

A man in a dark suit and tie stands behind two microphones. The background is a teal, digital-themed gradient with faint grid patterns.

THE REAL DIGITAL **DIVIDE**

Martin van Staden & Neil Emerick



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DIVIDE

South Africa's
Information and Communication Technologies Policy

Martin van Staden & Neil Emerick

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1 Introduction

On 24 January 2014, the ICT Policy Green Paper was published, setting in motion the government's plans to introduce change in the Information and Communication Technologies (ICT) industry in South Africa. On 3 October 2016, the ICT Policy White Paper – the “final” version of the policy – was released to the public.

The White Paper, however, when released, had two lethal defects, neither connected to its content. The first defect was that the Department of Telecommunications and Postal Services (DTPS), the responsible government department, had not carried out a Socio Economic Impact Assessment (SEIA), as required by Cabinet-approved policy. SEIAs are conducted to indicate to stakeholders and society what the likely outcome of the implementation of new legislation or policy will be. They force the public administration to think about the long term effects of new interventions before implementation.

The second defect was that, in the formulation of the White Paper, the DTPS did not consult with industry roleplayers or the public. They did do so, however, during the formulation of the Green Paper, the Discussion Paper, and the Review Report, which makes this departure from established, constitutionally-required procedure bizarre. The White Paper includes several industry-altering (potentially industry-destroying!) aspects added between the Review Report and the White Paper that the public was given no opportunity for participation.

The content of the White Paper is as questionable as the process used to bring it into being. The Electronic Communications Act (ECA) that governs ICT in South Africa may be an imperfect statute, but it ushered in substantial change from the previous Telecommunications Act, and, for the most part, is in line with international best practice. The ICT White Paper not only adopts bad aspects of the ECA, it exacerbates them, and then also introduces bad, and potentially bad, new policies.

Legislated outcomes are a rejection of market principles that work on private business satisfying the needs of customers. After a relative period of freedom following the enactment of the ECA, South Africa, will now have a rigid, government-decreed planning system. Subsequent to the White Paper's enactment into law (bearing in mind it is already Cabinet policy at the time of writing), we will have the typical result of a government-planned system: poor, inadequate infrastructure that is expensive and ill-suited to serve South Africa's economy.

Telecommunications in South Africa has always been a highly politicised industry and excess government interference is will hurt the economy and society more broadly.

The Internet, in particular, has caused historically unprecedented change during the previous two and a half decades. Whereas previously communication technologies used analogue methods, digitalisation means data can be generated in a private network, beamed across a roof via microwave, re-ordered on an Ethernet backbone and then wander out over a public-switched line to be broadcast via satellite to an overseas receiver – all without corruption at the other end. The message becomes everything – the underlying network technology, irrelevant.

Many countries, South Africa included, have adapted their legal systems to reflect the convergence of different media. The new telecommunications policy, however, will have the effect of perverting incentives and causing unnecessary, and potentially damaging, market distortions. Specifically, the retention of this up and coming legal regime creates

skewed incentives for other economic players, who ignore customer demands and misallocate capital.

Without a flexible, market-oriented legal framework, South Africa runs the risk of under-developing new industries.

This monograph attempts to address these issues especially in relation to the National Integrated Information and Communication Technologies (ICT) Policy White Paper, which was released by the Department of Telecommunications and Postal Services on 28 September 2016. The monograph recognises that, at the time of writing, the policy set out by this White Paper has not yet been enacted into law, and, in putting forward ideas, assumes policy makers have the opportunity to change course. This monograph argues the political goals will be more comprehensively achieved under a policy of complete liberalisation and suggests ways of moving to a more open environment.

2 ICT and the law

The Constitution

The White Paper's introduction mentions that it is premised on the government's "constitutional objective" of improving the quality of life of all citizens and freeing the potential of each person. It references the Preamble to the Constitution.

The Preamble to the Constitution was formulated particularly in the post-Apartheid context of national healing and reconstruction, and was intended to orientate the reader who was gearing up to read the full text of the Constitution. It is like a preface (not an introduction) to a book: It stands on the outside looking in, and making comment. The Preamble is a poetic commentary on the provisions which exist within the text of the Constitution; it is not itself an enforceable or consequential part of the highest law.

The government, by premising the White Paper on this line of the Preamble, makes a legal mistake that permeates the whole policy document. Government 'read in' new law, which it cannot do, into the Constitution. It took a line intended to be a preface to what is textually provided for in the Constitution, and turned it into a provision in and of itself, which ostensibly places an obligation on the government.

But, for the sake of argument, let us consider the actual text of the Constitution to determine whether the White Paper, if it chooses to rely on the Constitution, may have a constitutional foundation.

The first provision of the Bill of Rights, section 7, provides that the State must “respect, protect, promote and fulfil the rights in the Bill of Rights.” This is clear and not debatable: The government cannot create new rights from scratch, especially if they potentially conflict with existing rights in the Constitution. It has the constitutional obligation, instead, to protect and fulfil those rights which appear in the text of the Bill of Rights, which spans section 7 to section 39.

The White Paper also references section 9, which is the equality provision in the Bill of Rights. According to the policy document, section 9 says that there is a “right to ‘full enjoyment’ of all opportunities in South Africa.” This is, however, not the case. Government, once again, has read something into the Constitution which is not actually there.

The real section 9, more particularly section 9(2), appears as follows:

“Equality includes the full and equal enjoyment of all rights and freedoms. To promote the achievement of equality, legislative and other measures designed to protect or advance persons, or categories of persons, disadvantaged by unfair discrimination may be taken.”

As we can see, the White Paper misquoted section 9 completely. The words “all opportunities in South Africa” do not appear anywhere in the section. The section, instead, provides that the government must ensure that there is full and equal enjoyment of all rights and freedoms. The “rights” and “freedoms” it refers to are those which already appear in the Constitution, as the discussion on section 7, above, indicates.

Crucially, therefore, we must note that the Constitution does not contain a right to data, a right to Internet access, a right to access broadcasting, or any similar provision, which is the core notion that underlies the government’s new ICT policy.

The only provisions in the Bill of Rights that come close to such a right, are section 16(1)(b), which provides that everyone has the right to freedom of expression, which includes freedom to receive or impart information or ideas; and section 32, which provides that everyone has the right to any information held by the State, and any information held by another that is required for the exercise or protection of rights contained in the Bill of Rights.

In the case of section 16, the provision is a ‘right to freedom,’ meaning an individual must be unimpeded by the State in their receiving or imparting of information or ideas. It does not presuppose that the State must provide everyone with the ability to receive or impart information or ideas. This stands to reason. Surely we do not require of the State to give us podiums and large audiences to ‘impart’ our ideas to. The same logic, of necessity, dictates that this right does not mean the government must provide, and, more importantly, control communications infrastructure.

In the case of section 32, which is the right to access to information, the provision is limited to two things: Information held by the government, and information held by anyone else, but which is crucial for the protection or enforcement of rights. As section 7 has shown, this would be limited to rights contained in the Bill of Rights, of which a right to data, internet access, or broadcasting infrastructure is not one.

Finally, section 25, the property rights provision, must be considered.

Section 25(1) provides that the government may not deprive anyone of property except by law, and no law may do so arbitrarily. Section 25(2)(a) says that if expropriation (the deprivation of someone’s property by the government) is done in terms of the law, it must be “for a public purpose or in the public interest.” These seemingly vague terms are not open-ended, and are defined in section 25(4), which says that public interest includes South Africa’s commitment to land reform and other reforms aimed at bringing about equitable access to South Africa’s

natural resources. Section 25(5) says the government may take action to “foster conditions which enable citizens to gain access to land on an equitable basis.”

Information and communication technologies and the infrastructure associated therewith, is not covered by these provisions in section 25, except for section 25(1), which secures the owners’ property rights. Radio frequency spectrum, as well as the other transmission or broadcasting infrastructure mentioned in the White Paper, is not a natural resource. It is a product of, and only available through, innovative technological developments, the vast majority of which take place in the private sector.

The notion that the government has the constitutional authority to, in many respects, essentially nationalise or centralise ICT infrastructure, is unfounded. The Constitution lays the proprietary framework for ingenuity, innovation, and unaccosted industrial development to take place.

A final, important aspect of the Constitution which is relevant to the implementation of the White Paper is section 195, titled “Basic values and principles governing public administration.”

This comprehensive section provides, among other things, that the public must be encouraged to participate in policy-making, and that the public must be provided with timely, accessible and accurate information. This applies to all organs of state as well as public enterprises. The Department of Telecommunications and Postal Services, however, did not live up to these principles in its formulation of the White Paper.

Public participation was fostered in every leg of the policy adoption process, including the Green Paper, the Discussion Paper, and the Review Report. But when the White Paper was released, substantial additions and changes had been made without the industry or the public

having been given an opportunity to consult. This, clearly, was a breach of the DTSPS' constitutional duty.

The White Paper is based on a legal falsity. Everything that follows throughout the 166 pages of the government's new ICT policy springs from this misperception, misinterpretation, or misunderstanding of the Constitution, and this should be borne in mind throughout a reading of this monograph.

Electronic Communications Act

The Electronic Communications Act (36 of 2005), which came into force on 16 July 2006, is the primary legislation regulating South Africa's communication industry. It repealed both the Telecommunications Act (103 of 1996) and the Independent Broadcasting Authority Act (153 of 1993). It substantially amended the Broadcasting Act (4 of 1999) by repealing much of its provisions on broadcast licensing.

Licences are now regulated in chapter 3 of the Electronic Communications Act (ECA).

There are three categories of recognised licences: Electronic communications network services, broadcasting services, and electronic communication services. There are also two types of licences – individual and class. Ellipsis Regulatory Solutions describes these types as such:

“In a nutshell individual licences will be appropriate for networks or services of significant importance to socio-economic development while class licences will be required for networks or services which are regarded as not having a significant impact on socio-economic development.”

Individual licences include networks operating provincially or nationally, as well as commercial and public broadcasting, whereas class licences include networks which operate on the local or district level, as well as community broadcasting and “lower power services.”

The White Paper retains the three licence categories and the two licence types created by the Act, but attaches to them certain responsibilities that assist the government in achieving its objectives. It says the current licensing regime “will not fundamentally change” in light of the White Paper’s new policies.

According to the White Paper, individual licences are for networks and services that use scarce resources (“e.g. spectrum and numbers”). Individual licences also carry “conditions including obligations specific to the licensee.” Class licences are given to networks that do not use these scarce resources, and the “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.”

What sets the ECA apart from the repealed Telecommunications Act is that it must promote competition in the ICT industry. Unfortunately, the provisions in the ECA that deal with competition amount to a restriction of competition rather than the promotion thereof, and bestow wide regulatory powers upon industrial regulators.

The White Paper says that the Regulator will issue “competition terms” for licensees after it has consulted with the Competition Commission.

Under the repealed Telecommunications Act, an invitation by the Minister was required for licence applications. In terms of the ECA, ICASA issues the invitation, but only for individual licences. An invitation is not required to register a class licence.

3 Convergence

Overview

Prior to the ECA, laws were primarily built around the technologies used for conveying data that distinguished content such as television, voice or data. The ECA was enacted when digital technologies started to blur the distinctions between different network equipment, i.e. 'convergence.' The long title of the ECA states that it was enacted "To promote convergence in the broadcasting signal distribution and telecommunications sectors and to provide the legal framework for convergence of these sectors."

The White Paper emphasises convergence as a reason to update existing regulations. "Convergence", it states, "underpins the overall government policy approach to Information and Communication Technologies (ICTs)". It goes on to say that ICT is "a means to facilitate inclusive socio-economic transformation", and that ICT includes things such as the Internet, broadcasting, and other traditional means of communication, e.g. post. The lines between these component parts of ICT have become blurred, leading to "disruptions in the traditional sectors" and the requirement for policy to ensure government's vision is realised.

Government must be concerned with the economic well-being of its citizens. For this reason, laws that affect economic progress must be reviewed. If something has changed, then so should the law. We are pleased that, to some extent, this is what the government is doing in the White Paper. The DTSP explicitly recognises that the technological environment is ever-changing, and that government policy must be “in line with industry trends and responsive to technological developments.”

Government does not see convergence only as a positive development. In the White Paper, it emphasises ‘fair competition’ and says convergence requires an integrated regulatory approach, as far as networks and spectrum licensing go, because it has led to excessive cross-platform bundling. Bundling, government reasons, “can lead to higher prices and/or make it difficult for users to switch providers...” It also claims “vertical and horizontal integration” of content and telecommunications providers potentially limits entry to the market.

Why open markets?

Since 1989 and the collapse of socialist economies, there has been little doubt that open markets produce more efficient results than planned economies. Consider the following data. This table shows the economic freedom ranking of certain countries as well as their Internet penetration rates.

*Country ranking out of 159 countries on economic freedom (2014)
Internet penetration (% of population) (2016)*

Iceland	76	100%
Norway	32	98%
Denmark	21	96.3%
Luxembourg	23	95.2%
Netherlands	25	93.7%

Serbia	101	54%
Russia	102	71.3%
South Africa	105	52%
Thailand	106	42.7%
China	113	52.2%
Iran	150	48.9%
Argentina	156	69.2%
Venezuela	159	57.9%

Source: Fraser Institute EFW 2014

For penetration rates:

<http://www.internetlivestats.com/internet-users-by-country/>

Clearly, the freest economies tend to have the highest penetration rates, and the most closed markets tend to have lower penetration rates. South Africa is stuck somewhere in the middle of economic freedom, and has 52% Internet penetration.

There are many socially desirable goods, such as health, longevity and literacy levels, that correlate highly with the overall level of economic freedom in a country. Internet penetration rates, and therefore communications access, appear to be no exception.

Having a generally free market does not necessarily mean that there will be a deep Internet penetration rate. At the end of the day, it is information and communication technologies policy, and, particularly, spectrum policy, that will determine this. The same applies in reverse: A country with a more planned economy but with a free ICT sector, might have a very deep penetration rate. But, certainly, there is a general correlation between having a generally free market and a high rate of Internet penetration.

Why open markets perform best remains the domain of economic study. Empirical evidence shows they produce more products at lower prices

with higher levels of customer service than state-run or state-created monopoly environments. Fear of competition generates insecurity, which is a prime motivator for innovation and customer respect. As Adam Smith said in *The Wealth of Nations*, Book I Chapter X:

“The real and effectual discipline which is exercised over a workman ... is that of his customers. It is the fear of losing their employment which restrains his frauds and corrects his negligence.”

Customer acquisition is expensive, and losing customers can destroy businesses. The dominant feature of market winners is constant attendance to customer needs. When no alternatives exist due to over-regulation, customers are left with no choice but to suffer the disrespect of poor service.

Competition generally

Without boring the reader with too much market theory, it is a well-known fact of economics that increased competition leads to lower prices and better service, as opposed to a monopoly or duopoly, where the incumbents can set any price they wish and provide low-quality service, confident in the knowledge that they are unopposed.

Contrary to popular belief, however, competition does not necessarily mean that there are several firms in the same market. Competition means the market is contestable. In other words, if other firms could (but do not necessarily) enter the market and oppose the incumbent(s), a state of competition exists, because the incumbent(s) know that if they get too expensive or provide too low a quality of service, other entrepreneurs will seize the opportunity and acquire their lost customers.

The 2008 Organisation for Economic Cooperation and Development (OECD) Working Paper on the Information Economy (2008, 19) says:

“Competitive markets for telecommunication and digital content are an important ingredient for broadband take-up, high download speeds at affordable prices and the development of broadband content services. It is important to create contestable markets to permit consumers to purchase products at competitive prices, and so that control over parts of the value chain does not unduly restrict new entrants, or reasonable and non-discriminatory access to distribution channels or technology.”

When the United Kingdom considered what to do about its inefficient monopoly telephone market, it decided upon duopoly as a first choice. The rationale was that under complete liberalisation new entrants would waste resources competing against each other rather than the incumbent. Only a single competitor would build up market share more rapidly and provide more sustained competition. As it turned out, the new entrant focused on the business market and showed little interest in investing in a national network. The argument for restricted access did not work. Only after 1991, following a revision of this policy, did true competition to British Telecom’s (BT’s) infrastructure emerge.

Cable television operators, previously not licensed to provide voice telephony, expanded their networks providing competitive infrastructure to BT in the local loop. Other companies were licensed to offer International Simple Resale (ISR) services over leased circuits connected to the public switched network. This provided rapid competition in international phone calls, with prices dropping at least 50% in real terms since 1991. Currently, there are some 177 licensed public telecommunications operators in the UK, most of whom are providing domestic and international telecommunication services. The idea that competition is best offered to an incumbent by another large operator was therefore refuted. Competition in many service areas by many different operators was the real success factor, driving prices down and service levels up.

Competition in the Electronic Communications Act

As we have already mentioned, the Electronic Communications Act is distinguished from its predecessor, the Telecommunications Act, by its apparent commitment to competition in the ICT industry.

The ECA, however, does have some counterintuitive provisions.

Competition exists by default in the free market, because every market is contestable. Large incumbent companies cannot use political manoeuvring to exclude smaller competitors and smaller competitors do not have any stringent regulations to deal with before they can start doing business.

The ECA, however, gives ICASA wide discretionary powers to regulate competition in the ICT industry. In section 67(4), the ECA provides that ICASA must impose “appropriate and sufficiently pro-competitive” conditions for licences where there is “ineffective competition.” The ECA enjoins ICASA to conduct market reviews on “the effectiveness of competition” and to combat “anti-competitive behaviour.” The conditions ICASA may impose on licences include, among others, “price controls on wholesale and retail rates.” Price controls will be discussed below.

One good provision is section 4A(a) which allows ICASA to consider regulatory and legal barriers to entry, which, in effect, are the only barriers to entry, as hindrances to effective competition.

Competition in the White Paper

The White Paper deals with competition in two ways: It purports to identify a ‘market gap’ where the poor do not have enough money to access ICT, meaning that competition does not drive prices down far enough, and, it seeks to bring ‘fair competition’ into the industry.

In essence, ‘fair competition’ is described as including:

- Ensuring users have access to various affordable services.
- Promoting certainty about competition regulation in the sector.
- Providing remedies that address user needs, as well as “promote innovation, investment, affordability and quality of service.”
- Ensuring users have enough information about the different options open to them, so they can make an informed decision.
- Facilitating competition and putting a stop to “anti-competitive practices” that hinder new market entrants from accessing users.
- Ensuring responsive “evidence-informed” regulation.
- Three interventions to bring about this ‘fair competition’ are mentioned.

Firstly, it proposes market reviews (in consultation with the Competition Commission) to identify “competition problems in South Africa” in line with international best practice. Such problems include “undue conduct” for which “pro-competitive remedies” must be developed. The White Paper, however, makes it explicit that what is considered international best practice should not get in the way of what regulators want to see done. These reviews should be updated “at least every three years” and will be complemented by regular “overviews of performance” in the sectors related to ICT. They will include assessments of quality, affordability, accessibility, and compliance with the conditions imposed by licences. For this to be done, the law will be amended to allow regulators to “collect the necessary information.”

Secondly, the White Paper proposes to strengthen the capacity of ICT regulators to intervene in the sector. In doing this, “meaningful cooperation” between the regulators and competition authorities is to be encouraged.

Thirdly, the White Paper addresses mergers and acquisitions. New policy will be introduced to solve the problem of a lack of coordination

between the various regulators and competition authorities that often delay mergers and acquisitions or cause them to make contradictory decisions.

With regard to industrial monopolies, the White Paper proposes the establishment of a Wireless Open Access Network (WOAN) which “will be a public-private sector-owned and managed consortium” responsible for the allocation of radio frequency spectrum. The WOAN will control the physical ICT infrastructure as well as the spectrum, and allocate it. As of February 2017 it is not yet clear how the WOAN will operate as the White Paper only provides a brief overview.

Prior to the WOAN being implemented, South Africa’s four major vertically integrated telecommunications operators were empowered to make their own spectrum deals. Spectrum was allocated to them, on a contract of lease basis, which they could, in effect, do with as they please.

Crucially, the White Paper states that it is committed to the “voluntary participation by interested stakeholders.” We doubt the veracity of this stated policy, as radio frequency spectrum is not always an optional asset in the ICT industry. Indeed, stakeholders will have no choice, if they wish to be competitive, but to “voluntarily participate” in the WOAN, whether they truly want to or not.

It is unfortunate that the DTSP has chosen to take a monopolistic route in an industry which cannot effectively function in the presence of a monopoly. While the WOAN will not be a retail provider, i.e. it will not engage with customers, it will centralise the control of radio frequency spectrum and have the discretion to revoke spectrum use based on the government’s policy criteria.

Price control

Economists agree that the most crucial component of a market economy is to get the prices right. Any tinkering with the price

mechanism in an attempt to correct perceived market imperfections rarely has the desired result. Unfettered prices are simply more efficient at providing information required by consumers and producers than any government regulator can hope to be.

This dual role for prices has to be understood. In a single number, the price, consumers get information relating to the difficulty in manufacturing and scarcity of a good in relation to other goods. Producers learn of investment opportunities from the demand reflected in higher prices. They will subsequently direct their energies and capital to the markets that prices prioritise.

This subtle mechanism is often lost on government bureaucrats who believe they have the power to alter prices without causing damage. This is especially so when prices have been politicised by the way firms are allowed to enter the market (either freely or by restrictive licensing). Limiting competition on the one hand necessarily means intervening on the other and inevitably government feels the pressure from consumers to control prices politically. The act of price-capping may be welcomed by consumers in the short run, but it destroys the investment-demand signal it carries to producers. If prices are held low in a market with pent-up demand, then producers are not alerted to customer preferences. Consequently, potential producers will not invest, allocating their resources to other markets. There is also the danger that marginal players will leave the industry, creating more scarcity.

In moving from a politicised environment to an open one, where businesses are free to set their own prices and strike their own deals, it is tempting for government to want to dictate outcomes. However, such interference should be resisted.

As we have already seen, the ECA does provide for price controls. Section 67(7)(f) reads as follows:

“(7) Pro-competitive terms and conditions may include but are not limited to –

(f) rate regulation for the provision of specified services, including without limitation price controls on wholesale and retail rates as determined by the Authority, and matters relating to the recovery of costs;”

Two things are important to note here. First, the kind of ‘terms and conditions’ ICASA may impose on licence-seekers is not constrained. Section 67(7) provides explicitly that ICASA is “not limited to” what is actually listed. Second, subsection (f) provides that the price rate regulation for the provision of services includes price controls “without limitation.” Section 67 is part of chapter 10 of the ECA, which was inserted for the particular purpose of “promoting competition within the ICT sector.”

The White Paper builds upon the price control precedent set by the ECA:

“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.”

Before we venture into the technical aspects of price control found in the White Paper, the above quote is an apt starting-point. The DTSPS and whichever advisors assisted them in the creation of the White Paper fall foul of one of the biggest economic fallacies that has been present throughout human history and has led to the same detrimental result: Central planners believe they know what is best for everyone else.

In democratic societies, central planners believe that the mandate they received from the public to govern also translates into a mandate to involve themselves in a process which has always, and can only ever be, a market mechanism. It is not evident, at least not in South Africa, that any such mandate exists, and, even if it did, it is a mandate to do the impossible.

Prices are determined by the whole of society, engaging in voluntary trade. They change on a second-by-second basis across the world, based on hundreds of millions of transactions, that cause a ripple effect throughout the global economy. Prices are not arrived at because some greedy, cigar-smoking executive wants to fatten his wallet; rather, they are formed in response to market circumstances. They can change for a myriad of reasons, and those changes are seldom a result of conscious decision-making, but rather a response to the weather, politics, oversupply, and undersupply. A price is nothing more than a signalling tool, providing information to the next consumer in the production-consumption process. They are not 'cost-based' or even 'based' on anything in particular. They are competitive.

If there is "effective competition" as envisaged by chapter 10 of the ECA, there can clearly be no need for price control. Stated differently, competition *is* price control. The only circumstance under which "market dominance" can be "abused", if there is effective competition, is if "dominant" operators collude. Collusion is a separate matter that is prohibited *ex ante* (*before* the event) and necessarily identified *ex post* (*after* the fact). Regardless of the provisions of the ECA, collusion is appropriately and necessarily regulated under competition law. Contrary to popular belief, "effective competition" does not necessarily mean that there are several firms in the same market. Competition means the market is contestable.

The White Paper clearly signifies this lack of understanding of the price mechanism and markets on the part of government. The belief that the price mechanism can be replaced by individuals who do not (and could never!) have the ability to understand how prices are arrived

at, is extremely dangerous. Market prices are arrived at as a result of billions of people across the world interacting in the economy. Price control is an attempt to replace those billions of people with a panel of government officials who could never keep up with or predict the changing circumstances of the market.

In the ICT industry, there is no way to determine what the 'cost' is. The waves and services which pass through the physical infrastructure cannot be unbundled – it 'costs' different firms different amounts for different reasons at different times. Similarly, depending on the value it creates for individual consumers, it also 'costs' them different amounts for different reasons at different times.

The government's desire to have the poor in rural communities pay, what is, in effect, sub-economic prices for access to ICT services, should be provided and funded as part of the state's welfare programme. Rather than overhauling an industry which is developing exactly at the pace it needs to, and potentially destroying it, the government can provide vouchers to individuals in these communities, or, alternatively, establish cheap government Internet service providers in those areas.

If the 'cost-based' model is implemented across South Africa, it will simply mean these communities will not get the service at all.

In a liberalised telecommunication service market where there are an increasing number of market players and where services are offered competitively, it is not necessary to have price controls, special competition regulations, or provisions aimed at 'consumer protection.' Competition in the marketplace, as Adam Smith alluded to in *The Wealth of Nations*, is the best kind of consumer protection mechanism ever devised (Book I Chapter II):

“It is not from the benevolence of the butcher, the brewer, or the baker, that we expect our dinner, but from their regard to their own interest. We address ourselves, not to their humanity, but to their self-love, and never talk to them of our own necessities but of their advantages.”

Fixing imperfect markets

Officials often pay only lip service to the idea of the market as an efficient allocator of goods and services, arguing for intervention because markets are imperfect or can 'fail' in some way. The concept of 'market failure' appears recurrently throughout the White Paper. No market in the real world will reflect the definition of the perfect market. Such a case requires innumerable suppliers, costless information to consumers and so on. Reality is not so accommodating. Markets, further, by definition cannot fail, because a market is simply a reaction to the wants of consumers, rather than a conscious entity with its own goals and desires. Three arguments suggest government should not try to fix imperfect markets.

First, if the problem is one of inaccurate information, then imperfect government is just as likely to fail as an imperfect market. A government attempting to duplicate market mechanisms has a great deal of work to do. It must gather information from a diverse array of sources including costs of production possibilities, sources for various inputs, different distribution options and changing customer demands. That information has to be fresh and regularly updated, as it is in the market place. The process for arriving at decisions must also be quick. If a state body has to make decisions based on many complex variables, finding the optimal solution may be an infinitely complex problem. That further assumes they have attracted the level of personnel able to make such skilful decisions.

Second, we have to assume that any bureaucracy in charge of managing a market in the 'public interest' is working with benevolent goals in mind. Is there any evidence to suggest that such incorruptible Platonic Guardians find their way into public service and are able to execute their duties without regard for vested interests? Evidence suggests that perfect governments are just as unlikely as perfect markets and that imperfect markets are usually far better performers than imperfect governments. If there is a simple choice between the two, then markets should be chosen on the grounds of personal liberty.

Third, a *laissez faire* market model experiments with numerous ‘bets’ simultaneously. Consequently, many entrepreneurs experimenting with different products to satisfy many tastes will yield better results on average than a single-policy experiment by government. Common sense tells us not to put all our eggs in one basket. Yet governments maintain a single vision of the public interest and say they know how this is comprised. Even with benevolent motives in mind government cannot always get it right, and evidence suggests government often gets it wrong. There is a natural compensating mechanism within markets not prevalent in economies with high levels of state intervention. When government bets the house and gets it wrong the effects are disastrous. Many small bets lessen the impact of being wrong and lose private money, as opposed to public money, in the process.

Picking winners

Government should be wary of attempting to manipulate the imperfect market, since better-than-market outcomes are unlikely. The state should be even more wary of intervening in an attempt to pick winners. The nature of the ICT market is such that there are potentially earth-shattering changes looming around every corner, with radical departures from previous technologies and assumptions being common. Private money is at liberty to take these risks, with the reward of profit favouring those who guess correctly. Governments, using taxpayers’ money, cannot afford to take this risk. The nature of government requires that it deliberate (publicly) over policy issues and, once decisions have been made, allow time to render the full effects. In an industry, such as telecommunications, which has significant technological discoveries being made in very short periods of time, it is difficult for government to develop industrial policy favouring certain technologies over others. Worse, presuming it could pick winners accurately, we cannot be sure the winning technologies would not be superseded quickly. The nation would then be left nursing fledgling companies with protectionist measures for many years to come.

4 Liberalisation

The legal problem

The following problems exist in South Africa's ICT industry:

- Providers with individual licences of a national telecommunication service cannot come into being unless invited by ICASA. Current law pre-supposes that only government, and not entrepreneurs, is endowed with the wisdom as to whether any operator of a type existing or not existing is needed and can be accommodated in the marketplace.
- Because of the requirement to be licensed, it is usually not possible for an innovative and enterprising prospective service provider, national, regional or local, to start up an operation in a way that gives it a market advantage, such as being first to market.
- An operator of a telecommunication network using radio-based equipment does not have the freedom to obtain radio frequency from another operator on a commercially negotiated basis. It is also not possible for an operator to gain from doing away with some of its spectrum, after using spectrum more efficiently. There is usually little incentive for giving up spectrum in view of the disadvantages. Giving up spectrum in a regime where spectrum is licensed, rather than traded, may result in the operator not being able to get

spectrum again, when needed. Furthermore, it is not possible for an operator who would like to wind up its operation to recoup its investments in spectrum, in terms of the usual upfront licence fees paid. The licensee cannot sell its spectrum. The White Paper treats spectrum as a national resource, and not a freely tradable commercial asset.

- The Department of Telecommunications and Postal Services did not follow the correct public consultation process when it adopted the White Paper.

Unfortunately, these aspects of existent ICT law and policy are not drafting errors or anomalies. The government consciously believes that these policies are in the public interest; instead, the policies politicise the industry.

Political control over an industry

The Constitution states the following in section 22:

“Every citizen has the right to choose their trade, occupation or profession freely. The practice of a trade, occupation or profession may be regulated by law.”

Presumably, this means anybody should be able to enter the business of telecommunications should they want to. But the clause goes on to say the state is granted the right to create laws regulating trades and occupations.

While it makes sense for the government to implement standards in sectors where there might be a significant threat to health and safety, such as building codes in the construction industry and rules against malice in medicine, in the economy at large, restrictive policies are very damaging. A modern economy, dependent on information as a crucial asset, cannot wait for an official to decide that a new business may now be sustainable or that a market is ready for more competition. It presupposes officials are gifted with omniscience, which they are

not. Subsequently, the delays built into such a system cause irreparable harm and lost economic opportunities.

Leon Louw, Executive Director of the FMF, has an interesting anecdote about politicisation from the days before ICT became a fully-fledged economic sector.

Some years ago, during the holiday season, Louw fought his way into a crowded store to buy a Christmas card. When he eventually reached the till, he exclaimed, "What a day..." The response from the exhausted cashier was, "Yes, it's our best day of year!"

Louw then crossed the road to the state-run Post Office to mail the Christmas card. The office was similarly packed with people wanting to post cards and gifts. When he reached the overworked cashier, he again commented "What a day..." This time, the response was, "Yes, it's our worst day of the year."

Louw's anecdote illustrates why industries are better left alone rather than brought within the political dispensation. Companies that are concerned with profit are naturally more efficient, more accountable, and, moreover, more responsive to pressing social needs. When pleasing the customer is not essential to continued business success, incentives are fundamentally altered. It is time for South Africa to review the arguments behind political decisions and decide whether the benefits being offered exceed the costs. Jobs, investment and wealth will remain scarce in South Africa if this is not done quickly.

Our solution to this would be that restrictive policies and laws need to be repealed, and new ones, such as those in the White Paper, should not be considered, especially not without a comprehensive Socio Economic Impact Assessment being done. The ICT market should be opened to competition and market forces should be left to respond to the social needs of South Africa, as they have been, but for government interference. Highly politicised industries inhibit growth because vested interests chase incentives other than those required for economic

efficiency. If government extracts itself from micro-managing the communications business, the distorted incentive systems would be removed and business could focus on providing services to its customers instead of courting political favour.

Laws of general application

A concern for the state when liberalising a market is that government will lose control. Without sector-specific regulations, and a regulator, officials fear business running amok. This is unfounded. Even without a specific industry regulator, businesses can function and operate fairly. Government need only rely on the common law and some general statutes.

Issues such as consumer protection or competition law, although explicitly mentioned in ICT legislation, are just as easily dealt with by the law of delict or by state agencies already in place (such as the Competition Commission). Concerns about the dangers of radio-wave emissions from equipment are defined in statutes such as the Hazardous Substances Act (5 of 1973). There is no need for a regulator to draw up additional rules for firms operating in this sector.

Once competition is established, micro-managing the sector is also unnecessary. A competitive environment would not need such management. Prices would be regulated by competition from rivals, standards would be maintained by customers requesting quality at certain prices, and interconnection arrangements would be made by firms negotiating to their mutual advantage. The OECD report on telecommunications regulatory reform (2002, 63) notes:

“As competition develops, the regulation of the telecommunications market should rely on competition law, and sector specific regulation should be reviewed periodically in order to streamline regulations.”

The government need not worry that in a world of converged communications a wide-ranging regulatory authority is required. In fact, the opposite is true. Once a market is opened to competitive forces, the common law built up over centuries is enough to keep firms in check and consumers protected.

The role of licensing – if any

As we have already mentioned, the Electronic Communications Act approaches licences differently than its predecessor, the Telecommunications Act.

Licences tend to be of two kinds. First, there is the exclusionary licence, which grants a right to do something and by definition denies that right to someone else. Such licensing exists as a way of creating political patronage. Those with the licence are granted a monopoly market and unfair profits. Those without are denied the opportunity to compete.

The second kind of licence does not confer exclusionary benefits on its holder but is used to notify government of the holder's activities; for example, a retail trading licence. These documents are tantamount to registration of a particular business activity, which is then subject to certain terms of trade. While not necessarily imposing any direct obligations on the holder, they do impose other costs; principally, the time that has to be spent on the acquisition of the licence and perhaps fees for the licence itself. Bureaucratic delay can add further costs if licences are not issued promptly.

The previous legislation governing the ICT industry, the Telecommunications Act, licensed according to technological categories, which, in effect, created a very restrictive perimeter wall around the ICT industry, forcing it to compartmentalise itself. The ECA, which replaced it, has changed the licensing quite significantly. There is no longer a distinction between the various types of technologies, but a distinction between the services which the licensee wishes to provide.

The new licences are electronic communications network services (ECNS), electronic communication services (ECS), and broadcasting services (BS). The licences are further categorised into 'individual' and 'class' licences, which were discussed above.

It must be borne in mind that licensing is a form of regulation, and, as mentioned above, there must be a determination on whether or not the cost of regulation outweighs the inevitable costs it will have for the economy.

The White Paper, as mentioned, makes licensing even more regulatory, in that government will now attach certain obligations, presumably, for instance, rolling out broadband access to unprofitable rural areas, to licences when they are given out to service providers.

In defining policy for the ICT sector, it is imperative that exclusionary licences are done away with. They do not serve general economic development but open the door to discretionary political practice. Private energies are diverted to rent-seeking, which leads to the corruption of public officials and sub-optimal service from suppliers shielded from competition. Exclusive licences designed to allocate scarce resources (such as spectrum) are better replaced by a system of private property rights, which delivers all the benefits of licensing without placing power in the hands of bureaucrats. Open and competitive markets are better at determining efficient owners.

Separation/non-duplication of powers

Government is divided into three co-equal branches, each of which has a particular function within a modern democracy. The legislature creates the laws (rules), the executive administers the rules, and the judiciary interprets and enforces the rules.

For example, the Electronic Communications Act was passed by Parliament. The provisions of the Act set out the different types of licences. The executive agency, the Independent Communications

Authority, grants the licences. If there is a dispute about ICASA incorrectly rejecting a licence, it will go to court, which will decide which of the parties, if any, are correct in law.

The ECA vested the bulk of the administration of South Africa's ICT policy in ICASA. ICASA is a statutory body which theoretically operates independently and in terms of its own enabling legislation, the Independent Communications Authority of South Africa Act (13 of 2000).

The White Paper seeks to abolish ICASA, as well as the Universal Service and Access Agency of South Africa and the .za Domain Name Authority, which will have their functions taken over by the so-called Economic Regulator. The Economic Regulator will be part of the Department of Telecommunications and Postal Services. In other words, these statutory bodies will lose their autonomous character and their functions will be centralised within the DTPS.

A new regulator, the so-called Content Regulator, will be established under the Department of Communications (DOC).

The government also proposes to establish an ICT Regulatory Review Tribunal, which will hear appeals from the regulators or its committees.

Concern about the separation of powers here should be evident.

The ICT Tribunal will not be the first instance of the executive usurping judicial power from the courts. The justification used for the creation of other 'executive courts' is used for the creation of this tribunal, with the White Paper claiming that the tribunal's processes will be quicker than those of our backlogged courts. Fortunately, anybody from the Tribunal has the explicit right to appeal to the ordinary courts, but this adds yet another layer of bureaucracy in South Africa's ICT sector.

While the rationalisation of agencies might otherwise provide certainty and lead to a reduction of duplication within government, the fact that these otherwise autonomous agencies will now become part of the DTPS is also a cause for concern. It is not reassuring, also, that the

proposed abolition of ICASA comes so soon after the ICASA vs the Minister of Telecommunications and Postal Services battle in court over the issuing of radio frequency spectrum licensing. This indicates that ICASA does operate with a measure of independence and is not merely a rubber-stamp agency for ministerial whim. If ICASA's functions are absorbed into the DTPS, this independence will disappear.

There needs to be a clear distinction, firstly, between the three branches of government. Parliament, exclusively, should create law. The executive should administer it. And the judiciary should enforce and interpret it. And, secondly, between the makers of policy (the politicians) and the implementers of policy (the bureaucrats). Politicians are not experts or specialists in the field. They head government departments to ensure the will of the people of South Africa is done. Bureaucrats, on the other hand, know the technology, the processes, and the nuances of administering the policy. This is why ICASA should have been left to auction off the radio frequency spectrum without the Minister's direct involvement, it knew what needed to happen in the industry for the government's policy to be realised.

5 Radio frequency spectrum

Spectrum as an asset

It needs to be emphasised that spectrum, and its inherent value, is a product of invention and innovation largely by industry. Spectrum, unlike water or air, has not always been around. Before Marconi (more than a century ago), the concept of radio frequency spectrum did not exist, and, consequently, had no value. Arguments that radio frequency spectrum is a natural resource requiring allocation by government, therefore, look specious.

There is no reason at all why spectrum should be regarded as government property. When an innovative individual or group of individuals, even if they are part of the government when doing so, invent something new, or discover something new, it is preposterous to assert that it can somehow follow that government, as an institution, will forever be the owner of that thing. It is, furthermore, far simpler for us in South Africa, as our government did not contribute in any way to the invention or discovery of radio frequency spectrum. Spectrum is a technological asset and should be treated as private property, with trade moving the asset to the owner who values it most. Such a system is infinitely more effective at allocation than government discretionary practice and creates better incentives for its efficient use and development. If owners do not use it efficiently in the minds of other

investors, then those investors will attempt to buy the asset and redeploy its potential.

Spectrum trading

Freely tradable spectrum would lead to a more efficient allocation of the asset than central planning by the government. This is as true for spectrum as it is for steel, water, or clothing. The White Paper admits this, as does the National Development Plan and the ECA.

The White Paper, however, bizarrely limits the trading of spectrum to a draconian extent. High-demand spectrum may not be traded and must be given back to the regulator if not used. And low-demand spectrum can only be traded with permission from the regulator. The White Paper pursues this course simply because the ICT Advisory Panel believes “while licensed entities may realise economic value from trading, the trading of a public resource does not necessarily result in public value.”

This is, of course, a fallacy rooted deep in modern economic discourse.

It is thought that the contribution, or ‘fair share’, companies make to society, is limited to employment and taxes. The rest is profit they make for themselves. It is not readily realised that when companies profit, especially when they make massive profits, they provide something to consumers (the public) that consumers value.

For example, the Coca-Cola Company employs a lot of people and pays a lot of tax to government, but the real contribution this company makes to society is that it puts a smile on billions of faces every day by providing billions of people with a much-desired refreshment. In exchange for this unquantifiable value Coca-Cola is providing to the people of the world, it makes loads of money. And the money Coca-Cola makes can justifiably be seen as the quantification of the value it has created for society.

The ICT Advisory Panel, then, is clearly wrong when it asserts that public value does not necessarily result from free trade in radio

frequency spectrum. The companies that provide the most value and best service to consumers will make the most money, and will consequently be able to buy more spectrum. If those same companies slip up and their customers are no longer happy, they will lose money, and if they lose a lot of money, they will be forced, by the market, to sell their spectrum to someone else.

The phantom ‘bogeyman’ company that just hangs on to assets, come hell or high-water, with no regard to its own solvency, does not exist in the real world. The government department that ‘forgets’ about some of its assets or allocates them inefficiently due to political considerations rather than market forces, however, is very much part and parcel of daily experience.

If the government is truly and irrationally concerned about spectrum hoarding, it should simply apply its ‘use it or lose it’ policy more strictly. Curiously, the White Paper says that this policy will now be applied in ICT. In our view, this policy should be all that is necessary (even though we would disagree with its necessity) if the government does have this concern. The problem with the government’s current view is that, even if the spectrum is being used, the regulator can still intervene.

Commons or private property

Two models dominate current thinking on the efficient allocation of the frequency spectrum. The first is a fully-fledged system of private ownership where all rights to the spectrum are vested in the owner. The second is the idea of a ‘commons’ where the resource can be publicly used when interference is not an issue. The ideal solution may be a mixture of the two.

The arguments for either relate to the degree of scarcity present in a market. When a resource is plentiful, then many participants can share it at the same time, using as much of it as they need at zero cost. However, when competition for that resource intensifies, a private

property system creates more efficient allocations. The costs of organising, administering and maintaining a market system are offset by the gains from competitive valuation of the asset in question.

Consider some examples of 'commons' use where interference is unlikely: the buzzer for a garage door, cordless phones or the mounting of a microwave beam across two office parks. Allocation of ownership of this spectrum becomes problematic if individual users have to be registered for such use. In this case, it is probably better for the government to establish the radio frequency equivalent of a 'public park' where users are completely free to use the spectrum without permission, provided they follow the rules of the park.

This concept of a 'frequency commons' would foster development in the use of radio generally, especially as it relates to the development of 'mesh networks'. These are networks of small transceivers set up between houses or buildings. The devices use low power emissions to connect each user via a small hop. This virtual community may then connect to a base station on a public-switched network. Such wireless networks have the potential to liberate communication from cable infrastructure, eliminating registration requirements and lowering transaction costs.

Where competition for the spectrum frequency is fiercer, a system of private property rights becomes more efficient. Potential owners would be invited to bid for spectrum bands with no restriction on their use or subdivision. Commercial frequencies commonly used for cell phones or television broadcasting would be obvious candidates.

A mixture of the two systems argues for private property ownership across the entire radio frequency spectrum, with certain easement rights for devices or areas where the chance of interference is limited. The advantage of this system is that as congestion becomes an issue the private property framework is already in place. The owner can then begin to apply charges for use, ensuring maximum efficiency.

Where is spectrum privately owned?

To completely privatise the ownership of spectrum, unfortunately, is not international practice. In ICT terminology, however, it has become common to refer to leasehold of spectrum as “ownership”, albeit this a technically-incorrect designation. There are, however, several examples where countries have moved from a system of government licences to one where spectrum frequencies are traded as assets. In 1989, a new Radiocommunications Act in New Zealand established a market-centred system for allocating available spectrum. The UK also allows licences to move between operators, treating the licence more as a tradable right. Guatemala has gone the furthest in granting private property rights to frequency spectrum. In their 2002 telecommunications statute, they conceded in their opening preamble:

“That, within our legal body, legislation related to telecommunications and radio communications has not allowed an efficient use and allocation of the radio electrical spectrum.”

Their comment in addressing this states:

“That, it is necessary to create a new regulatory framework which contains general application norms, which gives an agile procedure to allow an efficient use of the radio electrical spectrum and which helps to avoid any type of discretionary use and allocation.”

They moved from a framework of licences into a system of tradable, permanent rights with the following simple clause in their telecommunications statute:

“Article 54. Usufruct Title. The use of the regulated frequency bands will be granted by the Superintendency through titles that represent usufruct rights.”

Various policy experiments around the world looking at different ways to move spectrum assets into the private sector in an equitable way,

but what is clear is the opportunity for government to derive a truly 'free lunch.' There are estimates that a 1Mhz frequency over the United States of America (US) is now worth as much as \$1 billion. With over 3000 Mhz of prime US spectrum property possible, this puts the total value at \$3 trillion, more valuable than all the gold and silver ever dug out of the earth.

Auctioning of spectrum rights

From the above examples it is evident that owning a spectrum right above a given territory is a valuable asset. The South African government could raise significant money from the sale of certain frequencies, most notably those used in commercial applications such as cell phones, television and radio. The large amount of money raised from such an exercise could be channelled back into the general fiscus for assisting in other prioritised areas, or to the Universal Service Fund (set up in the Telecommunications Act of 1996) to assist with specific ICT policy issues.

The incumbents with their current allocation of frequencies for cell phone or radio broadcasts should argue the case for a simple conversion of their licence to one granting them permanent, tradable rights. Other routes include having all frequencies entered into an auction pot with incumbent licensees retaining the right to hold on to their current frequencies. Should they enter their frequencies into the auction and acceptable bids are made, then current licensees would receive the full bid payment. After this 'big bang' auction, all frequencies would be traded with no restrictions on use or sale.

For the auction system to have any consequential significance, spectrum should only be auctioned only on fixed-term contracts for periods long enough to reward investment. This can be determined by looking around the world at countries, such as Iceland, where the auction-long term lease system has been implemented, and how the industry reacted. The period of the lease should allow for the holder of

the lease, the so-called 'owner,' to make substantial investments in spectrum, for instance, by building towers and thus developing spectrum capacity. This is estimated to be a period of between 15 to 25 years, but could be longer. The period must be long enough to encourage investment and reward investors.

The rationale for the auction system is simple: The successful buyer is the one who is, evidentially, the most willing to invest and believes they will make a profit. In other words, they believe they will be efficient and are able to finance that belief with funds previously accumulated through other business. It is crucial, however, that even auctioned spectrum must be tradable (in other words, the lease must be tradable) by the successful bidders and any consequent holders. This ensures that the spectrum will always gravitate toward the firms where it will be made the most efficient use of.

A new alternative to empowerment

The land ownership (and acquisition) issue in South Africa has created a great deal of political conflict, some of which remains unresolved today. A more equitable arrangement, with equally large wealth implications, can be attained by attaching property rights to frequency spectrum and distributing them to historically disadvantaged individuals and firms.

Creative thinking on the part of the government could uncover other ways of transferring this wealth directly to the people. For example, the frequency spectrum over a given community could be housed in a special purpose company, with shares given away to qualifying locals (based on residence or income levels). This company would then be listed on the stock market creating real wealth for the owners. People could choose to cash in their shares, which should prove politically popular, or retain them for investment purposes.

A spectrum deeds office

A spectrum deeds office would be required, which could be formed out of a transformed ICASA or be a new authority. The deeds office would have the function of planning spectrum for different types of frequency use (for example, by the police or military), and to create opportunities for the sale of frequencies as property.

Subsequently, the main function of the deeds office would be to maintain a title register, checking whether new applications present any conflict in ownership rights. Once satisfied that no serious conflict exists, the title would be registered with all its parameters including the frequency bandwidth, the geographic space and the time that the spectrum can be used (if not a 24 hour right). The deeds office would also have the function of ensuring the country meets its obligations under the terms of the International Telecommunications Union (ITU) Convention.

All information relating to the deeds must be publicly available along with all the parameters associated with the title. This would create the opportunity for spectrum agents, equivalent to estate agents, to act as brokers for spectrum in the marketplace.

Making the move...

In the short-term, re-allocation of inefficiently used frequency spectrum through market mechanisms has the potential to create a flood of spectrum. As spectrum becomes more and more congested, increasing use of property rights, and market-valuation, would ensure frequency bands move to efficient users. Government has a role to play in establishing this market, and can assist in developing the correct bundle of rights such a system would require. These include technical constraints such as time, area, frequency, and power output, but may also include easement arrangements (which implies careful and technical definitions of interference).

During this transition, it is important that current licences be respected, in that the value paid for those licences is not lost. Moving to a system of private property rights in frequency spectrum would be move towards developing a system that ensures all players stand to gain is an area of intense international debate. South Africa has the opportunity to contribute to emerging best practice by drawing on the country's own unique experiences.

6 Universal access

Open markets imply universal access

Public institutions are the slowest to respond to change. Those that exert a heavy hand on their industry are responsible for slowing the delivery of information to the people, and the poorest are hit the hardest. Delays caused by excessive political haggling, regulation, bureaucracy and exclusive licences impose higher prices and lower service levels on communities willing and able to buy reasonably priced communication products.

The cellular phone explosion showed that people can afford communication services provided the prices are right. Several years ago, only four million South Africans had access to a fixed-line phone. Today there are more cell phones in South Africa than there are people, with virtually 100% access among all classes.

Products like cell phones and the development of the Internet provide valuable opportunities for people to increase their productivity, which translates into higher incomes. Consider a rural businessperson who previously had to travel to the nearest town to negotiate deliveries with a supplier. The cell phone has reduced the need for travel and eliminates associated costs which leaves more money in the pocket of the business. Compound this effect over many people and it is easy to

see that cheap technology has the capacity to alleviate poverty. When people have the opportunity of utilising new technologies (machinery, cars, aeroplanes or the Internet) incomes go up. The quicker poor, rural communities receive these benefits, the quicker they can restructure their businesses and personal lives to take advantage. Opening up markets is the way to achieve this.

The divide between the rich and the poor, moreover, does not correlate with ICT coverage. The urban poor have virtually 100% coverage, just like the rich do. The real divide is between urban and rural, and moreover, between rural communities and isolated rural families. Whereas, settled communities in rural areas may be covered, farm-houses, remote shops or schools, and small informal settlements on farms, might not be.

In respect of our coverage, South Africa has a great success story to tell, especially in light of our geography and demography. It would be irresponsible for government to bring about substantial change in an industry that can be proud of coverage statistics that are unrivalled anywhere else in Africa. We have the correct formula to tweak to ensure isolated rural communities are also covered (for instance, satellite coverage might prove cheaper), but we should not throw away the entire formula!

Empirical evidence of liberalisation in the telecommunications industries around the world has shown that when competition is introduced, prices of services fall sharply, the quality of the infrastructure rises, and customer service becomes a priority. Any restriction on access to markets, to assist a company while prescribed obligations are met, results in higher prices elsewhere in the economy as one group of customers subsidises another. While arguing that redistributing from Peter to Paul is socially equitable, cross-subsidising markets makes South Africa, as a whole, the loser. The better solution is an openly competitive market where prices for all users are lower.

Internet access as a human right

International non-governmental organisations and civil society institutions, over the past decade, have had much to say about the notion of ICT as a human right. More particularly, they have focused on access to the Internet as a human right. The ostensible ‘access inequality’ between wealthier and poorer individuals is referred to as the ‘digital divide.’

In some respects, the notion of access to Internet as a human right, is certainly valid.

Every individual must have the right to access the Internet without hindrance from the government, just like every individual must be able to shop for food or clothing without being accosted by counter-intuitive regulations. The question to answer is whether Internet access should automatically be provided to the individual, or whether they should take responsibility to obtain access.

As said in the discussion about the Constitution, the Bill of Rights does not explicitly create, or implicitly recognise, a right to Internet access, to ICT infrastructure, or to data. As far as South African constitutional law goes, there is no such a right.

International treaty law, however, which has also become more prolific over the past decade, might tell a different story.

Section 39(1)(b) of the Constitution provides that when the Bill of Rights is being interpreted by a court, the court must consider international law. This does not mean that the text of the Bill of Rights may be substituted for what an international treaty provides, but that when there is doubt or uncertainty as to what a particular section in the Bill of Rights means, or how it should be applied to a particular situation, the court must ensure that its interpretation of that section complies with international law.

Chapter 14 of the Constitution further regulates what role international law is to play in South Africa.

Section 231(4) – which is part of chapter 14 – provides that international law becomes a part of South African law if Parliament enacts it into our law as legislation, and if it is consistent with the Constitution and existing statutory law. This is reinforced by section 1(c) and section 2 of the Constitution, both of which are part of the ‘Founding Provisions’ of South Africa, which provide that the Constitution is the supreme law of South Africa, and that “any law” inconsistent with it is invalid. This means that even international law which does not comply with the Constitution, will be invalid in South Africa, regardless of whether it is signed by the President and enacted by Parliament.

Section 232 provides that customary international law, principles generally accepted by the international community as law, but which are not necessarily found in treaties, is automatically part of South African law, unless it is inconsistent with the Constitution or legislation passed by Parliament.

Similar to section 39(1)(b) above, section 233 provides that courts “must prefer any reasonable interpretation” of legislation which is consistent with international law, over an interpretation that is inconsistent with international law.

The World Summit on the Information Society adopted a Declaration of Principles in December 2003 after extensive consultation with the United Nations, governments, and stakeholders in the ICT industry. Principle 4 includes the following:

“Communication is a fundamental social process, a basic human need and the foundation of all social organization. It is central to the Information Society. Everyone, everywhere should have the opportunity to participate and no one should be excluded from the benefits the Information Society offers.”

This principle is fully compatible with our Constitution and the notion that the right to Internet access means that people should not be hindered from accessing the Internet, rather than a right to have the Internet provided to them.

Principle 23 reads as follows:

“Policies that create a favourable climate for stability, predictability and fair competition at all levels should be developed and implemented in a manner that not only attracts more private investment for ICT infrastructure development but also enables universal service obligations to be met in areas where traditional market conditions fail to work. In disadvantaged areas, the establishment of ICT public access points in places such as post offices, schools, libraries and archives, can provide effective means for ensuring universal access to the infrastructure and services of the Information Society.”

In areas where the market has failed to deliver because the cost of rolling out ICT infrastructure would be much greater than any benefit a private sector entity could reap from it, the principle asserts that the government should roll out access. While there are doubts as to the compatibility between this principle and the notion of a ‘negative’ right of access to the Internet, this would be a far fairer and just solution than the White Paper’s proposed complete overhaul of South Africa’s ICT industry. If the government’s policy was simply that it would roll out access in rural, underserved areas, our complaints would be few.

Principle 39 is of crucial importance:

“The rule of law, accompanied by a supportive, transparent, pro-competitive, technologically neutral and predictable policy and regulatory framework reflecting national realities, is essential for building a people-centred Information Society. Governments should intervene, as appropriate, to correct market failures, to maintain fair competition, to attract investment, to enhance the

development of the ICT infrastructure and applications, to maximize economic and social benefits, and to serve national priorities.”

This principle endorses a sound notion of the rule of law: Policy must be predictable, transparent, and pro-competition.

The ICT White Paper, unfortunately, reflects none of these values of the rule of law.

In December 2016, the Department of Telecommunications and Postal Services refused to release the Cabinet-mandated Socio Economic Impact Assessment (SEIA) which government departments are required to do before enacting new policy. Members of the opposition in Parliament, far from seeing this as an undue withholding of information, instead believe that the SEIA was simply never done, which is perhaps a worse reality.

The White Paper’s public consultation record, furthermore, seems to be flawed. In the period between the release of the Green Paper and the release of the White Paper, several items were inserted about which many stakeholders in the industry claim they were never consulted. There are rumours that the Parliamentary Portfolio Committee on Telecommunications was also surprised by the new policy as it did not reflect what they had previously seen, and, consequentially, were not pleased with the DTSPS.

Before Internet access as a human right can truly be discussed, it is a crucial prerequisite that the government adhere to the rule of law, for any policy, regardless of how good or bad it is, must be enacted and administered in a transparent, predictable, and rational manner.

Vint Cerf, one of the so-called ‘fathers of the Internet’ controversially said that “Technology is an enabler of rights, not a right itself.” This is important to note, especially in light of the conventions discussed above. Protections for freedom of speech, privacy, and the right to an

opinion or conscience, exist to protect against breach by the government.

During the Arab Spring, the Egyptian government cut Internet access to the people to protect itself from being ousted. Turkey's government has taken similar measures to silence the opposition and the press media.

Other than criminals, people with malicious intentions or companies engaging in some kind of fraud, no private actors have ever sought to cut access to the Internet by users who have validly acquired that right. It has consistently been governments and political actors. It stands to reason, then, that making it an obligation for governments to provide access to the Internet is counter-intuitive. What better way to enable governments to cut Internet access across their countries, than to place it in charge of the central infrastructure itself?

This is not to say our government intends to use the new ICT policy as a way to oppress South Africans, but the future is unpredictable, and, considering our past experience with an authoritarian regime, it would be ignorant to put blind faith in the State to never use its monopoly on our ICT infrastructure for nefarious reasons.

Universal service and social obligations

The Electronic Communications Act provides that ICASA may prescribe universal service obligations, in consultation with the USAASA, on licensees. The White Paper intends to build upon this, saying it seeks to "improve the framework for universal service obligations on licensees to ensure that obligations are clearly defined, robust, proportionate to market share and enforceable."

The ICT policy goes on to say that the Universal Service and Access Fund will be the primary means by which the government will attempt to meet its political goals, but obligations on licensees "may also be used from time to time." The White Paper, however, seeks to implement

a “pay or play” regime, whereby service providers will either pay into the Fund, or “play in terms of rolling out universal service obligations.”

The White Paper provides that new policy will require “that the sector regulator regularly reassess obligations” as well as review compliance with those obligations.

The problem with the ‘obligations’ policy approach is that it does not create the right incentive systems between government, suppliers and the end-users. There are two solutions to this problem: supply-side purchasing of products and services, and customer-side purchasing of the same.

Supply-side purchasing

One approach to the provision of services to low-income customer groups is to buy the services for them. This is not the same as forcing exclusive players to cross-subsidise their markets. Instead, if government wishes to provide services in specific areas, it should simply buy these services in an open, competitive market. Under this arrangement, suppliers are required to compete for the government’s business, ensuring more services can be bought for less money than under a monopoly regime. Service levels will be improved as unhappy customers bring pressure to bear on a supplier. Poor service means no renewal of the government contract.

When implementing this kind of supply-side subsidy, three important principles should be subscribed to. First, government should impose no social obligations on its suppliers after purchase. Rather, it should merely specify the quality of service it requires and pay the supplier. Second, it should issue calls for tender on a least-cost basis. Open market participants are then in a position to out-bid each other for the government contract. Such an approach ensures that government will be receiving the best possible price, which in turn means more services can be provided with the same funds. Third, no protection from new entrants to that market should be provided. If, after awarding a contract,

other suppliers are keen to build infrastructure in a particular area without government support, then it would be wrong to stop them. This approach creates a healthy competitive environment where multiple suppliers are in a position to tender when the terms of the government procurement are up for renewal.

To give an example, since 1994, Chile has successfully used minimum subsidy concessions to expand both electricity and public telephone services to rural communities. Central government leveraged the competition for finance between regional governments, between rural communities wanting their project sponsored by the regional government, and between utility companies to win the concession to serve a particular rural community. Concessions were awarded to the company offering the largest reduction to the maximum allowable subsidy stipulated for each contract.

Customer-side purchasing

The second solution to government subsidy programmes is to place the power of choice directly in the customer's hand with a government voucher. The use of vouchers is becoming widespread in areas such as education and health, giving consumers the purchasing power they need to be able to choose their supplier. Renowned economist and thought-leader Milton Friedman first proposed this solution to subsidy in education many years ago. The idea has caught on and many local American authorities are using their school budgets to empower parents with school vouchers. The system relies on private provision of schooling facilities at which parents choose to spend their government subsidy.

Using vouchers creates the right set of incentives for suppliers, exerting a powerful effect on the prices charged and the quality of service provided. This approach also creates an additional benefit in that suppliers must directly pander to the end-user's needs. With government-purchased supply, the customer to be satisfied is the state

agent involved, not necessarily the user. This can create problems where measurements of success set by government are met, but true customer satisfaction is not sought. Customers must take what government has bought for them, not necessarily what they want. With vouchers, customers wield the ultimate power and when treated poorly by a supplier can switch to alternatives.

A similar option should be considered for universal access subsidies in the telecommunications sector. The possibility exists to empower the customer using redeemable vouchers to purchase specified products. The provision of Internet access for schools and the subsidisation of community pay-phones are examples where access can be achieved by putting the buying-power in the hands of the consumer. In each case, the school or organised community would be issued with government vouchers, which would be redeemable at a supplier offering services to the school or community for a period of time. The amount redeemable on the voucher would be set by the relevant government department and remains a politically agreed figure coming direct from the fiscus.

Voucher systems ensure the correct incentives are in place for all players. Government gets the best bang for its buck by buying goods for its 'customers' at the lowest possible price. Suppliers do not have to punish one set of users in order to subsidise their obligations to another. And customers reap the benefits of better service by having the power to walk away from suppliers in the event of non-performance.

Television and radio as universal services

The South African Broadcasting Corporation (SABC) is essentially a private company, with its own board of directors and, at least, a theoretical concern for its own solvency. Much of its current revenue is derived from private-sector advertising sources. It is proposed the remaining aspects of the television and radio businesses be moved, entirely, into private hands.

The Constitution stipulates the following in section 192:

“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.”

This does not imply a national broadcaster. It merely says the government is obliged to regulate what broadcasting there is, in whatever form this might take in a world of converged technologies.

Certainly, government policy is to ensure a reasonable mix of local and international content, with local products reflecting the nation’s language and cultural heritage. But as suggested above, government is in a position to subsidise this outcome on the other side of the market by buying services it deems relevant and necessary.

Examples could be subsidised projects such as documentaries or local sitcoms. Government could sponsor news slots at several broadcasting companies to ensure bulletins are broadcast in languages other than Zulu, Xhosa, English or Afrikaans. This might seem anathema to politicians used to dictating requirements, but the subsequent effect is a positive one. Such subsidies would have to be bought at commercial rates, which means the time purchased from the commercial television station is valued correctly. This is better for understanding the opportunity cost of having a government-subsidised program, produced in the ‘public interest,’ compared to the competing bid of a private firm advertising its wares. At least in this manner such subsidies are clearly reported in government finances and their true cost to society known. By valuing them correctly the country can then decide whether such services remain in the public interest or whether they would rather accept alternatives.

Investment in the industry

Should government be involved in subsidising (directly or through state loans) actual areas of infrastructure within South Africa? If broadband is the technology of the future should government not play a role in subsidising its delivery? Some suggest the private market cannot afford such large-scale investment and that government is therefore required to kick-start these initiatives. This is nonsense. If the services are demanded, there is no doubt the private sector will supply them. In South Korea, there were government initiatives and public spending (US\$1 billion) on broadband infrastructure, but it was the private sector that contributed nearly fifteen times as much investment capital. Where there is an unrestricted investment return, there will be an investor.

There are three considerations in the debate on government investment in infrastructure. First, there is the question of whether government should respect the principle that any legislation or state involvement should be technologically neutral. This is an important principle and should be upheld wherever possible. As much as broadband or certain wireless technologies may seem attractive now, for government to allocate public funds to their development is an attempt at picking winners. Government should lay no bets on the building of infrastructure but should instead focus on buying services for citizens without adequate incomes. How these services are provided to the communities involved, remains the decision of the supplier, who assumes the risk of using particular technical equipment.

The second argument rejecting aggressive government involvement is that the focus of government should be processes, not outcomes. That government wants to see South Africa with a modern developed information infrastructure is not in question. However, it can achieve that by putting in place the incentive framework within which private players set about solving customer problems. It should not attempt to be both player and referee.

Finally, the consumers who have to use technologies would be in the best position to decide what works and what does not. Initial uptakes by aggressive first-time users should not send premature signals to government officials keen to employ the latest and greatest. Technology fashions and consumer preferences change quickly, so it is not the domain of government, which should deliberate in its decisions, to try to second-guess which infrastructure is best. Government can 'pull' infrastructure through the market by creating demand for universal services, but should not attempt to 'push' it through by directly investing in specific technologies.

7 Net neutrality

The idea of 'Net Neutrality' is a novel addition to global ICT discourse. In essence, Net Neutrality means that all internet traffic is treated the same by internet service providers. In other words, no discrimination or preferential treatment for certain kinds of content or connections should exist. For instance, ISP A should not slow down the connections of users who browse to ISP B's, their competitor, website, and certainly not block such a connection.

In the European Union, a policy was introduced which enforced Net Neutrality across the union. In the United States, the Federal Communications Commission introduced regulations seeking to bring Net Neutrality into the American ICT market.

On the surface, Net Neutrality seems like an all-round good idea, with many smaller ISPs and analysts in the industry commending the government for making it a part of the White Paper. Indeed, the DTSP in the White Paper says its commitment to Net Neutrality is to "promote the Internet as a platform for freedom of expression, access to information, innovation and economic growth." It seeks to ensure users are able to freely access any legal online content or services without being unreasonably interfered with by their ISPs.

Net Neutrality is more nuanced than its superficial appearance.

Imagine a fictional Department of Food and Groceries were to release its Grocery Store Policy White Paper, wherein it would contain a section about 'Shelf Neutrality.' In terms of Shelf Neutrality, the grocery store owner, as the service provider, cannot discriminate among the items being sold within the store. Therefore, the store and Coca-Cola, for example, would not be able to enter into an agreement where Coca-Cola products be placed on shelves closer to the entrance, as this would violate Shelf Neutrality. This kind of intervention by government unduly interferes with the freedom of producers and consumers to enter into voluntary agreements.

The example above also serves the purpose of illustrating that there is no such thing as 'neutrality' in business and commerce. This is not necessarily a bad thing, it is something all companies and even consumers engage in. We all have our own interests, and that is why the freedom to contract is so important. It allows a diverse group of people and firms to arrive at the most optimal agreements which benefits all parties involved. A subscriber to ISP A, therefore, might well agree that he will not use his connection to connect to ISP B's website if he gets to pay less for the broadband. But there is also no 'neutrality' because, unless you enter a grocery store in the middle of a large circular room where all the shelves are located an equal distance from the entrance, it is impossible for all products or content to be treated equally.

Just imagine, for instance, that self-driving cars' (a very real and emerging technology) network connections could not be prioritised over other connections on the same network. There would be many more accidents on the road as the driving service 'cuts out' because of a heavy spike in video streaming traffic from the area around the highway. Or imagine a surgeon conducting an essential operation from a hospital in Johannesburg on someone in a small rural town in the Drakensburg via remote connection. Should his connection to the surgery equipment not be prioritised over other connections from the area?

Prioritisation of connections and content is a necessary part of the Internet industry.

When your YouTube video is taking long to load, it is not because your ISP is spiteful or greedy, but because the ICT infrastructure can only allow a certain amount of data through its cables at any one time. This means that ISPs will tend to allow connections for which has been paid more to access more data for watching videos, while ‘throttling’ those who pay less. If ISPs could let everyone access the same amount of data, every minute of every day, the proposal for Net Neutrality might make more sense, but it is simply not possible.

8 Transition

With very rare exceptions, the ICT sector has declared its unequivocal opposition to the White Paper and unequivocal support for an open-market policy in telecommunications, and government should move towards this environment quickly. A digital divide is as applicable to legal regimes, that is, countries, as it is to definitions of the rich and poor. If South Africa is not to lag behind its overseas competitors, it needs to bridge this legal divide as quickly as possible.

This chapter looks at specific provisions of legislation and policy, in the form of the White Paper, that could be repealed or amended, and considers those required from any new legislation. The proposal at the end is presented in two parts; a list of questions that pick up on the salient points from earlier in this monograph, and a set of suggestions. Together, these elements comprise a framework within which the openness of new legislation may be tested.

Section 9(1) of the ECA, which provides that ICASA must first invite industry roleplayers to apply for individual licenses, should be repealed. Firms should be able to apply for licences whenever they wish.

Both sections in the ECA that deal with ‘consumer issues’ (section 12) and ‘competition matters’ (section 10), should be repealed, or, at the very least, replaced by ordinary common law rules against fraud and misrepresentation. Allowing for free competition, without the govern-

ment itself acting as a barrier to entry, would render all ICT markets immediately contestable, which is the best regulator of competition as well as the best protection for consumers imaginable.

Of particular importance are also the suggested policy changes from the ICT Policy White Paper. Here are the relevant portions of it we believe should be removed or replaced:

Privatise the incumbents

The responsibility for the various state-owned enterprises in the ICT world should be moved to the Department of Public Enterprises to reduce conflict of interest issues for the departments under which they currently exist. The same goes for any proposed enterprise in the White Paper. The full privatisation of these public assets should then be swiftly carried out to remove government's ownership interest from the communications and broadcasting sectors completely, restoring its role to that of referee rather than player.

Tests for new legislation

In the event of new legislation being drafted to 'enable' more efficient communications markets, it is important that measures be formulated by which such legislation may be tested. If South African telecommunications and broadcasting markets are to transform from highly regulated sectors to rely on competitive markets and generally applicable laws governing business, then such tests are valuable.

The following questions summarise the ideas from earlier in the monograph, and provide a partial framework within which a new legal environment may be examined.

Moving to an open market environment

- Are all allowed to enter telecommunications and broadcasting sectors?

- Have all restrictions on what content may be delivered over what kind of infrastructure been removed?
- Is pricing unregulated?
- Is regulation of the incumbents minimised?
- Are private companies unfettered from being forced to share their assets and infrastructure?
- Are negotiations and contracts between private firms free from political intervention?

Implementing a legal framework of general application

- Has all legislation inhibiting growth in this sector been repealed?
- Do technology firms rely on laws of general application to regulate business in their sector?
- Is the role of the regulator minimised with a view to its termination when open competition is established?
- Are legal functions devolved to lower tiers of government where possible?
- Have licensing requirements been applied only where specific policy objectives must be met? Are all other acts of doing business allowed by default?
- Are the powers and scope of the Departments of Telecommunications and Postal Services, and Communications limited to those within its competency?
- Do laws focus on giving weight to consumers, not producers?

Finally, here is an alternative approach to frequency management and universal access policy.

Private property framework for frequency spectrum

- Establish a system of private property rights for frequency spectrum.
- Consider the possibility of auctioning off commercially valuable frequency bands.
- Consider the concept of a “commons” where non-interfering radio use may be unlicensed and unregistered.
- Consider the opportunities for empowerment and general wealth creation in granting private ownership of the radio spectrum.

Universal access guidelines

- Use competition to bring prices down to levels that foster universal access.
- Use supply-side or customer-side purchasing to meet specific policy objectives, rather than placing obligations on specific suppliers.
- Devolve universal service provision to the provinces and local government where possible. Avoid one-size-fits-all policies.
- Avoid supply-side protectionism in an attempt to foster local business. Focus on the consumers’ rights.
- Do not implement state investments in specific technologies or suppliers. Government should set about creating policy, not industrial white elephants.

9 Conclusion

South Africa's information and communication technologies journey, so far, is a success story. The country is a notable player in the ICT industry and has the potential to leapfrog the industrial development undertaken by developed nations. In order to do that, we need to remove all the legislation and policy that prohibits businesses from experimenting with products and services in a competitive market. With around 98% broadband coverage for South African households and more than one mobile phone per person in the country, the destitute have been empowered in a way not possible at any other time throughout history. We stand to roll back this success story, however, if we submit ourselves to the proposals of the ICT Policy White Paper.

While not perfect, the current legal regime governing ICT in South Africa, has been more than adequate and has allowed ISPs, very recently, to start rolling out high-speed fibre Internet connections. Under the White Paper's proposed regime, ICT firms will not be able to innovate because they will be dependent upon government and its policy goals.

Policy-makers need to understand how the information economy works and set their priorities accordingly. The days of heavy-handed legislation and regulation are over. They are no longer acceptable in a globally connected world. South Africa can choose to opt out of this exciting process, but then it foregoes all the benefits of belonging to the global market.

Central planning has been rejected by human experience, with over 200 million people having died in the last century because bureaucrats and politicians believed they knew better than the market. While nobody likely will die as a result of the ICT policy, it does have the potential to further retard South Africa's economic growth by making it a less appealing destination for investment. An open environment, on the other hand, will encourage entrepreneurs to set about building infrastructure critical to South Africa's development.

Relaxation of control is going to be difficult for a government accustomed to heavy political intervention. However, the state should have confidence in the talents of free people to generate large amounts of new wealth for which government-run industries rarely show much ability. This country's road to prosperity will be determined by economic growth, and to achieve that growth, South Africa will require an open communications market.

The logo for FMF Books, consisting of the letters 'FMF' in a bold, white, sans-serif font.

BOOKS



South Africa has had a tumultuous history since apartheid central planning ended in 1994. Unemployment has skyrocketed and economic growth has recently come to a virtual standstill. However, one of South Africa's few success stories has been its Information and Communication Technologies (ICT) industry, which is widely regarded as being of first world quality, with 98% mobile coverage and the recent speedy rollout of fibre. The South African government, however, with its new telecommunications policy, stands to reverse this progress, by seeking to re-introduce a monopoly into the sector and placing burdensome obligations on an industry which has only now begun to see a healthy proliferation of small and emerging service providers.

In this monograph the authors tell of the success of the ICT industry and how government regulations should not act as a barrier to what has become the most viable vehicle for socio-economic transformation in South Africa.

