

### 5.1 Introduction

The past decade has seen an unprecedented rise in the number of people connected to voice, video and internet services globally. The International Telecommunication Union estimates that 5,2 billion people will be connected globally using mobile devices by 2020. The strong evidence of linkages between investment in Information Communications Technologies, economic growth, improvements in the economy and other social indicators is now widely accepted. However, such development objectives can be achieved only within an enabling environment, which inherently comprises the infrastructure and services of electronic communications (previously known as telecommunications). This Chapter thus examines the key issues related to the creation of a sustainable enabling environment for the deployment, uptake, and adoption of ICTs in the South African environment. Its focus therefore is on the key issues in the policy environment matters which relate to infrastructure issues. This includes: policy and regulation framework; economic regulation; specific technology matters; and Radio Frequency Spectrum.

In the current era, one of the most pressing issues related to the creation of an enabling environment relates to broadband policy. This is receiving attention world-wide, and according to the ITU, 134 countries today have comprehensive plans to introduce broadband and Information Communications Technologies as part of their developmental plans. South Africa is also in the process of finalizing its own Broadband Policy, Strategy and Plan – “South Africa Connect” - that sets targets and programmes for the widest distribution and use of ICTs in line with the vision contained in the National Development Plan which seeks to ensure the creation of a “seamless information infrastructure, which will be universally available and accessible, and will meet the needs of individuals, business and the public sector, providing access to the creation and consumption of a wide range of converged services required for effective economic and social participation – at a cost and quality at least equal to South Africa's main economic peers and competitors” (NDP: pg170).

### 5.2 Regulatory Environment

#### 5.2.1 Challenges

In spite of the positive growth achieved since the adoption of the Telecommunications White Paper, research conducted during the current policy review process identifies a number of unintended consequences of the policies pursued over the past 15 years. The electronic communications sector is not as competitive as it should be. The pro-competition regime envisaged in the legislation has not been fully implemented and consequently has not borne the intended outcomes. The fixed and mobile sectors are dominated by entrenched operators with significant market power who are able to influence market developments significantly. The regulatory environment is relatively weak with an under resourced and under capacitated regulator. A review of the institutional roles and responsibilities of the different players involved in policy and regulatory settings indicate a lack of common purpose and interaction to the degree required to drive policy. The lack of interaction is at times institutionalised. The question now is how all institutions dealing with public policy can better cooperate to deliver on the key policy and legislative mandates.

#### 5.2.2 Current legislative framework

The Electronic Communications Act of 2005 provides a regulatory framework for licensees in the electronic communications sector. The Electronic Communications Act of 2005 was intended to provide a legal framework to allow for the opening up of the sector to new

entrants, and consequently for the regulation of competition, interconnection and facility leasing arrangements.

### **5.2.3 Licensing**

The Independent Communications Authority (ICASA) may grant electronic communications network licences and electronic communications services licences. The licences may be granted on an individual or class basis.

Individual licences can be granted for networks, as well as services at provincial and national level to licensees operating for commercial purposes. Individual licences are also issued for networks and services for entities in which a public entity owns interest greater than 25% of the share capital. The Independent Communications Authority may only grant individual licences in accordance with a directive issued in terms of Ministerial directives.

Class licences are issued upon registration for networks and services of a district municipality or those of municipal scope operated for commercial purpose.

This licensing regime came into effect after the enactment of the Electronic Communications Act of 2005 which mandated all licensees to convert their old licences to fit into the horizontal licensing order that was contained in the legislation.

### **5.2.4 Competition issues**

2005 is regarded as the watershed year for the intensification of competition brought about by the Electronic Communications Act (ECA). The Electronic Communications Act intended to promote competition within the ICT sector.

The current phase of telecom reforms can be described as one where broadband services are intensified. This is aimed at achieving the National Development Plan's vision. The success of the Broadband Policy and the meeting of its targets will be dependent, amongst other things, on the performance of the electronic communications market. Provisions for competition and the actual competition will be vital in the affordability and the extent of use of broadband services.

In the electronic communications sector, the debates about the modes of competition centre on the comparison and the determination of the efficacies of facilities-based competition against services-based competition.

The advocates of Facilities-Based Competition claim that in the long term, market equilibrium will be realised when players in the market build their own facilities.

On the other hand the advocates of Service Based Competition argue that available facilities, usually of the previous monopolies such as Telkom, should be shared. They argue that competition should be downstream, mainly in the retail market as opposed to the wholesale market.

These debates are playing themselves out in discussions about local loop unbundling, regulatory forbearance in mandating access to new broadband infrastructure, the sharing of broadband infrastructure, and wholesale or retail price regulations.

#### **5.2.4.1 Regulation issues affecting competition**

The Independent Communications Authority is currently able to impose regulations affecting the following activities and issues:

##### **5.2.4.1.1 Interconnection**

The Authority prescribes regulations to facilitate the conclusion of interconnection agreements that allow different operators to connect their networks. The regulations and interconnection principles contain model terms and conditions including timeframes<sup>s</sup> and procedures for agreements. Subject to these regulations any person licensed can, on request, interconnect to any person providing a service in terms of the Electronic Communications Act. Interconnection agreements must be filed with the regulator. In addition, ICASA regulates carrier pre-selection that enables subscribers of one service to be able to switch services and use any other provider.

The Regulator has developed regulations consistent with the provisions of the Act. Amongst other things, the regulations deal with the requirement on operators to publish interconnection offers, including the location of interconnect facilities, capacity of the facilities, and prices charged. This is to ensure that everyone knows of the interconnection opportunities. The regulations are geared towards transparency in the interconnection engagements of different competitors.

The current regulations do not deal with the prices charged and the terms of financial arrangements between parties. Parties are only required to notify the Authority and file the agreements, without the Authority dealing with the terms of the agreements. The bigger operators still have price-setting potential over the smaller competitors who seek to interconnect as the only way of survival.

While interconnection regulations are important and have the potential to level the playing fields, they are constrained by what the regulator can or cannot do to regulate the financial arrangements between the parties entering into connection agreements. Interconnection regulations cannot be enough without the full implementation of the competition sections of the Electronic Communications Act, which can impose pro-competitive remedies in case of unfair discrimination or abuse of dominance.

##### **5.2.4.1.2 Electronic Communications Facilities Leasing**

The Authority prescribes regulations to facilitate the conclusion of facilities leasing agreements between different operators. The regulations cover both the essential and basic facilities. The regulations disallow any preferential or exclusive arrangements and provides for measures to deal with undue delays in entering into facilities leasing agreements. The facilities leasing regulations may exempt operators without Significant Market Power from the requirement to enter into facility leasing agreements. For purposes of promoting new investments in broadband fibre networks, the Authority may exempt even operators with Significant Market Power (SMP) from the requirements to lease fibre loops and sub-loops serving residential premises, if they meet certain conditions. These conditions extend exemptions to facilities that were built after the Act came into effect, facilities that serve areas that were not served prior to construction, or are in an area where the new facilities are constructed to compete with an incumbent operator. The Authority may prescribe regulations for wholesale rates for facilities leasing.

The issue of local loop unbundling and the list of essential facilities were raised by a number of submissions in the FramingPaper responses. The submissions raised the need for a more thorough implementation of the current legislation. Some complained that the potential lessee enters into discussions without any insight into the networks they lease and therefore the need for the dominant player to be held accountable for Quality of Service by way of a measurable Service Level Agreement. Some pointed to the fact that there are inordinate and unnecessary delays in entering into leases and that therefore ICASA should determine the reasonableness of the requests to lease on an urgent basis.

The law requires the Authority to prescribe a list of essential facilities that must be subject to facility leasing regulations. Yet the law also limits the definition of essential facilities to those that cannot be duplicated for economic, environmental and technical reasons. The definition places a regulatory burden on the regulator to determine in an objective manner what cannot be economically, environmentally and technically duplicated. As an example, fixed local loops can now be substituted with wireless loops and can therefore in theory be excluded from the list of essential facilities. The law also focuses on copper lines as it exempts broadband infrastructure of operators with SMP so long as the network was built after the Electronic Communications Act of 2005 came into effect.

The promotion of facilities leasing should be balanced against the desire for different operators to rollout networks so that there is also effective competition in the infrastructure provision layer. The impact of local loop unbundling as part of facilities leasing has to be weighed in relation to the incentives for the owners of the loop to invest further in fibre and other technologies that make broadband to the home possible. Similarly, facilities leasing and local loop unbundling must be weighed against the desire to encourage the electronic communications network licensees to invest in roll-out of fibre to residential areas and offices.

The South African reality is that the only areas with extensive network coverage are in urban areas. The revenues used to construct and maintain networks and local loops in rural areas is dependent on profitable facilities in urban areas. A facilities leasing framework that does not take the reality of cross-subsidisation into account is most likely to affect the investments that must be made to extend networks and services to rural areas.

#### **5.2.4.1.3 Market Concentration and the Significant Market Power (SMP)**

The Authority is required to prescribe regulations defining the markets and market segments, as well as define what constitutes acts that prevent or lessen competition. The Authority is also required to periodically review markets and market segments to determine if effective competition exists in any given market or segment. The Authority has powers to impose pro-competition conditions, including separation of accounts, price controls and prohibitions against discriminatory behaviour.

Notwithstanding attempts to improve competition, the South African communications market is one of the most concentrated in the world taking fourth position after Mexico, Norway and New Zealand. The fixed market is still dominated by Telkom. Since its introduction into the market, Neotel is yet to make substantial inroads to change the market structure in a significant way. While the introduction of Cell-C in 2002 was aimed at opening up the mobile market, the operators who were established at the inception of the mobile market still dominate with significant market power.

The assumed SMP regulation model that underpins the above-mentioned definitions and mechanisms is the Static Efficiency Model (SEM), which involves trying to achieve efficient production of existing services by implementing cost-oriented and non-excessive prices, minimising and ensuring fair network access and interconnection conditions and the

absence of predatory pricing. In South Africa, SMP lies with operators who derive their power from the historic oligopolistic nature of the market. Therefore confrontations about SMP will always be with similar operators.

Long term and high level policy interventions must be consistently applied to ensure that Significant Market Power does not hinder the opening of the market and the success of new entrants through abusing their market power and entrenched roles.

#### **5.2.4.1.4 Numbering**

The Authority is required to make regulations for a numbering plan and for efficient use and allocations of numbers. The regulations must provide for number portability based on a national number portability database. The numbering plan cannot be discriminatory.

#### **5.2.4.1.5 Spectrum**

The current legislative environment promotes the efficient use of the scarce radio frequency spectrum and its allocation to many different users in various communications fields.

There are a number of ways in which the Regulatory Authority authorizes access to the spectrum by the different operators. These could include a “beauty contest” competitive bidding process based on best use, lottery allocation involving random selection, or an auction in which the highest bidder wins. ICASA favours a technology-neutral allocation on the grounds that, among others, an efficient technology should not be penalized. In some other countries, spectrum is assigned on the basis of need, although eligibility criteria may be set. Blocks of spectrum may be assigned to eligible licensees on a first-come- first served basis. Further requests can be entertained based on demand.

#### **5.2.5 Spectrum Pricing**

In general, the role of pricing in a market is to guide the users in making decisions to use the spectrum resources more efficiently. It follows that the approach to pricing should reflect the scarcity, besides incentivising efficiency in use. It is therefore important to decide upon the objectives that the pricing policy should achieve.

##### **5.2.5.1 Management of spectrum**

The management of the radio spectrum is a combination of administrative, regulatory and technical procedures to ensure the efficient operation of radio communication equipment and services. Simply stated, spectrum management is the overall process of regulating and administering access to and use of the radio frequency spectrum. A primary goal of spectrum management is to ensure optimal use of the radio spectrum, in social, economic and technical terms. The RF spectrum is a national resource, much like water, land, gas and minerals. Unlike these, however, RF is reusable. The purpose of spectrum management is to mitigate radio spectrum pollution and maximize the benefits of usable radio spectrum.

The International Telecommunication Union (ITU) constitution recognizes “the sovereign right of each State to regulate its telecommunication”. Effective spectrum management requires regulation at national, regional and global levels.

Because access to the radio frequency spectrum is vital to meet national political, cultural, social and economic objectives, it is in the national interest for nations to participate in international cooperative processes: to be good international citizens.

### **5.2.5.2 Spectrum for National Security**

Every national security structure needs to have permanent access to radio frequencies to meet vital security tasks. This is based on strategies, doctrines and different policies that national security structures adhere to.

The nature of high mobility of security operations and their logistics support requires wide use, with high-speed capacities of voice, data and image communications, surveillance, reconnaissance and reporting systems playing a vital role in the command and control system.

Many of these requirements can only be met with the use of radio systems. The equipment of national security communications adds and multiplies the power of forces. That is why the use of radio frequencies' spectrum is evaluated as one of the preliminary conditions for successful national security operations.

Those parts of government that use the spectrum for public purposes have complained that they are treated like commercial operators due to the manner in which they are charged for the use of the spectrum. They complain that government has a Constitutional mandate to provide the services they provide and therefore their use of the spectrum should be considered within this context.

### **5.2.5.3 Will Spectrum Shortage be a Driver for a Wholesale Model?**

Licence shortages and a lack of available spectrum are two significant factors driving operators to find new ways of sharing networks based on cooperation with a third party. In many markets, licences for new technologies, such as LTE, are being launched. To use new spectrum in a way that is technically efficient, competitive, and of maximum consumer benefit, especially when it comes to LTE on the sought-after 800 and 700 MHz bands, no more than three operators tend to be granted the rights to use new bands to offer competitive services. This leaves some without the possibility of differentiating themselves from new services. Those excluded from the market in these situations are then forced to launch new technologies through shared networks.

In markets such as Western Europe and India, regulators today tend to take a liberal view of the sharing of newly issued licences, stimulating increased competition – and thus facilitating the wholesale approach.

To drive operational efficiency and obtain other benefits beyond cost savings, most of today's operators use some level of outsourcing. In the next step of the industrialization process the wholesale model operations and assets are shared among multiple players through a third party, resulting in greater savings and further increasing efficiencies.

The Department of Communications earlier indicated the desire to establish a Spectrum Management Agency. The idea of a Spectrum Management Agency emanates from the Broadcasting White Paper. A review on this issue is required.

## **5.3 Overview of the Market**

### **5.3.1 Fixed- Line**

There are two operators licensed to provide fixed line network and services. Four operators provide mobile communications services. Telkom is the incumbent that has undergone some restructuring in the form of a 30% buy-out of its share and listing in the Johannesburg and New York Exchanges. Neotel is the second national operator, licensed in 2001 although it

only started operations in 2006. Infraco, a wholly state-owned company, was licensed to provide wholesale services.

The biggest municipalities have acquired class licences and deployed infrastructure for self-provision. Johannesburg, Cape Town and Durban started the trend that is now popular with other municipalities.

There are a number of other infrastructure companies that have started operations providing fibre optic infrastructure to licensed operators.

### **5.3.2 Fixed Market Dynamics**

According to a BMI-T study commissioned for the fixed-market sector, South Africa is characterised by stagnation. There has been a decline in fixed connections as more and more customers substitute fixed services for mobile services. Fixed-line penetration grew from 9,2% in 1993 to 10,7% in 1998, but since then it has steadily declined to 7,9% in 2012. This decline is expected to continue as the uptake of fixed lines decreases. The fixed-line broadband market shows signs of stagnation. Research also indicates that the cost for broadband packages is higher than the cost of mobile broadband. There are less than a million ADSL subscribers. The revenues of the fixed-line sector also indicate stagnation.

At an infrastructure level, the gap remains in local access networks. International connectivity is provided by three submarine cables. The national long distance network covers 50 000 kilometres and there are significant metro-area networks. It is significant that today 84% of South Africans reside within 10 kilometres of a fibre node. The available infrastructure can be leveraged to connect all South Africans to modern communications infrastructure and services. The regulator has consistently dealt with the wholesale side of the cost to communicate.

The deployment of fixed broadband infrastructure to close the access gap will require significant investments in the fixed-line environment. Regulatory certainty is necessary to draw the level of investments required.

### **5.3.3 Mobile**

There are four operators in the mobile market. Vodacom and MTN were licensed in the early 90s as new entrants in the then state monopoly environment. Cell C was licensed in 2001 as part of the introduction of new players. Telkom Mobile came about after the sale of Telkom shares in Vodacom.

In addition to the four licensed operators, Virgin Mobile started as a Mobile Virtual Network Operator in 2006.

#### **5.3.3.1 Mobile Dynamics**

The Mobile sector has shown consistent growth over the past 10 years. According to BMI-T report of 2013, the mobile sector has achieved 136% penetration and is well poised to play a much more significant role in providing mobile broadband services to a majority of South Africans. Research indicates that this is a global phenomenon as mobile technologies mature to offer services that rival fixed-line services.

Some operators have complained about the roaming rates that are imposed on new entrants if they want to use the infrastructure of established operators.

Research indicates that the price South Africans pay for services are high, compared with other markets. The Mobile Termination Rates are also high by international standards even

after ICASA has forced the operators to lower their termination rates through a glide path to 40c for established SMP players and 44c for the smaller players. ICASA has recently announced intentions to regulate lower termination rates.

The practice of setting on-net and off-net prices has come into focus as the discussions on the competitiveness of the mobile market unfold. The mobile operators charge differently for calls generated and terminated within their networks as opposed to calls generated within their networks and terminated in other networks. This practice, while beneficial to the subscribers who pay reduced tariffs for the calls, has the potential of locking in subscribers to particular networks and therefore affecting competition, more so if on-net call rates are even lower than the termination rates.

### **5.3.4 Services and barriers to entry**

#### **5.3.4.1 Consumer protection regarding wireless services**

There have been a number of stories in the media about subscribers falling victim to some service providers' gimmicks to make them take up subscriptions without their expressed consent. In some cases it was reported that a service provider got people to accept subscriptions and then began debiting them for services that they were not aware, were subscription services. The service provider would only reimburse the victims once they acted to stop the service.

Despite the existence of WASPA (Wireless Application Service Providers Association), an umbrella body that regulates the service providers in terms of a voluntary code of conduct, incidents such as these are on the increase. This raises the issue of how subscribers can use the regulatory structures to protect themselves. How can ICASA cooperate with WASPA in order to coordinate efforts to protect consumers from scams?

## **5.4 Digital Age**

### **5.4.1 Major Emerging Issues**

The electronic communications environment, like other market segments of the communications sector, is subject to technological changes due to the convergence that has enabled different services to be delivered using the same infrastructure and to be received by the same devices. The disruptive and beneficiary effects of this convergence are discussed in detail in the various sections of this document. Suffice it to indicate that the policy and regulatory approaches must now be reviewed to accommodate the changes that have occurred in order to provide regulatory certainty and a market structure that will allow for innovation and introduction of new services. In summary, the evolution of the electronic communications sector will be influenced by several factors:

#### **5.4.1.1 Shift to IP-based technologies**

The shift to IP-based technologies has two major implications for the market structure and competition in the electronic communications sector. The IP-based technologies make it possible to distribute many applications over a single network. In the IP-based environment there is no longer any need to build distinct and separate networks for voice, data, audio and video. This significantly decreases costs associated with network roll-out, and network operations.

On the application side, the IP-based technologies impact positively in that they remove the need for specialised networks for application providers. New service providers are able to enter the market or create a new market by connecting to any available IP-based network. It



is therefore possible to expand service delivery and competition with appropriate policies and regulations.

The shift to IP-based technologies present a major challenge to the current regulatory structure that still distinguishes between electronic communications network operators based on the kind of platform they own. As an example, some operators are licensed as electronic communications operators, whereas others are licensed as broadcasters. In theory, the electronic communications licensees could offer any type of service and data, but the current legislation requires the holding of a broadcasting licence to offer broadcasting services. The current provisions do not take into account the inherent capabilities of the IP-based network to transmit any kind of data to any device that can receive it.

The exclusion of content services in the definition of electronic communications services needs to be considered, as the concept of content services has not been defined anywhere in current legislation. The other challenges associated with the current definitions are that they are country specific in an environment in which the internet is a global communications network of networks. The definitions imposed on South African services with regard to differentiation of services are inherently not possible in the internet world. Anyone anywhere in the world can potentially provide broadcasting services using the electronic communications networks for reception in South Africa. This raises the question of what to regulate and why there is a need for regulation.

#### **5.4.1.2 Deployment of high capacity and high speed fibre networks and broadband**

The roll-out of fibre optical networks has revolutionised the transmission and use of electronic communications because of the increase in the amount of information that can now be transmitted. Other benefits have included an improvement in the quality of the information that is delivered, the speed of delivery and amount that can be delivered. The routing of packets on IP networks has reduced the cost of transmitting data over long distances, making for tangible reductions in the costs to communicate. The development of high capacity and high speed networks has resulted in the deployment of ICT as an enabler across all industries.

How can such high capacity and high speed networks be made available to all South Africans? Research indicates that there are significant gaps in the availability of high capacity and high speed networks in rural areas. The definition of universal services currently refers only to basic voice services.

The chapter on institutional arrangements and the review of the role of government identifies the need for a national plan to use the modern communication technologies to connect South Africans seamlessly wherever they are. The draft Broadband Policy will outline various targets to be achieved in connecting schools, hospitals and health facilities, government offices, etc. The roll-out of physical infrastructure is one part of the effort to deploy broadband services. As the Draft Policy acknowledges, demand side measures must be undertaken to ensure widespread usage of the deployed infrastructure. These demand-side measures will also entail the provision of on-line e-government services.

The current communications framework does not provide for the definition of e-government services and regulatory provisions that should govern it. Other countries provide for a framework to define e-government and other information society services that are essential for interacting and receiving governmental services. Issues of trust and security will also need to be addressed so as to ensure legal certainty.

Electronic communications network operators agree that what costs the most, and, is a cause of delays in the roll-out of electronic communications networks is the civil works that

involves negotiations with individual municipalities and state agencies for way-leaves and rights of way. It is estimated that civil works account for about 80% of the cost of constructing the networks. In addition, operators have to contend with environmental impact assessment studies and lengthy approval processes involving public participation. The current legislation provides for rapid deployment measures, which are often ignored by various municipalities who demand adherence to their own bylaws. The roll-out of national high speed, high capacity networks require fast-tracked and streamlined network deployment measures that are respected by all municipal authorities. Municipal bylaws must be aligned with the rapid network deployment measures.

#### **5.4.1.3 Wireless technologies**

The deployment of mobile wireless technologies is perhaps the most significant game-changer in the electronic communications sector. Over the past decade the number of people using mobile wireless technologies has surpassed those connected through fixed-line. The wireless technologies have matured to challenge the fixed-line environment in the delivery of voice, data, audio and video. The amounts and speeds of transmitted data are expected to increase through the use of high demand spectrum, making the wireless mobile environment the focal point in the development of the broadband market.

#### **5.4.1.4 Open access regimes**

There are policy and regulatory approaches that can facilitate or hinder the uptake and use of these technologies to ensure reliable, quality and affordable infrastructure and services. Government's attempts to supply infrastructure directly have been expensive and not contributed adequately to achieving universal access objectives. However, public investment in state owned networks over decades has produced a considerable national asset available for broadband deployment.

The private sector in South Africa has also made significant investments in broadband networks. Together these go a long way to meeting South Africa's backbone requirements but significant deficit remains, particularly in the last-mile access networks. The high levels of investment required to build broadband networks, together with the dynamic legal, institutional and human resource requirements to give them effect, have challenged countries around the world. What is clear is that neither the state nor the private sector on their own can provide solutions. Emerging success stories from around the world derive from various public-private initiatives where the relative powers and resources of both public and private sectors are integrated to drive broadband penetration.

There is also evidence that indicates that a predictable and technology neutral competitive environment premised on open access principles can deliver better results. The Broadband Policy, advances arguments for open access principles that will enable competition at infrastructure and service levels while reducing infrastructure duplication and restrictive access to networks by competitors.

Such an open access environment will require sustained action to remove the bottlenecks, barriers and challenges that have been identified. Policy certainty and regulatory clarity more conducive to investment, will enhance competition which, if effectively regulated, will enable citizens to access affordable seamless electronic communications services. In mature resourced markets, especially where there is already platform competition, infrastructure competition is the most effective way of promoting network extension and consumer uptake. However, in more resource constrained environments investment in the duplication of infrastructure usually occurs in metropolitan centres only at the expense of wider national coverage. Redirecting investments away from duplicate urban infrastructure to unserved areas through incentives and subsidies, together with open access wholesale regulation to

enable service based competition, appears to be a way of enabling affordable access to broadband for all.

The policy acknowledges that even in such competitive infrastructure markets, but particularly in markets where multiple infrastructure operators are not economically viable, wholesale access to dominant operators' infrastructure is essential to creating a fair competitive environment for new entrants and service providers. Regulation is always difficult because of the resource and information asymmetries that exist between the regulator and operators but all of these enabling measures will require a capacitated and involved regulator, capable of timely interventions and applications of legal remedies.

The broadband policy as a result does not envisage a single big build out, but rather that broadband will be delivered through a seamless network of public and private networks. In the implementation of the national broadband plan, the policy requires that the viability of a model for the development of open access fixed and wireless network through the harnessing of public and private sector contributions be explored. The policy further emphasises the need for strong demand stimulation measures from school readiness programmes to local content development to optimise the potential of broadband to contribute to national social and economic development.

## **5.5 The Legal Provisions Related to the Quality of Services**

Chapter 12, Sections 69-71 of the Electronic Communication Act 36 of 2005 makes provisions for handling consumer issues, thereby improving the quality of service. Section 69 is about the code of conduct, end-user, and subscriber service charter. Section 70 stipulates that ICASA must prescribe regulations setting out a code for people with disabilities that will be applicable to all categories of licences. Section 71 makes provisions for the establishment of the consumer advisory panels that will advise ICASA on matters relating to consumer issues in South Africa.

### **5.5.1 The Consumer Protection Act**

The Act aims to protect and promote consumer activism, by making provisions for the accreditation of consumer groups tasked with lodging complaints on behalf of consumers, as well as making available support for activities, such as consumer advice, education, publications, research and alternative dispute resolution through mediation or conciliation.

### **5.5.2 Customer Satisfaction Measurement (CSM)**

Communications entities in most countries, with South Africa as no exception, enhance their market power by measuring their standing against competition. This standing is measured by instruments such as Customer Satisfaction Measurement (CSM) or Customer Satisfaction Index (CSI)

The CSI model is a structural model based on the assumptions that customer satisfaction is caused by some factors such as perceived quality (PQ), perceived value (PV), expectations of customers, and image of a company. These factors are the antecedents of overall customer satisfaction, and the CSM also estimates the results when a customer is satisfied or not, based on reports of complaints or loyalty by customers.

## 5.6 Reform Trends

### 5.6.1 Intermodal and Intramodal Facilities based Competition

Facility based competition can be inter-modal or intra-modal. Inter-modal competition is competition between different transmissions media, for example satellite versus fibre. Therefore intermodal facilities based competition provides insights and competitive advantage based on technologies. Before the days of convergence, intermodal facilities gave rise to the concept of technology specific policies.

Intra-modal competition refers to a situation whereby operators adopt the same transmission medium. Therefore their differential competitive advantage is not derived from the transmission medium, but from other enterprise competencies.

A historical review of major technological innovations in the telecommunications sector suggests that, on the one hand, inter-modal facility based competition is the most effective means to foster competition between generic technological alternatives. On the other hand, intra-modal facility-based rivalry founded on similar technologies could contribute to rapid diffusion of particular technologies and the spread of knowhow, which could result in a steep learning curve and a significant reduction of maintenance costs.

#### **Policy Questions:**

1. Should policy promote either a facilities-based or service-based competition environment? Alternatively is there a case for a hybrid competition environment in which both these modes exist?
2. What mechanisms are required to ensure effective co-ordination of broadband infrastructure planning and rollout?
3. Notwithstanding current policy interventions to promote availability and access in the under-serviced areas, the local loop remains a great challenge. Should LLU policy be advanced, and if so, what are the principles which should underpin LLU policy?
4. What other policy interventions can reduce the Significant Market Power (SMP) of the oligopolies in the South African communication sector?
5. What considerations should inform the new policy and regulatory regime concerning the spectrum management taking into account the anticipated revision of the frequency spectrum regime? Is there a need for a separate agency to regulate spectrum?