Good intentions, poor outcomes: Telecommunications reform in South Africa

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Abstract

As the first decade of democratic rule draws to a close in South Africa, this paper reviews the telecommunications reform process in terms of the performance of the sector against the twin national policy objectives of affordable access to communications services and accelerated development to meet the needs of a modern economy. It critiques the implementation of international reform models which have in practice tended to emphasise privatisation at the expense of other reform mechanisms—including competition and, in particular, regulatory measures. It argues that this has impacted negatively on affordable access and has inhibited market innovation.

This paper identifies the root of the problem as the market structure. Designed around the vertically integrated incumbent operator, it induces inherently anti-competitive imperatives that demands a resource-intensive regulatory response. The regulator has often not had the statutory powers, and seldom the capacity, to circumscribe the behaviour of the incumbent so that it does not impact negatively on new entrants. Without effective regulation, the assumed benefits of liberalisation—including more affordable access through improved management of the incumbent and more efficient allocation of resources in the market through competition—do not materialise.

The paper argues that developing country telecommunications markets demand more from a regulator than simply meeting the threshold requirements of transparency and predictability via so-called international “best practice” models. Such a limited approach will not be sufficient to meet the challenges facing most developing countries. The highly imperfect nature of developing country markets, and the enormous income disparities and inequities that exist, require strategic regulation. This is necessary to enable innovative service provision, especially to under-serviced areas, and to facilitate fair competitive
markets that promote the viability of the new entrants needed to build the information infrastructure—the infrastructure necessary for a country’s participation in the global network economy.

Simply removing all market-entry restrictions, however, is likely to place an even more onerous burden on already-struggling regulators and is unlikely to contribute to universal access and other developmental goals. A new policy approach involving the fundamental restructuring of the market is needed to remove the anti-competitive incentives that exist in the vertically integrated market structure that generally accompanies privatisation in developing countries. While a more horizontally structured market will not remove the incumbent advantage entirely, it is likely to reduce the need for constant adjustment of anti-competitive behaviour on the part of the incumbent, freeing up regulatory resources for more strategic regulation towards achieving national developmental objectives.

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1. Background

The past decade has seen dramatic shifts in the telecommunications sector, with the rise of the Internet fundamentally changing the way businesses and individuals communicate, and with wireless mobile services providing connectivity to millions of people previously excluded from having a phone.

In South Africa, the “managed liberalisation”\(^1\) policy for the sector has seen the partial privatisation in 1996 of 30% of the fixed-line operator, Telkom, with the stake sold to a strategic equity partner, and then the subsequent floating of another 28% of the company on the stock exchange in March 2003. The granting of a third mobile licence in 2001 brought further competition to the duopoly mobile market. Competition for the fixed-line incumbent Telkom was due in 2003 but by late 2004 the Second Network Operator (SNO) licence granted by the Minister of Communications was still not operational following ownership and control disputes and the failure to attract a significant equity partner.\(^2\)

The Value-Added Network Services (VANS) market, which in South Africa includes the Internet Service Providers (ISPs), has been liberalised since 1996, but its activities have until now been stunted by restrictions that require VANS operators to acquire facilities and bandwidth from Telkom.

Telkom’s monopoly on access to the international data gateway was finally broken in 2002, with the granting of multimedia and international “carrier-of-carrier” licences to Sentech, the parastatal broadcast signal provider. This license permits Sentech to carry third-party traffic internationally and together with its multimedia licence offer non-voice service directly to customers. However, licensing and regulatory confusion emerging from the legislation invoking the licence have meant that potential services have been slow to market.

\(^1\)For the policy and legislative framework for this see the South African White Paper on Telecommunications (RSA, 1996a) and the Telecommunications Act (RSA, 1996b).

\(^2\)The SNO introduced by the 2001 Amendment Act (RSA, 2001), is 30% owned by parastatals Transtel and Esitel, with 26% shared between CommuniTel and Two Consortium, 19% in the hands of black empowerment shareholder Nexus Connection and the unallocated 25% “warehoused” by government.
At the local telephony level, seven of the initial 10 of the 30 districts identified as having teledensities of less than 5% have been granted under-serviced area licences (USALs) which will bring Small Medium and Micro Enterprises (SMMEs) into the market.

In line with global trends, and in compliance with World Trade Organisation (WTO) commitments, the South African telecommunications market has been overseen by a sector regulator since 1997—the South African Telecommunications Regulatory Authority (SATRA) until 2000, and then the Independent Communications Authority of South Africa (ICASA).\(^3\)

In purely economic terms, gains have clearly been made in the South Africa’s telecommunications sector over the last decade which has grown from about R7billion in 1992 to around R43billion in 2001 (Gillwald & Kane, 2003). However, these mask a range of unintended policy outcomes and a series of costly licensing and regulatory disputes. Most significantly the dual national objectives of accelerated sector development and affordable access to communication services have not been met.

The reform strategy followed—partial privatisation of the incumbent monopoly, Telkom, with the introduction of limited competition in the services (VANS) segment of the market only—has not achieved its objectives. The intention behind the extension in Telkom’s, 1997 licence of its monopoly on provision of basic fixed-line telephony services was to provide Telkom with the revenue-generating capacity it needed to invest in doubling the size of the fixed-line network. In reality, the number of fixed-line phone subscribers in South Africa has actually declined in recent years, largely due to Telkom’s local-call tariff hikes on local peak calls of nearly 50% between 1998 and 2002 (Makhaya & Roberts, 2003). The 2003 price increase was 9.5% overall and 12.5% for residential services. At the same time profits increased to 158% and earnings per share of 171% in the financial year ending 2002–2003 (Melody, 2003).

While these local charge increases can be explained to some degree by tariff rebalancing, the price increases do not reflect the global trend towards reducing costs in telecommunications. In addition, these tariff increases have continued well beyond the specified period of tariff rebalancing anticipated to allow internal subsidies on local calls from international calls to end and prices to become more cost-based in preparation for competition.

Soaring local-call charges have also impacted negatively on Internet take up and usage with high prices resulting in a lower market saturation level than would otherwise have been the case in South Africa.\(^4\) Further barriers to communications access have been created by the high prices that ISPs and other value-added service operators are required to pay to Telkom to use Telkom’s network, and Telkom’s delays in providing facilities and interconnection to these VANS providers. Telkom has also denied VANS operators access to the necessary international data bandwidth needed by them to service their customers and compete effectively with Telkom’s value-added data-service offerings. Anti-competitive practices by Telkom have had a chilling

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\(^3\)ICASA resulted from a merger of the Independent Broadcasting Authority (IBA) and the SATRA.

\(^4\)While South Africa’s Internet penetration has followed the standard path of technological adoption which is weak initially until a critical mass is achieved, followed by subsequent explosion in growth, which then reduces as the market gets saturated, the tapering off coincides precisely with the dramatic increase in tariffs in 2000 and Nielsen NetRatings (2001) attributed the fairly short time spent online relative to countries with similar penetrations to the relatively high Internet access charges even prior to the more dramatic Telkom increases in 2002 and 2003 (RSA, 2000).
effect on this innovative segment of the economy, a sector so critical to South Africa’s participation in the global network economy.\(^5\)

While some of these negative developments in South Africa’s telecommunications sector have been viewed as the inevitable birth pangs of institutional and market reform, the negative impact on the performance of this critical sector should be of serious concern to national strategists and those responsible for taking the country into the global information economy, with the associated national developmental benefits.

In evaluating the performance of the South African telecommunications sector over the past 10 years, and in looking at the policy framework set up for regulation of the sector, it is important to recall the political and economic situation prior to the first democratic elections of 1994. The scale and complexity of the problems that had to be addressed as a consequence of over 40 years of systematic underdevelopment of the majority of the population along racial lines were immense. In 1994, teledensity (the number of telephone connections per 100 people) was below 10, and only 45% of households were connected to an electricity supply. All infrastructures and services were racially skewed to serve predominantly white households. Teledensity in primarily black rural areas of South Africa was at around 1%, in line with other parts of Africa, while white-dominated urban areas had teledensity figures comparable with industrialised economies.

Telecom reform has taken place under conditions of dramatic social transformation in South Africa. While seeking to redress racial inequities, reform has at the same time been aimed at integrating South Africa’s economy more effectively into the global economy. This need to balance economic goals with political and social objectives has inevitably resulted in the adoption of approaches that have not always led to the best outcomes—at least, not in the short- to medium-term—and reflect the consequences of compromises that have characterised South Africa’s peaceful transition to democracy.\(^6\)

In the mid-1990s, South African telecommunications policy was hailed as drawing on international best practice while at the same time seeking to deal with the country’s particular historical legacies. But national objectives have continually evaded the grasp of those responsible for the sector.

The root of the problem is often identified as being the lack of regulatory capacity to implement government policy effectively. This paper seeks to provide an understanding of the shortcomings of South African telecommunications reform since 1996, and in so doing it tries to distinguish between instances of failure by the regulator and instances where the failure or shortcoming results from government or political circumstances beyond the control of the regulator.

The paper also points to the inherent weaknesses in the overall policy framework and particularly the law laid down in 1996, within which all the players—the regulator, the government, Parliament and telecommunications operators—have had to manoeuvre. While a number of exogenous factors, including the recession in the global telecommunications market,

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5In February 2004, the Competition Commission referred its decision which found Telkom’s behaviour towards VANS anti-competitive to the Competition Tribunal for final determination with the proposal that Telkom pay an administrative fine of 10% of its annual turnover, which could amount to more than R3 billion. The matter follows the commission’s investigation into complaints lodged in 2002 against Telkom by the SA VANS Association (SAVA) and others. An earlier complaint on a set of similar matters lodged by SAVA and ISPA with ICASA was taken on review by Telkom following ICASA’s ruling against it. At the time of going to press the courts had not yet ruled on the matter.

6For a broader account of infrastructure policy see Teljeur et al. (2003).
have contributed to the failure of the sector to deliver, this article argues that in retrospect the policy framework was not conducive to implementation. The framework failed to recognise the limitations that South Africa faced as a developing country with no experience of autonomous public interest regulation. Unrealistic expectations were created for the reform process. The structural flaws in the policy were compounded by the paucity of specialised skills in the regulator, the Ministry of Communications and among the elected representatives in the Parliamentary Portfolio Committee on Communications. The policy also created conditions that led to political interference, which further contributed to the lack of stability and predictability within the sector and impacted negatively on the investment climate in the country.

2. Infrastructure reform policy

South Africa’s telecommunications sector has been at the forefront of the country’s infrastructural reform process, and was the first sector to confront some of the inherent tensions within the country’s core policy objectives, which include:

- accelerated sector growth and modernisation;
- the achievement of universal access/service;
- promotion of economic efficiency; and
- black economic empowerment (BEE).

The stated national strategies to achieve these policy objectives, although slow in implementation, have broadly conformed to international economic reform “best practice,” and include:

- restructuring and privatisation of state-owned enterprises (SOEs);
- market reform/liberalisation;
- economic regulation;
- universal access/service funding mechanisms; and
- promotion of foreign direct investment (FDI) (Teljeur, Gillwald, Steyn, & Storer, 2003).

Despite South Africa rejecting World Bank and International Monetary Fund support, the country’s economic reform strategies have generally been aligned with internationally accepted best practice and telecom reform has been no different. In 1998, South Africa formally adopted the WTO GATS Basic Agreement on Telecommunications reference paper on basic telecommunications with the country’s commitments reflecting the reform model as enunciated in the Telecommunications Act which had been enacted in 1996 and become operational during 1997.7

The reform model includes three integrated components—privatisation, competition and independent regulation. Despite concerns about the models and particularly the emphasis on

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privatisation and sequencing of reform, during the mid-1990s this widely accepted “best practice model” was being perpetuated through the activities of networks experts operating across the globe who flourish because of the perceived complexity and uncertainty in the area and the belief that they have a one-size-fits-all solution.

South Africa, like most developing countries, had little local expertise in the area of policy, regulation and specifically privatisation, though this was often not adequately acknowledged. It was highly dependent on the advice of its international financial and policy advisors who proposed the three pronged strategies that underlay the international reform model:

- The incumbent fixed-line operator (Telkom) was partially privatised with the standard extension of the incumbent’s monopoly as was practice in the early days of the reform model in order to induce investment. (In the case of South Africa this was only for 5 years, several other countries were tied into far longer exclusivity periods.)
- In the cellular phone market, a third mobile licence was proposed to compete with the incumbent duopoly in mobile and the VANS market, which includes the ISPs, was opened for competition but with restrictions on their operations (for example they are not permitted to do voice and are required to acquire their facilities from the fixed-line monopoly operator.
- A sector regulator (SATRA in 1997, then ICASA from 2000) was created to implement policy and with the intention in line with the model of developing a transparent and certain regulatory environment for investors and consumers and to contribute to building a stable and well-functioning market.

3. Sector performance

3.1. Fixed-line network

As stated above, the central strategy for achieving greater access and improved service in South Africa’s telecommunications market, in line with dominant reform models, was that of the partial privatisation of the fixed-line incumbent in order to capitalise the extension and modernisation of the network. In South Africa, the Minister of Communications oversaw this privatisation process. The emerging responsibilities for the regulator (SATRA and then ICASA) were to monitor the terms of the incumbent Telkom’s licence, with regard to roll-out and quality of service targets, and to enforce price caps on tariffs. The regulator was also required to prescribe regulations to facilitate cost-based “interconnection” between Telkom facilities and the networks of the cellular providers and VANS operators.

8Makhaya and Roberts (2003) cite the World Bank study by Wallsten (1999) of 30 African and Latin American countries which concluded that privatisation on its own related negatively to main line penetration and draw on Joskow (1998) to highlight the importance of effective regulation to achieving reform objectives through deregulation.


10Thintana Communications, a consortium of SBC (18%) and Telekom Malaysia (12%) bought the intial privatised 30% of Telkom South Africa.
Acknowledging that these measures on their own would not be sufficient to ensure a rapid increase in telecommunications access for the poor, the policy and legislation also established a Universal Service Fund (USF), derived from a levy on operators’ annual turnover. The USF, administered by the Universal Service Agency (USA) (under the Department of Communications), was to be used to subsidise the extension of networks into under-served, uneconomic areas and to increase usage by needy people. While the main purpose of establishing the USA was to have a dedicated entity to focus on achieving universality, an unfortunate side-effect was the removal of the universal access mandate from the core functions of the regulator, though ICASA does have some enforcement functions in this regard.

From the perspective of promoting universality, the poor results of the incumbent Telkom’s monopoly exclusivity period, together with the problems that have plagued the Universal Service Agency, these reform strategies have been unsuccessful.11 While it is true that fixed-line telecommunications growth has slowed in many parts of the world with the substitution of mobile for voice services, few countries have had as dramatic a decline in the number of subscribers on a network as South Africa (RIA!, 2003).

While Telkom has successfully grown the lucrative corporate market during the period of its exclusivity from 1997 to 2003, it may well be that there are fewer residential subscribers on the fixed network in South Africa today than there were in 1996 when the reform process began. Telkom’s 5-year licence in 1997 required it to roll out 1.7 million new fixed-line connections in under-served areas by the middle of 2002. It met the target, but due to the estimated number of lines disconnected since 1997, largely due to non-payment, the net effect is that 75% of the licence’s obligation for network extension has not being fulfilled (Melody, 2002, p. 23).

Some of the blame for this bleak situation has been placed at the regulator’s door, specifically regarding the auditing of Telkom’s roll-out reporting, and while some aspects of this may be valid, there was little the regulator could do in terms of the law, to change the outcome. The decline in the fixed-line network was a result of the failure of the 1997 Telkom licence to require that Telkom not only roll out a specific number of lines, but also that it take measures to ensure that the lines were taken up and retained by subscribers. Others will argue that such an expectation would have been unreasonable given Telkom’s commercial imperatives, and that the responsibility for ensuring affordable Telkom tariffs lay with the regulator.

As subsequent sections of this paper reveal, ICASA did indeed fail to accurately calculate Telkom’s allowable price increases—but ICASA’s failures were also severely compounded by government inaction, creating a situation where Telkom was able to skirt ICASA’s tariff regulations entirely on at least one occasion.

3.2. Retail regulation—Price Cap Model

A core role for regulators in situations where fixed-line telephone customers have no choice of service under a monopoly regime is to control prices to ensure customers can afford access to basic telephony and the network services provided over the basic telephone network. Historically, monopoly phone companies kept local-call rates low through cross-subsidisation with revenues generated through above-cost long-distance rates. But as these monopolies have moved towards

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11See Teljeur et al. (2003) for an institutional analysis of the Universal Service Agency.
competition, they have tended to adopt cost-based tariffs—by raising their local-call tariffs and lowering the long-distance rates. This increase in local-call charges—despite more modest increases in monthly rental fees which appear to remain too high as a fixed cost for consumers—is seen as a key factor, together with mobile substitution, responsible for the 600,000 customers that migrated from Telkom’s network between March 2000 and September 2002 (Telkom, 2000, 2001, 2002a, b).

In an effort to manage this process of tariff rebalancing by Telkom while safeguarding other public interests, ICASA has applied a traditional Price Cap Model, as stipulated by law. Initially, Telkom’s prices were capped via a directive from the Minister of Communications at time of the gazetting of the Telkom licence in 1997.12 This cap allowed for a 20% increase across a basket of services annually for a period of 3 years. With the lapse of this Ministerial determination in 2000, ICASA conducted a review of the Price Cap and prescribed regulations for a new cap. As required by law, these regulations had to be approved by the Minister before gazetting. But the process was delayed in the Ministry, allowing Telkom in 2001 to circumvent the authority of the regulator and file a significant increase for 2002. By the time ICASA’s Price Cap regulations for Telkom were finally approved by the Minister in November 2002, Telkom had already prepared to introduce another price increase for 2003, of 9.5% overall and 12.5% for basic local service. A stand-off between the regulator and Telkom ensued, with the impending March 2003 initial public offering (IPO) of government-held Telkom stock as a backdrop. ICASA eventually entered into an agreement with Telkom, allowing the planned tariff increases for 2003 to go ahead, on condition that the increases for 2004 were minimal.

According to the Price Cap Model, Telkom is allowed to increase its prices to cover the expected effects of inflation on its costs of providing fixed-network services, but the increase must be adjusted downwards to cover anticipated improvements in productivity. In the rate review by ICASA that was delayed by the Ministry, the regulator proposed a Price Cap of consumer price index (CPI) (12.5%)–X (1.5%), meaning an inflation rate of 12.5% with a subtraction of 1.5% for productivity improvements, amounting to a Price Cap of 11%. In an analysis of ICASA’s use of the Price Cap Model in relation to Telkom, Melody (2002, p. 28) argued that a proper application of the Price Cap Model—with a more realistic inflation figure reflecting the telecommunications industry rather than the CPI of 12.5%, and a more accurate productivity improvement factor reflecting Telkom’s actual performance (i.e., more than 1.5% productivity improvement)—would have actually resulted in a local-call tariff reduction for Telkom, not a price increase.

3.3. Mobile cellular telephony

While policy and regulatory attention was focused on the partial privatisation and later IPO of shares in the fixed-line incumbent Telkom, the mobile cellular operators were busy extending both the reach and range of cellular telephony services in South Africa. The policy process of the mid-1990s had erroneously viewed mobile cellular as an elite service for the business market only, and it was never an intended outcome of the policy for mobile to be the main vehicle for extension of

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12 Ministerial Determination on Fees and Charges for Telecommunications Services, Notice 772 of 1997 (Government Gazette no. 17984, 7 May 1997) establishes a 5-year price control period during which prices for a specified basket of services may not be increased in real terms by more than 20% based on the CPI.
universal access to basic voice services. Around the world, however, the performance of mobile
over the past 7 years has been nothing short of extraordinary, with many countries achieving
growth rates in excess of 100%. In Africa, the majority of new voice connections achieved during
the latter half of the 1990s were as a result of the growth in mobile penetration. While South
Africa’s growth rate has been lower than the African average and many other lower middle
income countries, it has nonetheless been impressive given the relatively large initial base—2.35
million subscribers in 1994—from which it started.

With the high rate of “churn” (subscribers moving off the network or being disconnected) from
the Telkom network, it would seem that there is at least some “substitutability” of voice services
between mobile and fixed services. Given the high mobile-call tariffs in comparison to fixed-line
rates, the apparent rise of mobile at the expense of fixed services may initially seem
contradictory—all the more so when one considers that it was the introduction of expensive
premium-rated, pre-paid air-time services that saw mobile growth rates increase exponentially.
Despite the high cost of these services, the convenience and flexibility of pre-paid mobile services
(lack of credit checks, and a pay-as-you-go system) have clearly spurred adoption on a massive
scale. Market research firm BMI TechKnowledge (2002) has estimated that over 90% of cellular
users in both Southern Africa and the rest of the continent are pre-paid. In South Africa,
Vodacom estimates that 83% of its subscriber base is pre-paid, as are 95% of its new connections.
Pre-paid customers avoid the monthly fixed subscription fee (about R55 per month in 2000), and,
once connected, only pay by the minute for the calls they make—though, as already pointed out,
the tariffs are generally much higher for pre-paid than for contract customers (Gillwald & Kane,
2003, p. 22).

To gain a more accurate picture of the changes in teledensity in South Africa from 1997 to 2002,
fixed, mobile, and total teledensity are all presented in Fig. 1. When fixed and mobile growth are
combined, South Africa’s figures showed impressive annual growth during the key reform period,
with 95% of this growth generated by the increase in mobile subscribers.
However, despite the huge impact made by mobile cellular telephony, the number of fixed lines will continue to be an important developmental measure—because fixed-line connections offer more affordable capacity. This is especially true for access to the Internet, because the relatively high cost of GSM and the limitations on capacity mean that it is not currently viable for full Internet connectivity. Without this policy perspective it is possible that in addressing the gap between those who have access to basic voice services and those who do not, another potentially more significant division between those with access to the enhanced services necessary to participate effectively in the economy and society, such as Internet, and those who do not, will emerge.

Thus, it is crucial to understand the reasons for the declining number of fixed-line subscribers and to determine, from a policy and regulatory point of view, what can be done to ameliorate this decline. Clearly, the strategy of promoting the delivery of affordable and universal service through granting an exclusivity period to the fixed-line incumbent in exchange for it doubling the network, together with a dedicated fund (USF) and agency (USA) to subsidise services to the poor, has failed. The decline in Telkom’s fixed-line network has severe implications for the development of widespread affordable access to a full information infrastructure, and this level of access is essential in overcoming the country’s digital divide.

3.4. Value-added network service (VANS) providers

The high cost of Telkom’s basic fixed-line telephony services has been accompanied by the high facility-leasing and interconnection tariffs it charges VANS providers as indicated in Fig. 2 below and this is against far less developed networks with much smaller economies of scope and scale. Whilst raising prices above cost is incentive-compatible for an incumbent required to extend the network and with a monopoly precisely to ensure revenues from such activities, this has impacted negatively on the VANS segment of the sector, a segment that is critical to the development of a fully networked economy. While the VANS market in South Africa is relatively large by continental standards, this segment of the market has not flourished as well as was anticipated under a partially liberalised regime, shrinking from R5.5million in 1999 to R4.9million in 2002 (Gillwald & Kane, 2003, p. 35). Telkom’s tight control of access to international data bandwidth and the relatively high prices VANS providers are charged for access to this bandwidth, despite the intention of the policy and law to include regulation of these wholesale prices. This negative impact has not only been felt by users and consumers. High data communications costs impact on the economy more generally, and are a major consideration in companies’ determination of investment destinations, even for non-telecommunications activities.

As the disputes between Telkom and the VANS providers relate to the classification of VANS business and as Telkom does not include in its annual reporting certain services which would be regarded as VANS services were they offered by other operators, as VANS services, assessing Telkom size and potential dominance in the sector is not straight forward. However, if data-service revenues that Telkom classifies among its monopoly PSTS offering are included, Melody, Kane, and Currie (2003, p. 37) argue that Telkom’s VANS market share constitutes around 60%. Telkom’s VANS market dominance and its ability to undermine the profitability of the other players in this segment—through denying them access to international bandwidth and overcharging for the bandwidth they do provide—have been the source of several of the complaints
that have tied up ICASA, the Competition Commission and the courts. Most of the complaints have related to the terms of provision of facilities by Telkom to VANS operators, and boundary issues related to what constitutes a value-added service as opposed to what is in the exclusive domain of the Public Switched Telecommunications Network (PSTN) controlled by Telkom. VANS and ISPs have been at the forefront of the complaints by the VANS sector.

Nevertheless, the Internet in South Africa has continued to grow, albeit at much slower rates in recent years, largely due to relatively high GDP per capita (Gillwald & Jensen, 2004, p. 2). According to telecommunications market-watcher World Wide Worx (2002), 2.89 million South Africans had access to the Internet at the end of 2001, and this figure was expected to grow to only about 3.1 million by the end of 2002. This growth rate of less than 10% in 2002 marked the lowest growth rate achieved since the public was first given access to the Internet in South Africa in 1994. World Wide Worx (2002) estimated that one out of every 15 South Africans had access to the Internet at the end of 2001, and that it would take until 2006 before this figure reached 1 in 10.

As with other value-added service providers, over 80% of the ISPs’ costs accrue directly to Telkom for facilities and network usage. Likewise, around 80% of Internet customer usage costs go directly to Telkom in the form of telephone line rental and dial-up access call charges (Gillwald & Kane, 2003, p. 49). Thus, the vast majority of revenue generated through Internet service provision in South Africa has been going to Telkom. The effective doubling of the local-call price by Telkom has had a huge impact on the cost of Internet services, and evidence suggests that as long as dial-up costs remain this high, Internet penetration will be stunted as the table below indicates (Fig. 3).
4. Current regulatory approaches (retail and access regulation)

South African telecommunications regulation has involved the use of both classic economic regulation, aimed at moderating the market power of the incumbent, as well as social regulation, aimed at ensuring expanded access and economic empowerment of historically disadvantaged individuals and communities.

Historically, social regulation and economic regulation in South Africa have been addressed as contradictory policy objectives, with the tensions between the two apparently needing to be managed by separate institutions and strategies (e.g., the division of duties between ICASA and the Universal Service Agency). But a central argument in favour of economic regulation in telecommunications, via market restructuring, is that social outcomes, such as achieving affordable access to communications services, can be at least partially met through the new efficiencies created in the market. These efficiencies create more affordable service and allow subsidies to be targeted at a considerably smaller, more needy portion of the population.
The type of economic regulation pursued in South Africa has been determined by the market structure, with its strong emphasis on the incumbent’s continued market dominance in the first phase of reform and the likelihood of the incumbent’s continued market dominance in the second phase of reform. In the first phase of reform in South Africa, as in many other parts of the world, economic regulation was predicated on effective retail and access regulation of the monopoly operator, which was not only dominant in the market for historical reasons but also because of the injection of capital, management skills and technology through the acquisition, via 30% privatisation, of a strategic equity partner.

Retail regulation has consisted of ICASA’s attempts to use a Price Cap formula to try to determine the appropriate tariffs Telkom should charge the general public. Access regulation has been characterised by often unsuccessful attempts to compel Telkom to provide VANS operators and mobile phone operators with the access they need to Telkom’s facilities, bandwidth and international data gateway at reasonable wholesale prices. The problems ICASA has encountered in trying to cap Telkom’s retail local-call tariffs have already been outlined in this paper. The difficulties encountered in the area of access regulation have been largely structural. In order to attract investment and to provide Telkom with additional revenues to roll out services, the Telecommunications Act of 1996 allowed Telkom to be a major player in the competitive VANS sector. This has provided Telkom with an incentive to engage in anti-competitive pricing, quality and access practices. The Telecommunications Act of 1996 further compels the VANS providers and the mobile cellular operators, all of whom compete with Telkom in its downstream activities in various ways, to acquire their facilities from Telkom.

ICASA’s inability, due to the structure of the reform framework, to ensure “cost-based” access to Telkom’s facilities for Telkom’s competitors in data, has had a stultifying effect on innovation among service providers and an inflationary effect on costs borne by businesses and individual users. Delays to the licensing of a SNO and the inability of Sentech to rapidly operationalise its international gateway and multimedia licences have left this negative situation unchecked for another critical year.

For competition to be created in the liberalised segments of a reforming telecommunications market, operators require cost-based access to the network facilities of the incumbent. This necessitates regulation of access to the non-competitive components of the integrated incumbent operator (Intven, 2000, Section 3.2). Telkom managed to evade such regulation, largely through refuge in costly litigation.

4.1. Access regulation

As mentioned above, a key to access regulation is a fair and enforceable “interconnection” regime to ensure the seamless connection of subscribers across networks. But experience has shown that incumbent operators use interconnection as one of their primary weapons against new entrants and competitors. A useful example of this practice in South Africa came about at the time of the licensing, in 1996, of the first data-services competitor to Telkom, under the old Post Office Act. The then Director-General of Communications licensed a switched-data network operation owned by an empowerment consortium called Vula Communications. On licensing, the consortium came under the jurisdiction of the regulator, SATRA, and sought interconnection with Telkom under the requirements of the law. Two years of interconnection negotiations failed...
to yield a deal, and Vula, on the brink of collapse, sold off a stake to a strategic equity partner and re-named itself Wireless Business Solutions. A protracted intervention by the regulator finally resulted in an interconnection decision in Wireless Business Solutions’ favour, but this ruling was immediately taken on review by Telkom and subsequently overturned by the courts on procedural grounds.

This experience by an early new entrant was repeated in the cases of other players joining the competitive segments of the market in later years. This results in a litany of complaints against Telkom’s anti-competitive behaviour being lodged with ICASA, and subsequently with the Competition Commission. In all of the cases ICASA and subsequently the Competition Commission ruled either entirely or substantially in favour of the complainants but each of these has been taken by Telkom on review. In the earlier cases some of ICASA’s decision were overturned on procedural grounds and sent back to the regulator for determination. The most recent decision against Telkom is believed to be more robust than previous ones, but it is still awaiting review. The Competition Commission’s decision to propose to the Tribunal that they declare Telkom’s behaviour in the VANS market as anti-competitive has now overtaken this case and if the Tribunal does concur with the commission it has far greater authority to penalise Telkom for such behaviour than ICASA has.

5. Review of the regulatory approach (retail and access regulation)

It has become apparent internationally that retail and access regulation are onerous on the regulator, and put the regulator in a disadvantageous position in relation to the incumbent. Retail (e.g. Price Cap) and access regulation require the regulator to constantly monitor the behaviour of the incumbent with regard to possible overcharging of the general public and retail business clients, as well as denial of fair access to rival firms. The success of the regulator in this kind of regulatory regime depends to a great extent on its resources, its information-gathering capacities and its instruments of control (OECD, 2001, p. 7). ICASA has clearly not had the resources, capacities and powers needed to carry out retail and access regulation in relation to Telkom.

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13See Telkom SA (Ltd) vs. Maepa and others (8 April 1998), Transvaal Proviscial Division 25840/97 (High Court of South Africa) by way of example.


15The Commission’s investigation revealed that Telkom has abused its dominant position by engaging in a pattern of anti-competitive practices. These include Telkom imposing unreasonable conditions for it to provide telecommunication services to VANS. Telkom refuses to provide these facilities unless VANS providers conclude contracts which subject them to Telkom’s dictates. As VANS cannot operate without these facilities and must obtain them from Telkom, they have no choice but to subject themselves to Telkom’s dictates.” Competition Commission case reviews [http://www.compcom.co.za/resources/newsletter%20-%20%20june%202004/html%20version/8%20Case%20Reviews.html](http://www.compcom.co.za/resources/newsletter%20-%20%20june%202004/html%20version/8%20Case%20Reviews.html).
5.1. Asymmetric information

Enforcing retail and access regulatory measures effectively requires the means through which the regulator can correct the asymmetries in access to cost information between the incumbent and the regulator. One of the regulatory tools used to try to force an incumbent towards transparency around cost is requiring it to prepare Charts of Accounts and Cost Accounting Manuals. However, while this requirement allows for accounting separation between the competitive and non-competitive components of the incumbent’s operations, it does not remove the incentives for the incumbent to restrict competition by rival firms. Thus, even where incumbent cost information is made fully available (and it rarely is), the reliability of the information is often an added problem. The incumbent will always have better information than the regulator on the underlying costs of, and demand for, access.

Detection of violations by the regulator is extremely difficult and requires long-term monitoring of compliance, which is highly resource intensive. Thus, the asymmetry of information access inherent in regulation of a vertically integrated incumbent creates a regulatory dynamic requiring huge resources and high levels of skill and experience on the part of the regulator. This has presented an often-insurmountable hurdle for mature economies with the kinds of regulatory resources and skills that are unlikely ever to be available developing countries:

...effective regulation of an integrated firm increases the demands on the regulator and the regulatory regime, requires a tighter control on the behaviour of the integrated firm and is unlikely to be fully successful at offsetting the incentives of the incumbent to act anti-competitively (OECD, 2001, p. 18).

6. Main causes of poor sector performance

6.1. Co-jurisdiction (government and regulator)

An account of the “managed liberalisation” of telecommunications reform in South Africa would not be complete without an examination of the problems created by the co-jurisdiction between the Ministry of Communications and the regulator on key licensing and regulatory issues. This overlap, creating a structural conflict of interest for the Ministry, has been a major point of tension within the sector. The Ministry has sometimes found itself unable to act in the broader interests of the sector, or of the economy as a whole, because of pressure from within government to protect a key state asset such as Telkom. The Telecommunications Act of 1996 made provision for the Ministry to intervene in legislative and regulatory processes in order to fulfil the short-term objective of making the incumbent attractive for investment. Pursuit of this objective has often run directly counter to the Ministry’s other stated sector objectives—such as competition and service innovation—with dire consequences for the sector as a whole.

The requirement that the Ministry approves ICASA regulations and major licences has created serious regulatory bottlenecks, with critical sector development regulations being delayed in the Ministry for months and even years. Various interests have been able to lobby the Minister around decisions already taken by the regulator in accordance with the public processes required
by law. The result has been uncertainty in the industry and costly, time-consuming court challenges pursued to gain clarity. The licensing of the third cellular operator, Cell-C, provided perhaps the most spectacular case of regulatory confusion engendered by the parallel responsibilities of the Minister and ICASA.

While there have been attempts at robustness in the decisions taken by both SATRA before 2000 and ICASA subsequently, the regulator has been fundamentally undermined on numerous occasions including its critical interconnection regulations, by its lack of structural independence from the Minister.

6.2. Institutional incapacity and design (regulator and parliament)

In interviews conducted with South African telecommunications stakeholders, most acknowledge the prerogative of government, as the democratically elected representative of the people, to determine policy and to select those to whom they wish to delegate powers, such as regulators. However, both the process for appointing ICASA Councillors and the resultant decision-making structures of ICASA are viewed as flawed (Teljeur et al., 2003, Vol. 2, p. 46).

The Parliamentary Portfolio Committee on Communications, established to provide Parliament with specialised input on statutory procedures, is also seen as lacking the expertise to fulfil this vital function in the democratic process. The Portfolio Committee’s members, appointed by parties represented in Parliament, are seen by stakeholders as lacking the familiarity with the industry that is needed to make the necessary decisions with regard to appointment of ICASA councillors and development of telecommunications legislation. Flawed appointments to the Portfolio Committee and the resulting flawed Committee decisions are seen as having impacted negatively on the effectiveness of ICASA.

The industry is also critical of internal decision-making within the regulatory agency. Despite the widespread understanding of the intention of the need to have a full-time ICASA Council representative of the broad interests of the country, the seven-member Council is regarded both inside and outside the regulator as cumbersome. Often unable to reach consensus, the Council delays critical decisions. Internally within the agency, Councillors are sometimes perceived as tampering with the day-to-day activities of management and staff (Teljeur et al., 2003, p. 72).

6.3. The skills shortage in the Ministry and the regulatory agency

The flaws in the institutional design for the sector are compounded by the paucity of policy and regulatory skills within the Ministry and ICASA. Several sector observers have pointed to the lack of capacity within the Department of Communication to develop sound forward-looking policy for the sector. The regulator too lacks the skills base necessary to regulate this dynamic and critical sector effectively. ICASA has crisis-managed this skills vacuum over the years, through engaging a series of consultants—with varying degrees of success. Generally, consultants arrive with pre-ordained solutions that often fail to take into account the specific nature of the market in South Africa or the social needs in a developing country. The consultants are also accused of failing to transfer sufficient skills to the full-time ICASA staff, meaning that even where an appropriate regulation is formulated and gazetted, the expertise often does not exist within ICASA to apply the regulation once it comes into effect (Teljeur et al., 2003, p. 76).
6.4. Funding of the regulator

Another key problem identified by several stakeholders, including the regulator itself, has been ICASA’s lack of financial independence from government. Such independence from the Treasury is needed in order to avoid the political influence perceived to have taken place. With the history of financial mismanagement within regulatory bodies established since 1994 within the sector, the Treasury was understandably reluctant to increase ICASA’s budget or to allow the regulator to raise its own funds through licence fees (and then account directly to Parliament for them). However, since the appointment of an ICASA CEO following the new regulatory body’s establishment in 2000, the planning and execution of institutional finances have been turned around and seen as sufficiently sound to allow for a critical change in ICASA’s funding mechanism (Teljeur et al., 2003, p. 73). A legislative amendment in the form of convergence legislation\textsuperscript{16} is currently in progress that will allow ICASA to fund itself from the proceeds of licence fees. This will greatly increase ICASA’s annual budget, and should go a long way to allaying fears as to the regulator’s independence from government.

6.5. Market design and regulatory framework

As detailed earlier in this paper, the market has been structured in such a way as to reinforce the power of the vertically integrated incumbent. Telkom “competes” downstream against rival firms who are, paradoxically, required by law to get non-competitive facility capacity from the very same incumbent.

Regulating in this environment, as detailed earlier, is inherently plagued by information asymmetries. Such asymmetries tend to be more severe in countries with new, under-resourced and inexperienced regulators, and telecommunications incumbents with highly experienced strategic equity partners.

It has now become necessary to seriously question the wisdom of attempting complex retail and access regulatory regimes that have emerged in developed countries, in developing country contexts. In addition, different licensing and service provision structures need to be developed to reduce the complexity or intensity of the regulatory burden—a topic explored in the concluding sections of this paper.

7. Telecom reform policy

The paper has detailed the difficulties inherent in telecom reform policy and cited some of the unintended consequences of the policy, as enunciated in the Telecommunications Act of 1996. South Africa followed the dominant international model of the early to mid-1990s, through partial privatisation of the incumbent and extension of its monopoly, the introduction of competition in mobile telephony and VANS and establishment of a sector regulator. But experience has now cast doubt on the wisdom of this accepted reform model.

The international reform project has been very unevenly and expediently applied in many developing countries, usually focusing on privatisation at the expense of other reform drivers. In practice in South Africa, as in many other developing countries, the reform agenda prioritised privatisation, which was perceived as the mechanism that would most rapidly redress the imbalances in provision of telecommunications services.

In theory, privatisation was supposed to reform the incumbent, and to make it operate more effectively, so that connectivity would be improved through low-cost access to an expanding network. But the focus on this one reform lever has generally happened at the expense of the other levers needed for the reform machinery to work. The pre-occupation with privatisation in the early 1990s by multilateral agencies who saw it as the main vehicle of foreign market access, and by national governments seeking to optimise state assets, have meant that the introduction of competition is often sidelined as a reform priority.

The efficiencies competition is intended to bring into the market are therefore not introduced, prices remain high for telecommunication users and consumers’ choices remain limited. The most significant outcome of this pre-occupation with privatisation in South Africa is that the number of citizens connected to the fixed-line network today, at the end of the private monopoly period, has barely changed since before the monopoly was privatised in 1997.

While inducing the opening up of markets to foreign trade and investment, multilateral agencies and strategic equity investors and developing countries themselves have placed insufficient emphasis on the need for strong institutional arrangements to deal effectively with the regulation of a private monopoly in a partially competitive market, and to counter the market failure likely to arise in such imperfect markets. While foreign investors expect a transparent, independent and rules-based regime for their entry, once entry has been gained into developing country markets, especially when this has been effected through privatisation of the incumbent with an extended monopoly period, regulators receive little support from new operators in developing the local national capacity to regulate the privatised monopoly effectively, or to encourage fair competition where it is permitted. Even profit-maximising entities required to be in the business for the long-haul might see the longer term value of an effective regulatory environment.

While effective regulation has been a cornerstone of telecommunications reform in many of the developed countries calling for open access to developing country markets, it has not sufficiently accompanied the introduction of liberalisation policies in the developing world, where liberalisation is often expediently implemented by developing country governments to offset debt or to secure tied aid. Privatisation without the regulatory capacity or political will to manage the behaviour of the incumbent as a private monopoly or subsequently in a more competitive environment, can be entirely counter-productive to the achievement of the very goals intended by liberalisation, not least of which is affordable access.17

8. Conclusions and recommendations

The strategies of economic regulation of telecommunications sectors have been instituted all over the world to deal with the imperfect market conditions that tend to exist in the early stages of

17See Gillwald (2003a) for a fuller account of the political economy of privatisation in South Africa.
market liberalisation, especially where there is a dominant incumbent. From a traditional market perspective, regulation has been viewed as a transitional phase until a country's telecommunications market becomes fully competitive and completely deregulated. However, experience from around the world suggests that the greater the activity in a telecommunications market, the greater the demand for it to be regulated, particularly in mature markets where there are often tendencies towards concentration of ownership.

The nature of regulation needs to adapt to changing market conditions and ultimately move towards competition regulation. Competition-based regulation—based on a strategic understanding of the changing needs of the market and consumers, emerging technologies and services and the business of the various market segments—is critical to effective regulation. While market failure can result in severe distortions in the operation of the market, it seldom results in market collapse. Regulatory failure, on the other hand, can cause operators to become unviable and can cause entire market segments to remain undeveloped.

Effective regulation then is the key to a stable, growing market. For the regulator in South Africa to be able to perform this critical role, several legal and structural constraints will need to be lifted. As the next section of this paper outlines, several legal constraints can be corrected within the confines of the existing legislation.

8.1. Dual jurisdiction and regulatory independence

As detailed earlier, the dual jurisdiction over regulatory and licensing matters between the Minister and ICASA has meant that attempts by the regulator to fulfil its mandate through the issuance of regulations critical to the effective functioning of the sector—such as licensing, price cap and interconnection frameworks—have often been delayed and undermined by the Ministry. This negative situation is, fortunately, in the process of being resolved through new convergence legislation that should result in the powers needed to regulate being delegated exclusively to the regulator. Specifically, the requirement in law that regulations prepared by ICASA receive Ministerial approval, and the provisions for the Minister's role in facilitating licensing processes, must be lifted. Removal of these provisions will increase ICASA's effectiveness and independence, and will free the Minister to focus on the important policy issues constantly emerging in this dynamic sector Gillwald (2003b).

The rights of the Minister to intervene in the core regulatory and licensing functions of the regulator were put in place as part of the period of transition, in order to give the Minister room to negotiate initially with the strategic equity partner for Telkom, and then to create conditions conducive to Telkom's IPO and latterly even the partners for the SNO. These processes are now complete, making it apposite to withdraw the Minister from direct involvement in regulatory matters.

8.2. Institutional capacity

If the regulator is to be accorded the rights and responsibilities that will permit it to regulate independently, and the Ministry is to focus its attentions on ensuring an enabling policy environment in which to realise the national objectives of an information society and knowledge-based economy, it is imperative that both institutions have the administrative and technical
capacity to be effective. The lack of human resource capacity within the regulatory body and the Ministry and Department of Communications are probably the greatest challenges to the successful regulation of the sector.

8.3. Structural separation (competition regulation) v. retail and access regulation

The lack of capacity within the regulatory agency raises the question of whether a market structure less conducive to anti-competitive practice, and therefore requiring less rigorous regulation, might not be more suited to a developing country such as South Africa. As already described above, the market design in South Africa—with a national vertically integrated incumbent providing non-competitive network access to its “competitors”—creates incentives for anti-competitive behaviour on the part of the incumbent and requires an extremely resource-intensive retail- and access-based regulatory regime.

A market that is horizontally separated, through unbundling of the vertically integrated incumbent into its various components (network infrastructure, applications, services, and content) would be more likely to reduce the incentives for non-competitive behaviour. Conditions would be created that are conducive to competition and less burdensome regulation and which would enable the development of a retail market on the back of wholesale market for interconnection.

With a tariff fee structure sufficiently above cost and no business unit to protect the downstream segment, an incentive to encourage access can be created. It also assists with information asymmetries through the separation of the component parts and accounts making it easier to set tariffs for non-competitive essential facilities (OECD, 2001, p. 9).

As indicated above, this would still require ICASA to regulate access to the infrastructure. However, the incentive to behave anti-competitively, especially if there was some competition between access and facilities providers, would be reduced and the separation of the different components of the business would make it easier to determine cost-based access charges.

Arguments against unbundling vertically integrated entities include the view that certain efficiencies arising from economies of scale and scope may be lost. There are also concerns, particularly in immature markets, that the loss of potential benefits of integration might reduce the opportunity for investors to receive the kinds of returns-on-investment they are used to, leading to a reluctance to invest. Notwithstanding these arguments, it is likely that, on balance, the negative effects of unbundling will be less severe than the effects of the current structure, which is stunting the growth of the liberalised sectors of the market, placing a heavy burden on the regulator, and resulting in costly and time-consuming legal battles.

In identifying structural separation or vertical separation as a way of overcoming undue discrimination by an integrated infrastructure firm, Bergman et al. (1998, p. 25) point out that while this reduces the likelihood of the infrastructure provider favouring any one downstream firm, it may still charge monopoly access prices. However, with the more transparent cost structure of the different component parts, this problem becomes an easier one to regulate than the favouring of downstream competitive components which is notoriously difficult to prove. The importance of regulating the access price, particularly with a bottleneck facility, is also emphasised by Laffont and Tirole (2002, p. 83) who highlight the impact of utility infrastructure access charges on final prices and the power of large downstream users to manipulate charges.
8.4. Immediate policy changes to reinvigorate the sector

Market restructuring of such a fundamental nature would require a significant policy shift and would certainly be easier for countries which have not yet restructured their incumbents or entered into long-term licensing agreements with foreign investors. However, there are a number of actions within the current policy framework in South Africa that could be activated that would immediately relieve the pressure on ICASA, the courts and the Competition Commission, allowing for the reinvigoration of the sector.

Most of the current regulatory disputes hinge on interpretations of Telkom’s rights and obligations in terms of its exclusivity, particularly with regard to re-sale and self-provisioning of facilities by VANS operators. Such activities by VANS providers were supposed to be allowed from 2000, in terms of the timetable set out in the Telecommunications White Paper. The Telecommunications Act gives the Minister the powers to remove these restrictions on re-sale and self-provision. This step should be taken as soon as possible, and it is unlikely to impact as dramatically on Telkom’s revenues as Telkom suggests. By and large, most service providers would still be keen to focus on their core businesses and acquire facilities from Telkom and other network operators. New facilities providers should drive Telkom’s costs down closer to their actual cost. If Telkom looked to network facilities providers in other jurisdiction, it would see that it could still generate a strong revenue stream from the wholesale provision of facilities to these other operators and service providers not wishing to self-provide.

Another restriction on VANS operators that needs to be lifted is that on the offering of voice services, including voice-over-Internet-Protocol (VOIP). At present, only Telkom is allowed to provide voice services over a fixed network. To allow VANS providers, including ISPs, into the voice services market is simply a matter of eliminating the existing legislative distinction between voice and data traffic—a distinction that is becoming technologically artificial in any event, due to the widespread use of technologies that convert voice signals into digital packets, making voice traffic indistinguishable from data traffic over many types of networks.

Lifting this distinction between voice and data would remove the current constraints on the organic development of the market towards integrated voice and data services, thus adding efficiencies in the market and reducing the burden on ICASA to attempt what is in many respects unfeasible to monitor and therefore to regulate.

Lifting the distinction between data and voice would also be an important move towards the “technological neutrality” required to regulate effectively in a converging environment. Indeed, in such an environment there is no economic or policy reason to differentiate among services on the fixed network and fewer reasons to distinguish between fixed and mobile, where there is already a high level of substitutability—a substitutability that is likely to increase as mobile telephony moves increasingly into data services.

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18 Following the finalisation of this paper on 2 September 2004 the Minister of Communications issued a policy announcement (2 September at www.doc.gov.za) indicating her intention to put in place several of the measures proposed in this section including lifting the restriction requiring the acquisitioning of facilities from anyone other than the incumbent fixed-line operator, Telkom (or the Second Network Operator when it became operative), including the self-provisioning of facilities by mobile operators. Voice can be offered by service providers, including VOIP.
The time for a policy and regulatory approach biased towards maximisation of the value of the vertically integrated incumbent is now long past. The focus of policy now must be to ensure that the market is structured in a manner that minimises regulatory complexity, allowing the regulator to focus on measures to induce investment in network roll-out, encourage services innovation, improve consumers’ choice and service quality, develop market efficiencies, and effectively target subsidies to those who most need them. Policy must enable fair competition that will drive down costs, so that services become more widely affordable. The increased demand will give operators the economic incentives to expand the coverage of their networks and services.

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