

**REGULATING FOR COMPETITION:
THE CASE OF TELKOM, SOUTH AFRICA**

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Abstract

The telecommunications industry has undergone many regulatory changes within the last ten years. The entry of mobile operators posed a major competition challenge to Telkom for the first time. The regulatory institutions were merged into a single authority in July 2000. Telkom's exclusivity expired in May 2002, and the stage has been set for the introduction of a second network operator (SNO). Evidence elsewhere indicates that incumbent firms will adopt strategies to maintain their dominance in the market in the face of pending competition. An effective and proper regulatory regime is imperative in dealing with such eventualities. Such strategies may involve engaging in anticompetitive conduct in a bid to limit competition and increasing end user tariffs to enhance profitability as much as possible before the entry of a rival.

This paper will examine the changing regulatory landscape in the fixed line telecommunications market in South Africa. It will analyze the response of the incumbent to this change as measured by its market conduct and performance. It will also evaluate and provide an indication of the kind of regulatory measures that are crucial during the transition to competition.

1 Introduction

South Africa's telecommunications (telecoms) giant, Telkom, was commercialized in October 1991 under the then Department of Posts and Telecommunications. It remained under state ownership until May 1997 when it was partially privatized through the sell off of a 30% equity stake to the Thintana Communications consortium comprising of Telekom Malaysia Berhad and SBC Communications of the US. However, government remained the majority shareholder with a 70% stake. This stake has since been reduced to 38%. In 1997 the government undertook a policy of managed liberalization of the telecommunications industry.

In 1997 Telkom was issued with an exclusivity license, granting it the privilege of being the country's only public switched telecommunications service provider for the coming five years. However, this privilege came with a number of responsibilities. Telkom was set a number of targets in its license to achieve within the five-year exclusivity period, with the possibility of extending it to six years should the targets be met. Key license targets included the roll out of 2.69 million new access lines, a further 120 000 payphones and the replacement of more than a million non-digital lines as well as achieving quality of service targets that included improving the rate of fault repairs and service activation and eliminating the waiting list. There were heavy financial implications for Telkom of not meeting these targets.

During this period, a number of regulatory measures were undertaken that brought about drastic changes in the telecoms environment. The entry of mobile operators posed a major competition challenge to Telkom for the first time. The regulatory institutions were merged into a single authority in July 2000. Telkom's exclusivity expired in May 2002, and the entry of a second network operator (SNO) has been imminent. Evidence elsewhere indicates that incumbent firms will adopt strategies to maintain their dominance in the market in the face of pending competition. An effective and proper regulatory regime is imperative in dealing with such eventualities. Such strategies may

involve engaging in anticompetitive conduct in a bid to limit competition and increasing tariffs in order to enhance profitability as much as possible before the entry of a rival.

This paper seeks to analyse the telecoms market from a regulatory policy (including competition policy) perspective. It will highlight the challenges faced by regulators during the transition from regulation to competition and propose possible solutions to some of the challenges. It will also evaluate Telkom's conduct and performance over the past few years.

The following section gives an overview of the telecoms regulatory environment. Section 3 discusses the telecoms market structure and the competition issues arising from the policy directive of the Department of Communications as contained in the draft Convergence Bill, 2003 (the Bill) and the Telecommunications Act No. 103 of 1996, as amended (the Act). In section 4, possible solutions to the competition problems identified in section 3 are discussed. Section 5 looks at the regulatory challenges posed by convergence, whilst section 6 discusses Telkom's performance in terms of identified indicators, before drawing a conclusion in section 7.

2 The regulatory regime

Since the early 1990s, Telkom has been aware of impending deregulation of the sector. There is a general belief that competition in any sector is a driver for innovation leading to new and better product offerings, that it provides greater product choice and promotes cost efficiency resulting in low consumer prices. However, in network industries dominated by large incumbents, the nature of competition that can obtain depends to a large extent on the type and effectiveness of regulation during the transition to liberalization and after. Most important of all is ensuring a level playing field among all participants post liberalisation.

A major initiative was undertaken by the South African government in the setting up of a converged regulator as a means of ensuring economic, social and technical regulation. It was seen as important that a converged regulatory structure be in place before other forms of telecoms convergence can occur. In South Africa, the process of regulatory convergence was completed in July 2000 when the then Independent Broadcasting Authority (IBA) in charge of broadcasting regulation was merged with the telecommunications regulator of the time, the South African Telecommunications Agency (SATRA), to form the new regulator, the Independent Communications Authority of South Africa (Icasa), responsible for both broadcasting and telecommunications regulation. Icasa was established in terms of the Independent Communications Authority of South Africa Act of 2000 to regulate the telecom and broadcasting industry. The national Department of Communications is the policy making body whilst the Act grants the Minister of Communications (the Minister) certain powers over the sector. The telecoms sector is also subject to general competition laws governing the wider economy. The Competition Commission of South Africa (the Commission) is responsible for competition regulation. In terms of its mandate Icasa, among other things, grants licenses in the telecom and broadcasting industries and sets the terms and conditions of every license granted¹. Icasa also makes rules and regulations that govern the two

¹ Types of licenses includes frequency license, telecom services licenses and broadcasting licenses.

sectors as well as monitors the activities of licensees to enforce compliance with these rules and regulations.

The advantages of a merged regulatory structure can be summarized as follows:

1. In a converged environment, services that were traditionally separate such as voice, data and broadcasting transmission may be indistinguishable. It would be difficult for two separate regulators to deal with such overlaps.
2. From licencing, regulation enforcement and dispute resolution perspectives, it is much easier for industry to deal with one authority and it is easier for that one authority to coordinate its tasks.
3. A merged entity removes the duplication of services and frees up public resources for other uses.
4. There is one government department responsible for the broadcasting and telecommunications sectors. It is also logical to have a single regulator in the sector.
5. International best practice points to consolidated regulatory structures
6. Merged regulators offer the sector an opportunity to benefit from economies of regulation.

The OECD (2004a) identifies the following different angles from which the need for regulation can be viewed:

- Competition regulation – It is necessary to protect the competitive environment by monitoring and investigating anticompetitive conduct and assessing mergers
- Economic regulation – Tariff regulation should encourage efficiency and cost related pricing. In the absence of regulation, monopolists might charge excessively.
- Access regulation – where essential facilities are concerned, access by competitors must be monitored to ensure non-discriminatory, fair and equal access.
- Technical regulation – this type of regulation is necessary to assure compliance with quality, safety, privacy and environmental standards.

Whereas economic and access regulation depend on the structure of the market, the pace of deregulation and technological advancement, competition and technical regulation will always be a necessary part of economic activity. These functions raise the age-old question of regulatory jurisdiction, that is, who is best suited to deal with which type of regulation? The following are possible approaches that are used in different jurisdictions in managing the relations between regulators and competition authorities:

- a) Competition authorities can be granted all sectoral regulatory functions for a particular sector or sectors.
- b) Competition law enforcement can be separated from sector-specific regulation, so that the competition authorities adjudicate all competition issues while the regulator deals with all other regulatory matters.
- c) The competition authorities can have concurrent jurisdiction with the sector regulator on competition issues.
- d) The sector regulator can retain exclusive jurisdiction over competition issues in its sector.

It is generally accepted that technical regulation cannot reside within a competition agency. Another general observation is that technical and economic regulation are better

combined and dealt with by one agency, preferably a sector regulator (OECD: 2004a). Whilst it is clear from government policy² that competition authorities in South Africa should undertake competition regulation, there is still a lot of new legislation that mandates sector regulators to deal with competition matters.

Although the Competition Act provides for memoranda of agreement to be entered into with regulators authorized to deal with competition matters, the Competition Commission believes that this was meant as a temporary measure until such time that new legislation would come into being or amendments were to be effected to such sector legislation. The concurrent jurisdiction model has its own pitfalls. These include forum shopping, double jeopardy, inter-organizational conflict, fore-bearance³, etc.

The draft Convergence Bill takes a step in the right direction by clearly demarcating specific roles for the regulator and the competition authorities. The Commission believes that competition matters are best dealt with by competition authorities, whereas the sector regulator is best placed to deal with sector specific technical and economic regulation. This doesn't preclude the possibility and desirability of some kind of working arrangement and information disclosure agreement between the agencies. Role separation is the model advocated for in the Bill. Whereas the competition authorities are equipped to investigate and prosecute players for anticompetitive behaviour and to assess merger applications, Icasa should be left to deal with issues such as:

- Licencing for entry
- Regulating tariffs where there is limited or no competition
- Setting guidelines for interconnection agreements and pricing
- Setting guidelines for facilities leasing
- Regulating access to essential facilities
- Resolving disputes between players and between players and their customers
- Determining number portability and allocation issues
- Regulating frequency allocation
- Ensuring a level playing field between state-owned and private operators
- Determining universal service obligations

3 The telecoms market structure and competition issues

The telecommunications market can be divided into various sub-markets including fixed telephony, mobile telephony, value added services, paging, wireless data services, network provision, internet and satellite communications. Telkom, by virtue of its market position, is active in most of these segments and faces competition in some segments from other operators or service providers. The discussion will now focus on some of these market segments and highlight the competition issues therein.

3.1 Fixed line market

² As enshrined in the Department of Public Enterprises policy document (2000): An accelerated agenda towards the restructuring of state owned enterprises: A policy framework.

³ Where a regulator withdraws its jurisdiction on a matter in favour of another regulator, players might see this as an abdication of responsibility.

The belief that fixed line telephony is a natural monopoly, coupled with the view that telecommunications is a basic service to which everyone is entitled, resulted in monopolistic government-owned telecoms companies that have forever been shielded from the vagaries of competition through legislation and regulation. This has been the structure of the telecoms market worldwide, South Africa included. It is for this reason that there is currently only one player in this market even though Telkom's exclusivity period expired in May 2002, thereby technically opening the way for the licensing of a second network operator (SNO). Unfortunately there have been delays on this front. Telkom therefore continues to reap the benefits of being the sole supplier in this market. Although there is provision for assessing the need for a third network operator in the future, that is likely to remain in the backburner for a long time to come. Until the full operation of the SNO, the industry and consumers have to contend with a vertically integrated monopolist.

The fixed line telephone market can be subdivided into local access and long distance markets. The latter can be divided further into national and international segments. Although there are companies with the necessary infrastructure and capabilities⁴ to enter some of these segments and offer meaningful competition to the incumbent, current legislation forbids them from doing so. The contestability of the local access market is affected by a tendency to exhibit natural monopoly features. Duplication of resources at the local level is not economically feasible. There is general consensus that competition at the local level will take time to develop. Thus, new entrants into the fixed telephony market would require interconnection.

3.1.1 Competition issues

A vertically integrated monopolist has an incentive to keep out, or limit, competition as much as possible. The telecoms industry is dominated by bottleneck facilities. For a facility to be a bottleneck, or essential, it must be difficult for third parties to offer a service to consumers without access to the specific facility (Cowie & Marsden: 1998). It must also not be economically feasible to duplicate the facility. Thus, incumbent firms would want to deny access to services that are in competition with theirs. Alternatively, where access is granted it may be on discriminatory and unfair terms.

Regulators around the world have developed a common approach of mandating incumbents to provide third-party access to essential facilities. However, the 'essential facilities doctrine' as it is commonly called, has the potential of being abused or manipulated by new entrants who wish to avoid investing in key infrastructure. This puts regulators in the very difficult position of having to determine how far to go in terms of declaring a particular facility, essential and therefore regulating its access. Essential facilities can also result in a 'chilling effect' on innovation. In other words, firms would be wary to invest in certain projects or cautious to innovate for fear of having their facilities declared essential. A counter argument is that since most incumbents are former (or presently) state-owned enterprises, most of their infrastructure is government funded and therefore should be available to the public, including competitors. It is thus crucial for regulators to make balanced judgments on these issues. It is also necessary for them to ensure a competitive landscape.

⁴ For example Eskom Enterprises, Transtel and Sentech (although the first two now form part of the SNO)

The following are some of the areas in which it is possible for incumbents to ward off competition through anticompetitive actions:

- **Network effects / externalities** – Liebowitz and Margolis (1997) define network effects as a change in the benefit, or surplus, that an agent derives from a good when the number of other agents consuming the same kind of good changes. It is the additional value derived from being able to interact with other users of the product. The utility to subscribers of joining a particular network increases with an increase in the total number of subscribers belonging to the network. Therefore large networks tend to dominate markets, especially those that first entered the market. Rules requiring compulsory interconnection are very important as they ensure that customers joining a particular network have access to customers of other networks, thus reducing the anticompetitive impact of network effects.
- **Interconnection charges** – The need for interconnection can be used as a platform for raising the rivals' costs. Interconnection is necessary when a call originates or terminates at a competitor's network. In such instances an interconnection fee is charged to route and terminate the call. Because in most instances incumbent firms would have more customers than new entrants, high interconnection charges would benefit the incumbent. Interconnection prices can act as a barrier to entry for potential entrants. When it comes to negotiations on such charges, incumbents would also have more bargaining power by virtue of being the network owners. Nonetheless, it would appear that, globally, mobile phones have high interconnection fees relative to fixed line operators. Since there are generally more mobile than fixed line subscribers in South Africa, and other countries, it makes business sense for mobile termination fees to be high, because this will translate into high revenues for mobile operators. The Bill obliges network service licensees to interconnect on fair terms and for the sector regulator, the Independent Communications Authority of South Africa (Icasa) to set guidelines and regulations for interconnection and to resolve disputes that may arise. The common competition concerns arising from interconnection relate to excessive pricing and the denial of access to the incumbent's facilities.
- **Discrimination and predatory pricing** - A network operator with monopoly power in local access may discriminate in favour of its long distance or international telephone service. Alternatively, the incumbent may charge high prices for its monopoly services and low or predatory prices where it faces actual or potential competition.
- **Bundling** - Access to a monopolist's network may be subject to the purchase of a bundle of services that are not needed by a customer who is a competitor. This could be another way of raising the rivals' costs or raising barriers to entry. A requirement to unbundle could therefore help lower barriers to entry and protect new entrants from anti-competitive tying arrangements.
- **Cross subsidization** - Most telecoms companies operate in many different markets and they may charge high prices where there are dominant and use the revenues to subsidise low prices where they face competition. New entrants may then find it difficult to match the incumbent's low prices in areas where it may be easier to enter the market.

- **Quality of service** - Price is not the only element that can be manipulated by incumbent firms. There is also the likelihood of offering a poor quality service by, for instance, delaying interconnection. This is done so as to make the overall service of a competitor look inferior to consumers.

3.1.2 The second network operator

An important question regarding the imminent entry of the second network operator is what impact would it have on the fixed line market? There are two possibilities: a *de facto* duopoly or effective competition. Rather than engage in a price war, as has been the case in the South African airlines market, the new entrant might adopt a strategy of following the market leader and thus avoid head-on competition. The competition authorities would frown upon this kind of strategy; although a major defect in the current competition legislation is that it does not recognize the anticompetitive effects of collective dominance or complex monopolies like other jurisdictions. However, since the SNO already owns key telecoms infrastructure, value added network service (Vans) providers would welcome the opportunity to choose with whom to interconnect or from whom to lease facilities. This might be the trigger for competition. Thus from an infrastructure viewpoint the SNO has the ability to provide some form of competition to Telkom.

The process of licencing the SNO has been dogged with controversy, with two failed bids already. However, the Minister went ahead and appointed two of the second-round bidders that were rejected by Icasa. These have been partnered with an empowerment company and two government owned entities to form the SNO. However, the empowerment partner instituted legal proceedings contesting the constitution of the SNO.

The latest proposed structure of the SNO as announced by the Minister⁵ would be as follows:

- i. A new company, SepCo, will be incorporated which will hold 51% of the equity share capital of the SNO
- ii. Control of SepCo will be held by a new financial investor, which will have a 51% shareholding in SepCo. WIP Investments Nine (Proprietary) Limited trading as CommuniTel and Two Telecom Consortium (Proprietary) Limited will each hold 24.5% of SepCo;
- iii. Transtel and Esitel will together hold 30% of the equity share capital of the SNO;
- iv. Nexus will hold 19% of the equity share capital of the SNO;
- v. The new financial investor will control the board of SepCo;
- vi. SepCo will control the board of the SNO

It remains to be seen whether this structure would be acceptable to all the SNO partners.

Evidence from other countries suggests that the second network operator is more likely to target the profitable business sector, rather than the residential sector (Hodge & Theopold: 2001). There is therefore room for strong competition for business customers. Moreover, because of government's share holding in the SNO, it is also likely to target

⁵ Decision of Dr Ivy Matsepe-Casaburri on the granting of a license to the second national operator. Ministry of Communications, 26 August 2004.

the government departments. However, realizing these threats, the incumbent is 'locking in' certain key corporate clients by negotiating long-term contracts (Engineering News: 2004). Projections are that the new SNO might capture about 20% of the market at the most, with 10% -15% being a realistic forecast (Sunday Times: 2003). To the extent that the SNO services residential customers, competition might be limited. The regulation of Telkom might therefore still be necessary. The Act provides for a third network operator license to be granted, but only after May 2005 (Department of Communications: 2001).

3.2 The mobile market

Although there are currently three players, with two clear market leaders, there is provision in the Telecommunications Act for the Minister to license a fourth operator in the future, after careful assessment of the environment. Such a license could only be granted after December 2003 (Department of Communications: 2001). It is not clear what the optimal number of players in this market is. However, current players have an incentive to limit this number and maintain the status quo. Estimates put the current number of subscribers in this market at close to 16 million and the saturation level at around 21 million (Engineering News: 2004). Whilst the fixed line market has been stagnant or declining in the recent past, the mobile sector has been expanding at a phenomenal rate. The entry of mobile services provided Telkom with some form of competition. For a great number of people mobile phones have become a viable substitute for fixed line phones whilst for some the two are used as complements. Factors that would influence consumers to substitute their fixed line phone in favor of a mobile one include better prices, improved network coverage and quality-of-service, and richer mobile phone functionality. For those using the two as complements are influenced by factors such as the reliability and cost of service of fixed line services. Competition within this sector has resulted in innovative ways, not only technologically, but also in the areas of marketing and billing. The introduction of third generation (3G) technology promises rapid transmission of data through mobile phones. This will enable mobile firms to make even further inroads into the broader converged telecoms market. A Sunday Times survey (June, 2004) observes that increased competition and tight margins mean that mobile operators will always be looking at ways of enhancing their technology and streamlining their operations to reduce costs.

3.2.1 Competition issues

Interconnection – Mobile termination charges appear to be way above cost in many countries around the world⁶ where there is a huge differential between fixed line and mobile termination charges. In South Africa mobile termination rates are 5.2 times higher than those of fixed lines (Gillwald & Kane: 2003). The often-cited argument is that the two exhibit different cost structures. Also, because the mobile market is perceived to be more competitive, operators argue that competition would constrain their pricing behaviour. As a result, excessive pricing allegations would be unfounded, and calls for regulation unjustified. Currently, Vodacom handles about 60% of the mobile traffic. Any attempt, through regulation or other means, to reduce call termination charges would impact negatively on Vodacom's revenues, while favouring those networks with fewer subscribers.

⁶ A study by the UK Competition Commission put the figure at 30%-40% above cost.

Least cost routing – A new development in the South African market is that of least cost routing firms (LCRs). The Pretoria High Court ruled in December 2003 that least cost routing is not illegal. LCRs thrive on the fixed-mobile substitution. At the international level, LCRs offer a callback service to avoid high prices. To the extent that competitive prices would obtain as a result of the SNO entry, LCRs might not be an important factor in the future value chain. This is an important development that is likely to put pressure on Telkom's pricing policy.

3.3 Value added network services

The first value added network service (VANS) licenses were issued in 1993 (Hodge & Theopold: 2001). Since then the sector has managed to attract a large number of players, including up to 200 Internet service providers (ISPs). The economies of scale in this segment are not as large as in fixed or mobile markets, thus permitting a large number of players. The number of Internet users has grown from around 100 000 in 1994 to approximately 3,7million in 2003 (Goldstuck Report: 2004). However, the current restrictive regulatory environment hampers full competition and the benefits of convergence. Vans do not own infrastructure and neither are they allowed to do so. They are required to provide their services through Telkom-owned facilities, or through those of the SNO in the future. This policy is a clear protection of the fixed line operators at the expense of efficient service and low prices to consumers. It is also a step backwards from convergence. The restrictive policy is based on the belief that in order to attract investment and be able to ensure a fair return on investment for the SNO and to secure a market for Telkom's infrastructure, some form of protection is required. This raises many competition concerns, especially where a vertically integrated incumbent like Telkom as a network provider is also active through subsidiaries in the value-adding segment; that is, it competes downstream with the Vans. Common anticompetitive conduct includes predatory pricing, access refusal, price discrimination, poor service and excessive interconnection charges.

3.3.1 Competition issues

There are disagreements within the industry as to Telkom's exercise of market power in voice services and the degree of encroachment into exclusive terrain. Telkom has accused the Vans of offering services, which by 'regulation' should be offered exclusively by the licensed fixed line operator. Voice services include voice over Internet protocol (VoIP). Due to its exclusivity over voice, Telkom is able to offer a bundled package consisting of voice, data and value added services, whereas the Vans can only offer value added services. This gives Telkom a competitive advantage. The Vans counter-accuse Telkom of denying them access to telecoms facilities, which in terms of the Act, it is obliged to provide since the Vans are not permitted to do so. Where facilities are granted, the cost is very high which prohibits fair competition. They also accuse Telkom of leveraging its market power through anti-competitive conduct downstream where it competes with the Vans. This relates primarily to predatory pricing. These accusations have been tested at every possible legal institution governing the sector including Icasa, the Competition Commission and the courts. Although the sector has great potential for growth, the legal wrangling coupled with numerous restrictions on Vans has had a dampening effect on innovation, investment and growth. According to Gillwald and Kane (2003), the Vans sector shrunk from 5.5million in 1999 to 4.9million in 2002.

3.4 Private telecommunications networks

Telkom has exclusivity over telecoms facilities and voice services. As a result, there is no facilities-based competition and the only voice service competition is from mobile operators. Value added service providers can only lease facilities from Telkom and the SNO; they may not obtain voice services from anyone other than Telkom and the SNO, notwithstanding the fact that there are other players who can offer the same service.

Telkom owns the country's under sea cable connecting South Africa with parts of Africa, Europe and the Far East. There are concerns that access to this infrastructure may be offered at high prices and on unfair terms and conditions to competitors.

However, Eskom Enterprises and Transtel both have existing communications infrastructure that can only be used for their internal business purposes. They are not permitted to provide a service to third parties. However, since they form part of the licensed SNO, their infrastructure will be used in future to provide a public switched telecommunications service within the license conditions of the SNO. This also raises the question of whether such firms are being denied the full benefits of convergence or not. Surely they have the capacity and economies of scope to offer voice services and to service the international telephony market?

In terms of the Telecommunications Act of 1996, as amended, Sentech holds a license to provide an international telecoms gateway service enabling it to operate as a carrier of carriers. However the license is conditional upon Sentech facilitating international calls for mobile phone operators, but not to third parties. Sentech is also licensed to offer a multimedia service, but cannot offer a voice service.

4 Possible remedies

4.1 Market structure

Vertical separation – Many of the problems in the telecoms sector are rooted in the structure of the industry. Specifically, the vertical integration of incumbents is the source of most of the anti-competitive behaviour. In certain jurisdictions, vertically separating the incumbent has been seen as a panacea. The idea is that a vertically separated operator has no incentive to discriminate or deny access to an essential facility (Geradin & Kerf: 2003). This is the route that was taken in the US with the breakdown of AT&T. However, vertical separation is not always the best solution since it may result in a loss of economies of scale and scope. Also the cost of breaking up a monopoly like Telkom might outweigh any potential benefits flowing from the measure (Hodge & Theopold: 2001). As things stand in the South African context, this might not be a viable option.

Another form of vertical separation could involve prohibiting network providers from participating in certain downstream segments like the Vans market. The same economies of scope argument can be used against this option.

Licensing – The number of licenses issued for, say, fixed line network operators will determine the amount of competition in this market. However, the number of players in a market is not a definite predictor of the level of competition. A market with three players might have more effective competition than one with say five or more players. What counts is the intensity of competition rather than the number of competitors.

Licensing requirements giving exclusivity to incumbents raise artificial barriers to entry to certain segments of the market. A more appropriate measure could involve removing Telkom's exclusive rights over voice services and telecoms facilities. This might increase competition in these segments. A case in point is the restrictions on Sentech's license conditions and those of other private network operators like Eskom Enterprises and Transtel. A refinement of the regulations to lift these restrictions would allow Sentech to offer VoIP. Vans could also be allowed to offer VoIP in addition to the data service they offer, as well as being permitted to set up their own infrastructure in competition with fixed network operators. The current restrictions are seen as attempting to protect the fixed line market for the benefit of both the incumbent and the new entrant/s. The amended Telecommunications Act simply extends these restrictions and the Bill is silent on them. As a result, there is still no indication as to when these restrictions will be lifted for Vans to take advantage of a convergent environment. A relaxation of the license conditions will usher in facilities based competition.

4.2 Market conduct

Network access – According to the OECD (2004a), as a result of deregulation in the past two decades, the regulation of terms and conditions under which competing firms have access to essential facilities provided by rivals has become the single most important issue facing utility regulators; an issue which is both theoretically complex and inherently controversial. New entrants require access to existing facilities. It is the sector regulator's role to ensure that access to essential facilities is granted on non-discriminatory terms and at reasonable rates. Even where new entrants own facilities, interconnection with the incumbent may still be necessary. Farrell (1997) notes that the right of entrants to share the incumbent's network facilitates the growth of competition. However, he contends that rules to deregulate this are necessary so that sharing does not become a long-term solution, but rather should be a stepping-stone to facilities-based competition.

Interconnection – As already alluded to, the need to interconnect can be used to disadvantage competitors. Regulators should ensure that new entrants are empowered to negotiate on an equal footing with the incumbent. Although the Bill allows industry players to negotiate interconnection rates, where agreement cannot be reached, Icasa is obliged to intervene. It is in the best interests of industry to avoid regulatory intervention by setting competitive rates. In the UK, call termination charges are subject to regulation (OfTel: 2003). This forces players to adopt efficient technologies that would reduce the cost of interconnection.

Unbundling – In order to facilitate fair competition, the regulator should adopt rules obliging the incumbent to provide network elements to competitors on an unbundled basis under rates, terms and conditions that are fair and non-discriminatory (Federal Communications Commission: 1999).

Number portability – The ability of customers to change service providers without a need to change their numbers will be an important factor that will increase the ability of telecom service providers to compete. The cost of switching from one operator to another can be high in the absence of number portability, especially for businesses who have to notify customers and suppliers and change their letter heads and so on.

Although it is an expensive operation, number portability is crucial for competition (De Wet: 2001). Lack of it can be a constraining factor, giving the incumbent a competitive advantage. The Bill requires Icasa to provide regulations regarding number portability. Since mobile services have become a viable alternative to traditional fixed line service for a large number of consumers, mobile-to-fixed number portability would ensure that consumers have an unprecedented degree of flexibility and convenience in cutting the cord on their landlines without incurring switching costs.

Tariffs – Monopoly services should be regulated to avoid excessive pricing and the exploitation of consumers.

5 Towards convergence

5.1 Convergence: An overview

In the past the legislative and regulatory frameworks, around the globe, were prone to limit the full exploitation of the benefits brought about by advances in information and communications technology. From the advent of the computer, to the creation of the World Wide Web, to the proliferation of mobile phones and a host of other communication gadgets, operators and consumers have been restricted in terms of exploiting opportunities offered by technological development. In South Africa, for instance, operators have had to hold a separate license for each type of technology they use. Such restrictions, coupled with the structure of the market have resulted in limited competition in telecommunications (telecoms). The move towards convergence, if properly managed, promises to set the stage for unlimited market entry, increased competition and enhanced welfare benefits for consumers. At the same time, operating in a converged environment calls upon the regulatory institutions to develop rules and regulations that will ensure a level playing field between incumbents and new entrants, whilst guarding against market consolidation and anticompetitive behaviour.

According to Katz and Woroch (1998), convergence in telecommunications (telecoms) refers to the ability to deliver voice, video and data services using a single integrated infrastructure. Thus, in a converged world, telecommunications users are able to, among other things, transmit content over the telecommunications and IT infrastructure, handle telephone calls over the internet or TV, get internet access through TV, transmit data over mobile phones, access multimedia applications over the mobile network, advance mobility of usage and high speed communication and distribute content over broadband to different devices (Shy: 2000, Ngcaba: 2003). For this to happen, it is paramount for information technology, computing, broadcasting and telecommunications systems to be integrated.

The draft Convergence Bill, 2003 (the Bill) aims at, among other things, the promotion of competition, encouraging investment and innovation in the communications sector and ensuring an environment of open, fair and equal access (Department of Communications: 2003). In terms of the Bill, communications licenses will no longer be granted on the basis of a specific technology used. Instead, players will be able to compete within a broader telecoms market. Service, as opposed to type of technology used, is what matters in an environment of convergence (Dataweek: 2004).

The challenge facing regulators and policy makers in the telecoms sector, like in other sectors, is how to ensure that the incumbent network operator does not undermine the objectives of liberalization and convergence, by for instance, erecting artificial barriers to entry. At the same time, liberalization should not disadvantage the incumbent by, say, placing obligations from which new entrants are exempt. Whatever the policy approach, what is clear, is that the transition from a regulated to a competitive environment with convergence can never be a smooth one, hence the need for a proper regulatory regime.

Moreover, convergence encourages the adoption of complex business models that blur the traditional market boundaries, as we know them. This poses major challenges from a regulatory perspective. For instance, the relevant product market for fixed telephony, as defined today, might change in a few years' time and is different from how it was defined in the past. To this end, properly structured, well-resourced and independent regulatory institutions are paramount, not only to keep abreast of developments in the sector, but also to make firm and credible decisions that can stand up to the strictest scrutiny.

5.2 Regulatory challenges in a converged environment

5.2.1 Market definition

The art of correctly defining a relevant market is paramount in competition policy. Firstly, market definition is useful in determining the level of concentration in a particular market for merger evaluation purposes. Horizontal mergers in highly concentrated markets are likely to be blocked or approved subject to divestiture or other conditions. Secondly, market definition is crucial in determining whether a firm is dominant in the market and therefore prohibited from certain conduct. A rule of thumb among competition agencies is to define the market as narrowly as possible, both from a product and geographic perspective, whereas players have an incentive to broaden the relevant market in order to dilute their market shares.

Significant complementarities in demand that characterize telecoms services add to the difficulty of defining relevant markets. Telecommunications services often include a collection of complementary components that are bundled together as part of an overall service. Deciding whether individual elements of a service belong in the same market or whether they form different markets can be a daunting task.

With convergence, traditionally separate markets may now form part of the same product or geographic market. Thus convergence results in a lot of overlaps between markets thereby making the art of defining the relevant market an elusive one. For instance, are mobile and fixed telephony in the same market? Are they substitutes or complements? If they are part of the same market, Vodacom may be a dominant player, if the number of subscribers is a defining factor. However, if they form separate markets, Telkom is dominant in the fixed line market. Market definition can make or break a case. According to the International Telecommunications Union (2002), large corporations who are able to offer a bundle of services compete with smaller players who peer with other networks. Also, users can access the Internet through dial-up access, an integrated services digital network (ISDN), an asymmetric digital subscriber line (ADSL) or a cable TV connection. In terms of Internet access, these technologies can form part of the

same market, whereas when looked at from a different angle they might form different markets.

From a geographic viewpoint, the Internet and interconnection points permit the geographic market of players to extend beyond traditional boundaries. A service provider based in the United States of America may be competing with local South African service providers. However, closer scrutiny may reveal different market conditions and regulatory features that would put the two in different geographic markets even though they may be offering the same service.

5.2.2 Consolidation

Whereas the conventional natural monopoly theory is premised on the idea of exploiting the economies of scale inherent in network industries, convergence offers opportunities for firms to reap economies of scope by allowing a player in one market to offer services in another market without a major reconfiguration of its business offering. Thus, with convergence, we might witness a new wave of vertical and horizontal mergers as firms take advantage of economies of scale and scope.

Where competition has been introduced it is the duty of the competition authorities and sector regulators to ensure that such competition is cultivated and maintained. Mergers and acquisitions that would result in high concentration levels which could lead to an abusive of dominance should not be allowed and nor should license applications that may result in anti-competitive cross ownerships. Cowie and Marsden (1998) warn of the real danger of creating super monopolies through convergence. This view is shared by Gillwald (2003), who contends that licencing and ownership rules are crucial in avoiding concentration and market dominance that accompany the trend towards convergence.

5.2.3 Deregulation vs. re-regulation

While the industry moves towards greater deregulation and convergence, it is necessary that proper regulations are put in place to prevent the abuse of market power by incumbents in those segments of the market that are not contestable, like the local loop. This necessitates regulation of elements such as tariffs and the quality and level of service. New entrants might also need some protection till they are established. This would require that restrictions be placed on, say on the number of entrants in a particular market segment, on cross ownerships and on the entry of incumbents into certain markets. However, placing restrictions on what firms can or cannot do raises the question of why is it necessary to regulate in a converged environment, because firms should be able to enter any market by virtue of the economies of scope inherent in that market.

6 Telkom's performance

6.1 Universal access

One of the key mandates of the regulatory authority is the prompting of universal service and access by means of license requirements. A second responsibility is to ensure that licensees contribute to the Universal Service Fund. Between 1997 and 2002 Telkom made a capital investment of R48-billion to enhance the capacity and functionality of an

ageing network that needed considerable modernisation, rehabilitation (digitisation) and mass expansion to areas not served under the apartheid government (Kekana: 20030). An important development regarding access to telecoms services brought about by the amendment of the Telecommunications Act in 2001 is the provision allowing small businesses to apply on invitation by the Minister of Communications for licences to provide services and facilities to under-served areas with a teledensity of less than 5%. Section 40 of the Act requires that the Under-served Area Licensee (USAL) provide telecommunications services, including Voice Over Internet Protocol (VOIP), fixed mobile services and public pay telephones.

Access to telecoms services in South Africa has been racially and regionally unequal as shown in the following table. Whites residing in urban areas tend to have better telecommunications facilities than blacks.

Table 1: Access to telecommunication facilities in RSA (%)

		RSA (All)	Blacks	Whites
RSA (All)	Universal Service	42	18	82
	Universal Access	80	74	93
URBAN	Universal Service	64	32	82
	Universal Access	94	93	94
RURAL	Universal Service	9	5	84
	Universal Access	59	56	98

Source: White (2003)

The attainment of social objectives plays an important role in deciding how to regulate the telecoms market. Since rapid infrastructure rollout to previously under-served areas is critical to the promotion of universal service and economic empowerment and since these areas are generally either low-income or rural, the feeling has been that full-blown competition in fixed line services would not serve the objectives best. The reasoning is that:

- New entrants would target the more lucrative and easily established business and long-distance markets first and not seek to rollout in these under-served areas.
- Competition in these markets would squeeze the profitability of Telkom and so limit its own ability to rollout in these unprofitable areas, and
- The option of contributions to a universal service fund was not desirable until basic exchange infrastructure was in place in some areas to which low-income households could be more cheaply connected.

The targets set for Telkom in its five year exclusive license included rolling out 2.69 million new lines, of which 2/3rds will be in under-served areas and for priority customers. It was estimated that this would require capital investment in the region of R53 billion.

6.2 Rollout targets

The specific rollout targets are presented in the following table. The only part of local access network that is not covered by the exclusivity agreement is customer premises

equipment (CPE), which was opened to full competition immediately on passing the Act. Telkom would win an extra year of exclusivity if by the end of the fourth year it had achieved a rollout of 90% of its cumulative five-year total line target and 80% of its five-year under-serviced line target. This would be granted if Telkom accepts a new five-year total of three million new lines and a proportionate increase in its under-serviced line target. There were financial penalties for failing to reach these targets. Telkom would pay penalties of R450 per line for the first 100,000 and R900 per line for each extra line missed. If it missed Priority Customer targets the penalty per unit would be R4,500, schools R900, public payphones R2,250 and villages R1,125.

Table 2a: Telkom's expansion targets

Year	1998	1999	2000	2001	2002
New Access lines	340,000	345,000	575,000	675,000	665,000
Under-serviced areas	265,000	318,000	359,000	357,000	378,000
Payphones	20,000	25,000	25,000	25,000	25,000
No. of replacement lines	20,000	13,000	65,000	551,000	603,000

Source: Hodge and Theopald (2001)

Table 2b: Access and penetration rate

	1997	1998	1999	2000	2003	2004	CAGR % change 1997-2004
Fixed line access (000)	4258	4650	5080	5490	4844	4821	1.6
Fixed line penetration rate (%)	10.1	10.8	11.8	12.8	10.7	10.4	0.4

Source: Telkom annual reports (various years)

On the face of it, Telkom has performed quite well, improving telecommunications access since 1996. Thousands of new lines have been installed and the network is almost fully digitalized. Times for installation and for remedying faults have dramatically reduced. Telkom is also more efficient as showed by the number of fixed lines per fixed lines employees increasing from 75 in 1997 to 149 in 2004 in table 6 below. This represents considerable improvement in employee efficiency. Fixed line access grew by 1.6% between 1997 and 2004 while the penetration rate increased by 0.4% only over the same period.

Initial rollout targets were met until 2000/2001 when Telkom made a business decision to clamp down on bad debt and enforce strict settlement of accounts (Telkom Annual Report, 2001). This resulted in mass disconnections of about 1,1 million lines in 2001 and a decrease in the number of active fixed lines of 575,000 despite a roll-out of more than 630,000 new lines. In 2002 a further 606,000 lines were disconnected as 675,000 new lines were being rolled out. These massive disconnections compromised the objective of improving universal access even under conditions in which thousands of new lines were being rolled out. Hodge (2003) estimates the cost of wasted investment in disconnected lines at R17 billion.

Table 3a: Telkom's subscriber base

	Main Fixed Lines (000)			subscribers per 100 inhabitants		
	1996	2003	CAGR (%)	1996	2003	CAGR (%)
Subscribers	4,258.6	4,844.0	1.7	10.56	10.66	0.0
All Africa	13,411.4	24,711.9	10.5	1.92	3.01	7.1

Source: ITU (2004)

Table 3b: Mobile phone subscriber base

	Subscribers (000)			subscribers per 100 inhabitants			
	1996	2003	CAGR (%)	2001	2003	CAGR (%)	% Total telephone subscribers (2003)
Subscribers	953	16,860	209	24.21	36.36	6.3	77.7
All Africa	1,150.8	50,803.2	5395	3.21	6.16	11.5	67.3

Source: ITU (2004)

Table 3a above shows that Telkom's subscriber base grew from about 4.2 million in 1996 to about 4.8 million in 2003 whilst the figure for Africa is 13 million in 1996 and 24 million in 2003. While Telkom's subscriber base grew by a meagre 14% between 1996 and 2003, that of Africa grew by almost 85% during the same period. The local mobile phone sector subscriber base on the other hand grew by a whooping 18 times and that of Africa increased 45 times as shown in table 3b. This paints a bleak picture for the future growth of the fixed network. In order to forge ahead in the market, Telkom has to compete aggressively with mobile operators and the SNO in the near future on price and service quality.

6.3 Telkom's quality of service

Telkom's quality of service is regulated under the terms of Condition 6.1 and Schedule B of its main license. These lay down improvements to be achieved, in the period before effective competition, in respect of numbers of customer fault reports, time taken for fault repair, serviceability of public payphones, time taken to provide exchange lines and numbers of customers waiting for service.

To date, Telkom has, as required, eliminated the old waiting list. However, Telkom did not meet all of the targets for each relevant financial year. For the year 1997/98 Telkom incurred service quality penalties of R3,3 million, in respect of speed of fault repair and provision of service to business customers, and a rollout penalty of R 299,700, in respect of rollout to schools. For the year 1998/99 Telkom incurred a service quality penalty of R299 700 in respect of speed of fault repair for residential customers.

The general perception is that Telkom's quality of service is steadily improving, but perhaps not as rapidly as might be the case if it was subject to effective competition⁷. This would further support the case for moving as rapidly as possible to competition, while maintaining measures of consumer protection, particularly for residential customers, until competition becomes effective.

⁷ See Telkom's Annual Report 1999/2000 (Page 73)

Better incentive effects and a more directly favourable impact on customers are achieved by including service guarantees in individual customer contracts. These are preferably accompanied by the acceptance of limited liability. Customers who suffer the effects of failure to provide service to the guaranteed levels receive compensation and limited redress for any consequential loss. This provides powerful internal incentives, at minimal cost, for the company to improve its service performance and improves its relationship with its customers. At the same time, regulatory intervention is minimized.

Further useful incentives to the company and benefits to customers can be achieved by requiring the company to publish its main quality of service statistics on a regular basis. These statistics, which can usefully be published on a regional basis, should relate to key parameters that are of particular interest to customers, such as time to provide service, speed of fault repair, calls lost due to network failure, response time for directory inquiries, and so on.

6.4 Tariffs

Telkom's tariffs have been regulated by Icasa since 1997 as part of the new license conditions. Before that, tariffs were approved by the relevant Minister. Products are classified as either basket (volume 1) or non-basket (volume 2). Volume 1 products are those that are provided by Telkom only and are not subject to competition. These include line installation and rental, domestic and international call charges and ISDN services. Non-basket services are those that can be provided in competition with other service providers like premise equipment. Icasa employs a price cap form of regulation (generally known as CPI-X) as provided for under the Act and in Telkom's license conditions. The regulation conditions point out explicitly that Telkom's average increase in revenue through tariff adjustments for basket related services is limited to CPI less 1.5%. However, Telkom may increase some individual basket services by up to CPI + 5%, and still not fall foul of the regulations.

Traditionally long distance and international calls have been priced at very high levels. Revenues so gotten would then be used to subsidise local calls and telephone line rentals, which were priced below cost. In anticipation of competition Telkom embarked on a tariff rebalancing drive aimed at ensuring that prices were cost based. Tariff rebalancing is also aimed at achieving an appropriate ratio between local and international call charges as well as simplifying the pricing structure. For instance, in 2002, the actual price per minute of a local call increased by 23.9% whereas that of a long distance call decreased by 12%⁸.

Table 4: Long distance to local call ratio

Year	1997	1998	1999	2000	2001	2002	2003	2004
Ratio	13.2	9.2	7.7	6.9	5.8	2.7	2.7	2.6

Source: Telkom annual reports (several years)

The above table shows that the ratio of long distance to local calls has been declining since the tariff rebalancing exercise. Experimenting with tariff rebalancing started in 1995 but became fully implemented from 1997. Falling international and long distance call

⁸ Telkom annual report 2002.

charges does not suggest that these calls are any cheaper comparatively speaking. A research report by NUS Consulting comparing call costs between 14 countries, including Australia, the UK, the US, Germany and SA found that although Telkom reduced its international call costs, it still has the most expensive international call tariffs at 125.4 US cents. Telkom also fared worst in the local calls, moving from fifth to second-most expensive, with the cost rising by 2% to 14.2 US cents per three-minute call. Telkom's call charges rose from being 59% of the average consumer's combined telephone and ISP bill in 1993, to 85% of the bill by 2003⁹. Telkom has however criticized the report saying that it compared them with developed countries whereas a more appropriate survey comparing Telkom with its peers in the emerging markets rated them favourably. The importance of telecoms costs in business and social development cannot be overemphasized.

International voice traffic volumes constitute about 11% of Telkom's revenues. The Online Publishers Association, whose members include the SABC, Media 24 and MWeb, claim that business pays up to 13 times more for Internet charges in South Africa than in the UK¹⁰ despite receiving an inferior service. The high costs are growth inhibiting since most businesses operate via the net. Not only that, South Africa is said to be losing out as hub for the call centre industry to countries like India who have competitive telecoms prices. According to Melody (2003), Telkom's unjustifiably high prices are preventing consumers and service providers from having sufficient access to its network.

6.4.1 Residential tariffs

It appears that deregulation is yet to result in the bringing down of the cost of access to telecommunications in South Africa. During its days as a public monopoly Telkom subsidized local call rates with revenues generated from long distance and international calls. Following the company's partial privatization, Telkom embarked on a process of rate rebalancing to bring their tariffs in line with their cost. While international tariffs have fallen and the rebalancing of local and long distance rates was achieved, this was accompanied by dramatic increases in the cost of local calls and a rezoning of long distance rates.

Table 5: Telkom Residential tariff rates (Rands)

Year	1997	1998	1999	2000	2001	2002	2003	2004
Residential telephone connection charge	R170	R207.77	R210	R210	R210	R240	R268.95	R274.35
Residential monthly phone subscription charge	R60.9	R68.2	R75.7	R83.3	R62.7	R70	R76.2	R81.9
Cost of a local 3 minutes call (peak)	35c	45c	50c	58c	64c	105c	120c	148.5c

Telkom annual reports (several years)

The general expectation by telecoms users is that improvements in technology, new services, market liberalization and increased productivity would decrease the cost and therefore the prices of telecoms services. In many countries, fixed line operators

⁹ Telecoms report slams Telkom. <http://www.itweb.co.za/sections/telecoms/2004>

¹⁰ Stones, L. Telkom fees, service 'stifle growth'. Business Day, August 19 2004.

decreased connection charges, subscription and usage rates largely because they came under pressure from mobile phone operators and/or the second national carrier.

However, in South Africa local call prices have been increasing annually by substantial margins. Table 5 above shows that the cost of a three minutes call at peak time increased by more than four times between 1997 and 2004. The greatest increases were recorded during the three-year period 2001 to 2004 where the cost more than doubled. Between 1997 and 2001 local call charges increased moderately, averaging 16% before recording a sharp increase of 64% in 2002. Although residential telephone connection charges were kept constant between 1999 and 2001, they have been on an upward path ever since. Monthly subscription fees were decreased in 2001 but have also been increasing since then. The two actions were aimed at encouraging subscription to the network. Taken together, between 1997 and 2004 Telkom increased residential connection charges by 175%, residential monthly subscription fees by 35% and the cost of a three minutes call at peak time by more than four times. These price hikes have resulted in massive disconnections, thereby reversing the benefits of the roll out exercise. A massive 60% of Telkom's disconnections are due to non-payment while the other 40% are customer initiated, driven by factors such as

- Customer no longer needs the service
- Migration to prepaid service
- Migration to mobile telephony
- Affordability
- Physical relocation, and
- Death.

6.4.2 Business Tariffs

In South Africa, businesses pay the same connection and usage charges as residential fixed line telephone users. Businesses however pay a higher subscription fee than residential users. During 1996 -2000, the trend has been that of a general escalation in Telkom business tariffs to take advantage of the general businesses' price-inelasticity of demand.

6.5 Profitability

Table 6: Telkom's financial performance 1993-2004 (Rm)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
O/P	2986	2474	2636	3040	4437	4286	3436	3908	4984	4191	6514	9088
N/P	411	760	845	1209	1950	2475	2333	1617	1360	1221	1630	4523
E/S (c)	7.0	19.5	255.0	343.0	482.0	461.0	418.8	290.2	244.1	219.2	292.6	812.0

Source: Telkom annual reports (several years)

Key:

O/P – Operating profit

N/P – Net profit

E/S – Earnings per share

Although the financial performance of Telkom improved markedly from the mid-1990s in terms of revenues, partial privatization of the utility somewhat surprisingly coincided with a fall in profitability. This trend has been reversed in 2004. Net profits during the early 2000s have been lower in comparison with the financial performance in the late 1990s. The lower profitability is partly due to retrenchment costs as Telkom has been shedding

staff, with a 20% and 8% decline in employees in the 1999/2000 and 2003/04 financial years respectively.

Telkom announced its best results ever in 2004; with net profits of over R4 billion and a year on year increase in earnings per share of 177%. Fixed-line operating cost reductions of R536 million and cash flow of R4 billion have allowed for debt reduction of about R3.5 billion and a 90c per share dividend. The granting of an exclusivity period was also meant to help raise the market value of Telkom allowing for a better price on the equity sale. The stock price has more than doubled since the public offering in March 2003. Despite Telkom's rosy financial record, only about 30% of households remain connected to the fixed network.

6.6 Productivity

Table 7: Telkom's productivity indicators

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
TL (R000)	3458	3594	3773	3926	4259	4645	5075	5493	4962	4924	4844	4821
Em	61991	61255	59896	57501	57496	57813	60613	49128	43758	39444	35361	32358
TL/Em	56	59	63	69	75	82	83	112	113	125	137	149
R/TL (R)	2231	2546	2799	3204	3574	3878	4079	3859	4287	4722	4987	5169
R/Em (R000)	124	149	181	222	284	349	374	489	605	693	n/a	n/a

Source: Telkom annual reports (several years)

Key:

TL – Telephone lines

Em – Employees

TL/Em – Telephone lines per employee

R/TL – Revenue per telephone line

R/Em – Revenue per employee

Telkom has cut the number of its employees by almost 50% since 1993, decreasing from a high of about 62 000 employees in 1993 to about 32 000 in 2004. The total number of job cuts during this period averages 30000. About 3000 employees lost their jobs in 2004 alone. Since the exclusivity period, Telkom has cut its labour force by almost 44%. Telkom has contended only a small percentage of the retrenchments are forced, that is, where employees had no choice in the matter. Although this has contributed to Telkom's productivity as measured by the number of employees per service line, the figure of 149 employees per line for the financial year ending 31 March 2004 is still far from the international benchmark of 250 employees per line. With retrenchments being an unpopular means of achieving this target, Telkom will instead have to increase the number of service lines. This also is a major challenge seeing that most people now substitute their landlines for mobile phones. Moving ahead, new strategies of luring back subscribers to the fixed line network must be sought. Nonetheless, employee productivity rose significantly as fixed line per fixed line employee rose by more than 12 percent per annum during 1997-2004.

Improvements in employees per line over the entire period correspond with improvements in revenues per employee and revenues per line. The roll out programme saw a peak of 5.5 million lines erected in 2000. However, due to disconnections, this figure has been dropping ever since. Unless counter measures are adopted, the situation could revert to that of the early 1990s. Although not shown in table 8 above,

Telkom's operating costs have been rising by an average of 2.5 percent per annum between 1997 and 2003. Operating costs per line increased from R2652 in 1997 to R3189 in 2003 (Telkom: 2003). A major portion of these costs reflects once-off payments like retrenchment costs that are actually due to decisions that will increase productivity in the medium-term.

7 Conclusion

Whilst liberalisation promises exciting opportunities for new entrants and incumbents, the regulatory environment seems to contain many restrictions that will make it difficult for potential entrants to compete on an equal footing with the incumbent. There are possible solutions that could eliminate these restrictions. However, this calls for a balance to be struck between managed liberalization, which is the way government is choosing to go, and a fully open landscape, where players will be free to enter any market segment and compete with each other on an equal footing. The move towards competition also calls for prudent regulation. The Bill proposes major changes to the way Icasa will be funded in the future, which impacts on its ability to attract and retain experienced professionals with specialized skills. The role separation between Icasa and the competition agencies is another welcome development.

Although according to the Minister, the liberalization process was part of the implementation of government policy aimed at the reduction of telecoms costs by introducing competition, providing choice and increasing access to telecoms infrastructure and services to the public¹¹, the restrictive regulatory environment impeded the realization of these aims. Effective competition has not been possible and the result of this is that the incumbent operator has entrenched its monopoly position. The barring of competition in international and long-distance calls allowed Telkom to continue generating profits from these market segments to support the expenses of increased service provision. However, many new lines being installed by Telkom in order to meet rollout targets have been rapidly disconnected due to customers' inability to pay. As such, gains from privatisation in terms of wider service provision have been lower than expected.

Telkom's competitors (in other market segments) and customers alike have awaited with eagerness the licensing of the SNO, the adoption of the Convergence Bill and the loosening of the regulatory system. These three measures are thought of as necessary in ensuring the full benefits of low telecoms prices, better service quality and enhanced product choice. It is unfortunate that rapid gains in Telkom's productivity as measured by its number of employees per line, the amount of revenue per line falling operating costs of late and impressive profitability levels have not been distributed to customers in the form of lower tariffs. This is unlikely to change unless drastic measures are taken to remove the regulatory stranglehold on the sector.

¹¹ Decision of Dr Ivy Matsepe-Casaburri on the granting of a license to the second national operator. Ministry of Communications, 26 August 2004.

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