsible for providing universal service and access support.
- The Minister will be responsible for formulating policy approaches to universal service and access to communications and defining and regularly reviewing what baseline services are essential for all citizens to access in order to participate in the digital society.
- The Digital-DF will be a distinct fund. Its establishment and operationalisation will be governed by the provisions of the Public Finance Management Act. It will provide support for both infrastructure and targeted demand stimulation projects and programmes and will be funded through private sector levies, donor funding and new incremental state funding. It will thus serve as a "clearing house" and collection point for funding from different sources.
- The Digital-DF framework will clearly specify that public funds must primarily be expended on addressing the true access gap. Mechanisms will be put in place to ensure that any such public funds are not even inadvertently utilised to replace or compete with existing private sector investment.
- The Minister, in consultation with Minister of Finance, the regulator, potential funders and other interested stakeholders, will finalise proposals on the Digital-DF governance structure to be put in place following the publication of this White Paper. This will consider best practice internationally and locally.

13.4.3 Addressing duplication

The Ministry of Telecommunications and Postal Services has initiated a review of all state owned companies and entities within its portfolio in line with the proposal in the national broadband plan that state-owned entities be rationalised. The goals and objectives set in this White Paper will assist this process of streamlining mandates and institutions within the portfolio.

13.4.4 Promoting participation and active citizenship

Government is committed to promoting active citizenship. To further this, the Minister of Telecommunications and Postal Services has established a National ICT Stakeholders Forum to facilitate participation by a broad range of stakeholders in implementation of ICT-related policies and plans.

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This Forum provides a platform for dialogue and engagement between government, the private sector, academia and civil society. According to its Terms of Reference, its focus is on accelerating implementation of all policies and sectoral plans. Membership of the Forum and participation in its meetings is open to all those interested in participating in fast-tracking implementation of government policies to build a people-centred and inclusive digital society and economy.

The National ICT Forum will therefore play a key role in assisting Government to implement this White Paper by facilitating the establishment of the partnerships essential to achieving the objectives set.

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GLOSSARY[106]

Active infrastructure sharing: Provision of specified services and active network elements needed to ensure interoperability of end-to-end services to users, including facilities for intelligent network services or roaming on mobile networks.

Angel investor: An investor who provides financial backing for small start-ups or entrepreneurs.

App: Application. A usually small, specialised programme or piece of software that runs on the Internet, a computer, mobile phone or other electronic device.

Bandwidth: The range of frequencies available to be occupied by signals. In analogue systems it is measured in terms of Hertz (Hz) and in digital systems in bits per second (bit/s). The higher the bandwidth, the greater the amount of information that can be transmitted in a given time.

Big Data: Is an all-encompassing term for any collection of data sets so large and complex that it becomes difficult to process using traditional data processing applications.

Bit stream access: A form of network unbundling. With bit-stream access, the incumbent maintains management control over the physical line. Unlike full unbundling and line sharing, access seekers can only supply the services that the incumbent designates.

Blog: A weblog is a journal (or newsletter) that is frequently updated and intended for general public consumption.

Broadband: An ecosystem of high capacity, high speed and high quality networks, services, applications and content that enhances the variety, uses and value of information for different types of users (*SA Connect*).

Cellular: A mobile telephone service provided by a network of base stations, each of which covers one geographic cell within the total cellular system service area.

Cost-based pricing: The general principle of charging for services in relation to the cost of providing these services.

Cybercrime: Illegal acts committed through the use of Information and Communication Technology (*National Cybersecurity Policy Framework South Africa)*.

Cybersecurity: is the collection of tools, policies, security concepts, security safeguards, guidelines, risk management approaches, actions, training, best practices, assurance and technologies that can be used to protect the cyber environment and organisation and user assets *(National Cybersecurity Policy Framework South Africa*).

Cross-subsidisation: The practice of using profits generated from one product or service to support another provided by the same operating entity.

Cybersquatting: is registering, trafficking in, or using a domain name with bad faith intent to profit from the goodwill of a trademark belonging to someone else. The common aim of cyber-squatters is to auction the domain names or sell directly to the person or organisation at a cost higher than the registration cost.

Digital: Representation of voice or other information using digits 0 and 1. The digits are transmitted as a series of pulses. Digital networks allow for higher capacity, greater functionality and improved quality.

[106] Adapted from ITU Trends in Telecommunication Reform 2013 unless otherwise stated

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e-Commerce: Electronic commerce is used to describe transactions that take place online, where the buyer and seller are remote from each other. In the context of this paper, it also includes the use of any ICTs, including mobile phones, to buy or sell goods and services.

e-Government: e-Government refers broadly to the innovative use of ICTs by government to facilitate collaborative and efficient governance and sustainable development (*UN e-Government Survey, 2014*).

Encryption: The process of converting plain text into code to secure information from being read by unauthorised persons or those without special computing knowledge.

E-services: refer to services delivered via the Internet, and over mobile technology (m-services) and other ICT platforms. This includes e-commerce as well as a wide spectrum of personal and government services based on the provision of knowledge, information, applications ("apps"), access to markets, entertainment, education, health care, social networks, banking, surveillance, remote control, early warning, etc.

***Ex ante* regulation**: Anticipatory intervention. *Ex ante* regulation uses government or regulator specified controls to prevent socially undesirable actions or outcomes in markets, or direct market activity towards socially desirable ends (*infoDev 2005*).

***Ex-Post* regulation**: *Ex post* regulation addresses specific allegations of anti-competitive behaviour or market abuse. *Ex post* regulation aims to redress proven misconduct through a range of enforcement options including fines, injunctions, or bans (*infoDev 2005*).

Fixed line: A physical line connecting the subscriber to the telephone exchange. Typically, fixed-line network is used to refer to the public switched telephone network to distinguish it from mobile networks.

Facilities-based service supplier (or operator): An electronic communications service provider owning, as opposed to leasing, networks used to provide electronic communications services *(WTO*).

Facility-based competition vs. service-based competition: When the entrant uses the facilities of the incumbent, competition is called service-based and can be realised either through resale or through unbundling schemes. When the entrant builds its own facility, competition is referred to as facility-based (*Marc Bourreau and Pinar Dogan*).

Free-to-air: refers to a service which is broadcast and capable of being received without payment of subscription fees.

Interconnection: means the physical or logical linking of two or more electronic communications networks, electronic communications services, broadcasting services, services provided pursuant to a licence exemption or any combination thereof.

Internet Exchange Point (IXP): A central location where multiple Internet Service Providers can interconnect their networks and exchange IP traffic.

IPv4: Internet protocol version 4. The version of IP in common use today. **IPv6** is the emerging standard, which aims to rectify some of the problems seen with IPv4, in particular the shortage of address space.

IPTV: The generic term describes a system where a digital television service is delivered using the Internet Protocol over a network infrastructure.

Internet Economy: (also referred to as the Digital Economy) can be broadly defined as an economy that is based on digital technologies (ICT). In this new economy, digital networking and communication infrastructures provide a global platform over which people and organisations devise strategies, interact, transact, communicate, collaborate, shop and search for information (*OECD*)

Interoperability: refers to the ability to make systems and organisations work together (inter-operate).

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Internet of Things: A global infrastructure for the Information Society, enabling advanced services by interconnecting (physical and virtual) things based on, existing and evolving, interoperable information and communication technologies.

Mobile virtual network operator (MVNO): A company that does not own a licensed frequency spectrum, but resells wireless services under their own brand name, using the network of another mobile phone operator.

Multiplex: means a network of frequencies designed to simultaneously permit the transmission of two or more channels.

Must-carry obligations: refers to the set of rules that obliges a Pay Television licensee to carry the Television programmes broadcast by a Public Broadcast Service Licensee.

Net Neutrality: is the principle that Internet service providers and governments should treat all data on the internet equally, not discriminating or charging differentially by user, content, site, platform, application, type of attached equipment, or mode of communication (*Wikipedia*)

Networks: refers to the ensemble of equipment, sites, switches, lines, circuits, software, and other transmission apparatus used to provide electronic communications services.

NGN: Next generation networks. These are packet based networks in which service-related functions are independent from underlying transport- related technologies. They are able to provide telecommunication services and make use of multiple broadband transport technologies.

Number portability: The ability of a customer to transfer an account from one service provider to another without requiring a change in number.

Open access: The creation of competition in all layers of the network, allowing a wide variety of physical networks and applications to interact in an open architecture *(infoDev 2005*).

Open standards: are a means of achieving interoperability. Open standards are often developed together with a range of stakeholders and there are no constraints on the re-use of the standard (*adapted from the European Union, "European Interoperability Framework for Pan-European e-Government Services*).

Open Data: refers to datasets that can be freely used, re-used and distributed by anyone, only subject to (at the most) the requirement that users attribute the data and that they make their work available to be shared as well (*OECD)*.

Persons with disabilities include those who have long-term physical, mental, intellectual or sensory impairments which in interaction with various barriers may hinder their full and effective participation in society on an equal basis with others (*UNCRPD*).

Server: (1) A host computer on a network that sends stored information in response to requests or queries. (2) The term server is also used to refer to the software that makes the process of serving information possible.

Spectrum: The radio frequency spectrum of Hertzian waves used as a transmission medium for cellular radio, radio-paging, satellite communication, over-the-air broadcasting and other services.

Over-the-Top (OTT): refers to delivery of services, audio, video and other media over the Internet without a multiple-system operator being involved in the control or distribution of the content.

Packet: Block or grouping of data that is treated as a single unit within a communication network.

Rights of way: Strip or area of land, including surface and overhead or underground space, which is granted by deed or easement for the construction and maintenance of specified infrastructure elements such as copper or fibre optic cables etc.

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Spectrum: The radio-frequency spectrum of hertzian waves used as a transmission medium for cellular, radio, radiopaging, satellite communication, over-the-air broadcasting and other services.

Spectrum commons: Spectrum bands reserved for unlicensed use and shared among low-power devices on an open access basis.

STB: Set-top box. A device connected to a television that receives and decodes digital television broadcasts and interfaces with the Internet through the user's television.

Tariff: Tariffs are the schedule of rates and regulations governing the provision of electronic communications services.

Technological convergence: A process by which electronic communications, consumer electronics, information technology and the media, sectors that originally operated largely independent of one another, are growing together. The process has two sides to it; where the technical side refers to the ability of any infrastructure to transport any type of data, while the functional side means that users seamlessly integrate the functions of computation, entertainment, and voice in a unique device able to execute a multiplicity of tasks.

Technology neutrality: A general term referring to rules that allow operators to adopt any technology standard for a particular service.

Teletext services: refers to a system that allows television viewers with special decoders to receive signals that display printed information as well as graphics on their screens.

Teledensity: Number of main telephone lines per 100 inhabitants within a geographical area. Effective teledensity reports fixed-line teledensity or mobile density—whichever is higher—in a particular geographical region.

Universal design means the design of products, environments, programmes and services to be usable by all people, to the greatest extent possible, without the need for adaptation or specialised design. Universal design shall not exclude assistive devices for particular groups of persons with disabilities where this is needed (UNCRPD).

VANS: Value-added network services. Telecommunication services provided over public or private networks which, in some way, add value to the basic carriage, usually through the application of computerized intelligence.

Wi-Fi: A mark of interoperability among devices adhering to the 802.11b specification for Wireless LANs from the Institute of Electrical and Electronics Engineers (IEEE).

Wireless: Generic term for mobile communication services which do not use fixed-line networks for direct access to the subscriber.

WSIS: The United Nations World Summit on the Information Society. The first phase of WSIS took place in Geneva (hosted by the Government of Switzerland) from 10 to 12 December 2003. The second phase will take place in Tunis (hosted by the Government of Tunisia), from 16 to 18 November 2005.

xDSL: While DSL stands for digital subscriber line, xDSL is the general representation for various types of digital subscriber line technology, such as ADSL (asynchronous digital subscriber line), such as VDSL (very high-speed digital subscriber line).

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Printed by and obtainable from the Government Printer, Bosman Street, Private Bag X85, Pretoria, 0001
Contact Centre Tel: 012-748 6200. eMail: info.egazette@gpw.gov.za
Publications: Tel: (012) 748 6053, 748 6061, 748 6065

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