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SHACKLING SECTOR DEVELOPMENT: LEASED LINES IN THE REPUBLIC OF SOUTH AFRICA

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ABSTRACT: Leased lines are basic building blocks of mobile networks, ISPs and virtual private networks. In South Africa they have been provided almost exclusively by Telkom SA, the incumbent operator, at comparatively high prices. Those prices were controlled as part of a general price cap by regulations, but in the absence of either competition or mandatory cost orientation, the level initially rose then declined (but slowly). Attempts to introduce infrastructure competition were badly managed and delayed. The Electronic Communication Act 2005 replaces these schemes, but the implementation is slow and has not yet brought changes.

Introduction

The Accelerated and Shared Growth Initiative for South Africa (ASGISA) sets out the broad socio-economic aspirations of the government.[2] While this contains a few objectives for Information and Communication Technologies (ICTs), the general framework is to be found in the Information Society and Development (ISAD) policy.[3] This has the ambitious goal:

> "… to establish South Africa as an advanced Information Society in which Information and Information and Communication Technology tools are key drivers of economic and societal development."[4]

More detailed telecommunications goals are set by the Department of Communications.[5] These contain a general call for more affordable and accessible telecommunications for all groups in society and for business. An important theme is the development of Business Process Outsourcing (BPO) and Call Centres, in order to create jobs and to boost economic growth.[6]

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2 Annual Report (2006): *Accelerated and shared growth initiative for South Africa* Pretoria, The Presidency of South Africa.

3 Government of South Africa. Press release. Statement on the Cabinet meeting of 21 February. (22 February 2007). The policy was developed by the Presidential National Commission: http://www.pnc.gov.za/emzanzi/index.php?option=com_content&task=view&id=33&Itemid=37

4 Information Society and Development (ISAD) Plan. See http://www.pnc.gov.za/emzanzi/

5 Department of Communications (2006), *Strategic plan 2006-2009: making South Africa a global leader in harnessing ICTs for socio-economic development*. Pretoria, DOC.

6 South Africa Government Information. Statement on the Cabinet meeting of 6 December 2006. See also http://www.thedti.gov.za/BPO/bpomain.htm

However, this appears to be held back by skills shortages[7] and by the high cost of both domestic and international leased lines.[8] Leased lines are a basic input and a significant factor in the final costs for value-added and Internet service providers. They are also basic components of corporate networks.

This article considers the implementation of the Telecommunications Act of 1996, the price cap regulations, the roles of the two minor operators and self-provisioning of infrastructure by value-added service providers. It then reviews the provisions of the Electronic Communications Act of 2005. Finally conclusions are drawn, with policy recommendations.

Leased line services and prices

Until May 2004 Telkom South Africa was the *de jure* monopolist and since then the *de facto* monopolist in fixed telecommunications, including the international gateway and the supply of leased lines. With the introduction of limited competition in downstream markets from the mid-1990s Telkom became the exclusive supplier of leased lines to:

- Mobile Network Operators (MNOs);
- Value Added Network Services (VANS) providers; and
- Internet Service Providers (ISPs).

As these markets grew it greatly boosted the position of Telkom, taking a significant share of the revenues generated by the service providers and allowing it to install new or to upgrade old infrastructure to serve the end-users. Telkom was also the sole supplier of leased lines for private networks for business, government and other large organisations. Even in 2007, it retained a monopoly on access to the undersea cables necessary to provide International Private Leased Circuits (IPLCs).

Latterly some very limited infrastructure competition has been permitted. The government created Sentech as a multi-media operator, though with a vanishingly small market share for leased lines.[9] Neotel, the Second Network Operator (SNO), was delayed by several years in its formation and although finally licensed in 2006,

7 Philip van Heerden (2006). *Networking skills in South Africa: will an increasing shortage hinder growth?* Framington, IDC.

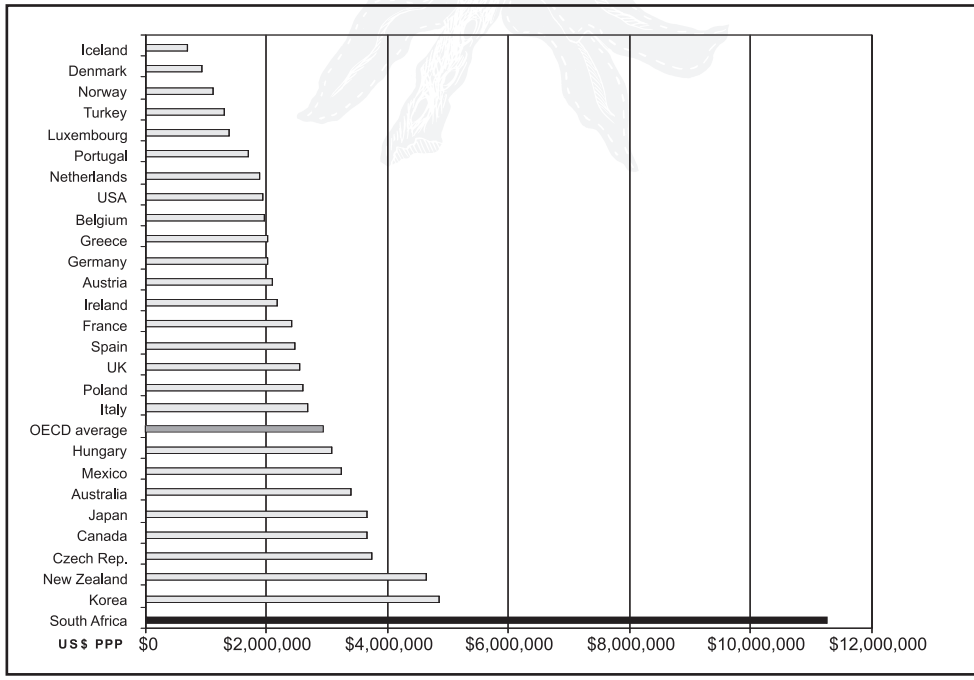
8 Chris Benner, Charley Lewis & Rahmat Omar (2007). *The South African call centre industry: a study of strategy, human resource practices and performance: part of the Global Call Centre Industry Project*. Johannesburg, LINK Centre.
See also the South African Call Centre Community (SACCOM).

9 Sentech Act, No 63 of 1996.

announced its first contract to supply infrastructure only in May 2007.[10] VANS providers are to be given new classes of licences, with at least some being authorised to enter the infrastructure market.

Comparing the prices charged for leased lines by Telkom with those in OECD countries, South Africa is markedly more expensive (see Figure 1). In 2004, the price of a basket of lines was three times that of Mexico, four times that of Poland and eight times that of Turkey. While the fairness of such comparisons can always be challenged, the very high prices are clearly discouraging businesses considering locating to South Africa, confirming complaints made by international firms.

FIGURE 1: 2MBITS/S LEASED LINES: SOUTH AFRICA AND THE OECD IN 2004[11]



10 Neotel press release. SITA switches to Neotel (24 May 2007). http://www.neotel.co.za/neotel/view/neotel/en/page14?oid=40990&sn=Detail

11 Steve Esselaar & Alison Gillwald (2007) 2006 South African ICT sector performance review. *LINK Public Policy Research Paper No 8*. Johannesburg, University of the Witwatersrand.
The original data are from the *Telkom SA 2004* price list, taking the prices for Silver Megaline Plus leased lines and OECD (2006) Communications Outlook 2005 (Paris, Organisation for Economic Co-operation and Development). The OECD basket comprises 100 leased lines of differing distances, but excludes the costs of tail circuits. See also Teligen (2000) OECD Telecommunications basket definitions as of June 2000 (Paris, Organisation for Economic Co-operation and Development).

An overall price cap for telecommunications was put in place in the late 1990s, with leased lines included in the basket. While price increases were gradually brought under control, prices have only been partially rebalanced. Under the price cap regime they would never have been fully rebalanced.[12] Without a realistic prospect of competition there was no reason for Telkom to reduce its monopoly prices.

The Electronic Communications Act (ECA) signalled the end of the price cap regime. Chapter 8 of that Act requires operators to lease facilities to other market players, while Chapter 10 requires the regulator to impose pro-competitive remedies, including wholesale price controls, on dominant operators. Together, these could see significant changes.

In February 2007, the Minister of Communications complained about private sector participation in the market and proposed to "twist its arm", apparently with a view to increasing its participation and in this way to reduce prices.[13] This appears not only to go against international experience, but also commitments made at the World Summit on the Information Society (WSIS) to create an enabling environment and regulatory certainty.[14] A failure to understand the importance of appropriate market conditions combined with *ad hoc* decision-making might explain some of the problems of the telecommunications sector.

The United States Trade Representative (USTR), acting on behalf of carriers based in the US and under a direction from the US Congress, has criticised the behaviour of the South African government, the regulator and Telkom in a series of complaints.[15] In 2001, the USTR complained of the failure by Telkom to supply leased lines to service providers because Telkom took the view that the use to which they were being put was infringing its monopoly on basic services. In 2002, the USTR report continued to highlight the disadvantages rivals to Telkom faced under the regulatory regime. In 2003, it argued that South Africa was failing to meet a WTO commitment to allow the resale of basic services. In 2004, it complained about the

12 Dr Celli, head of regulatory affairs for Telkom, speaking on 17 May 2007 at the ICASA hearing on Wholesale Call Termination.

13 Linda Ensor. Private sector 'must be part of telephone unbundling' *Business Day* 21 February 2007. http://www.businessday.co.za/articles/topstories.aspx%5C?ID=BD4A391243

14 Item 14 of the Tunis Agenda for the Information Society (WSIS-05/TUNIS/DOC/6(Rev. 1)-E): "Therefore, governments should take action, in the framework of national development policies, in order to support an enabling and competitive environment for the necessary investment in ICT infrastructure and for the development of new services."

15 http://www.ustr.gov/Trade_Sectors/Telecom-E-commerce/Section_1377/Section_Index.html

undermining of the independence of the NRA and the need to permit resale of basic services. Thereafter, South Africa escaped criticism. It was also in 2004 that SBC sold its holding in Telkom SA, perhaps removing the incentive for its domestic rivals in the US to lobby against it.[16] AT&T, then a separate firm, gradually dropped out of the South African market, while Verizon simply did not complain.

Telecommunications Act 1996

For a decade the primary legislation was the Telecommunications Act.[17] While it has recently been repealed and replaced by the Electronic Communications Act, many elements of the old legislative framework remain as transitional measures, while ICASA replaces the licences and created new regulations.[18]

Article 45 of the Telecommunications Act authorised the Minister to adopt price regulations for 'fields' where there was no or insufficient competition.[19] In common with many countries, prices had historically been determined administratively and were frequently out of line with costs. In some instances the costs would not even have been known.

The intention to use a "price cap" was announced in the 1996 White Paper.[20] This was to allow Telkom to bring prices more closely in line with costs, to eliminate cross-subsidies, while keeping rises below the level of inflation. In May 1997, the Minister of Communications made a direction for the use of a price cap.[21] He specified that it should not have a "materially adverse" effect on the ability of Telkom to achieve its roll-out targets. Initially, the cap was not binding, merely an obligation to take all reasonable steps.

16 Company news: SBC sells shares in Telkom South Africa. *New York Times*, 19 June 2004.

17 Telecommunications Act, No 103 of 1996 as amended 2001.

18 The NRA was initially the South Africa Telecommunications Regulatory Authority (SATRA). This was later merged with the broadcasting regulator to become the Independent Communications Authority of South Africa (ICASA). See the Independent Communications Authority of South Africa Act of 2000 (No 13 of 2000).

19 Article 45 (2) The manner of determining fees and charges shall be prescribed only in respect of fields where no or insufficient competition exists: Provided that within 12 months after the date of commencement of this Act, the Minister shall determine such fees and charges in respect of Telkom, and such fees and charges shall be in force until the third anniversary of the date on which the Minister issued a licence to Telkom in accordance with section 36(1)

20 Ministry for Posts, Telecommunications and Broadcasting. 1996. White Paper on Telecommunications Policy. Pretoria. *Government Gazette* No 16995, 13 March, 1996.

21 Minister for Posts, Telecommunication and Broadcasting. Notice 773. Policy Direction Number One on fees and charges for telecommunication services. *Government Gazette* No 17984, 7 May 1997.

The Minister specified the formula for price changes to apply for a period of three years (see below), setting the productivity factor to be 1.5%.[22] The prices of "elements" in the basket were permitted to be raised by not more then 20% above the generally permitted rate. The published prices were to be the maximum that could be charged and were subject to the principle of non-discrimination, which Telkom took to mean minimal and identical discounts for only its very largest customers. Leased lines were one "element" in an overall basket of telecommunications services, though itself comprising many tens of individual prices. However, value-added services were excluded from the basket.

The effect was to permit a massive increase in the price of leased lines, close to the maximum permissible (see Table 1). Looking back, the Independent Communications Authority of South Africa (ICASA) noted that:

> "This suggests that either this service was previously greatly under-priced, or that Telkom sees market advantage in raising the price of this type of facility on which competitors to its own services business currently depend."[23]

There was no justification given by Telkom in terms of any rise in the underlying costs. It appears to have been an exercise in market power, with the upstream supplier taking profits from downstream VANS, ISPs, MNOs and the owners of private network operators.

Table 1: Price increases for 2Mbits/sec leased lines [24]

	1998	1999	2000	Cumulative	Deflated
	%	%	%	increase	by CPI
Megaline C Tariff	25.5	24.6	22.9	92.2	74.2

The Telecommunications Amendment Act extended the price control regime from the initial three years into a rolling arrangement.[25] A sequence of regulations on price controls was adopted under the amended Act (see Annexe 1). Section 96 of the Act gave the Authority a general power to propose regulations, though these could only be adopted by the Minister who had and who exercised the power to amend such proposals.

22 Notice 772 Ministerial determination on fees and charges. *Government Gazette* No 17984, 7 May 1997.

23 Paragraph 5.5 in *Government Gazette* No 21925.

24 Table 1 from *Government Gazette* No 21925.

25 Telecommunications Amendment Act (No 64 of 2001) *Government Gazette* No 22889 (30 November 2001).

At the end of 2000, ICASA launched a consultation on fees and charges for telecommunications services.[26] It argued that the use of a price cap was in line with international practice and would help to rebalance tariffs. Moreover, it allowed Telkom, if it were to make efficiency savings, to keep the balance as profits.

ICASA noted that most respondents felt that there was "considerable scope for improvement" in the application of the price controls and an urgent need for greater downward pressure, especially on residential prices, in order to offset the effects of rebalancing.[27] It failed to note that the absence of competition meant there was little pressure on or incentives for Telkom to make price reductions.

Comments had also been made by service providers about the need for the development of a wholesale market, with significant discounts for bulk purchasers.[28] This continued to prove a failing in the South African market structure.

ICASA proposed to reduce from 20% to 5% the maximum price increase permitted for any element of the basket – that is over and above the basket price increase – with a separate sub-basket for consumers in order to protect them from excessive price rises.[29] The productivity factor was to be 5%, in contrast to the suggestion by Telkom of 0%, because it had already achieved "virtually all efficiency improvements possible".[30] Although the regulations were adopted by the Minister, the productivity factor was reduced to 1.5%. [31]

By comparison with other countries, the productivity factors have been very low, more typical values would be 5 to 10 %. Indeed in its consultation ICASA conceded that 1.5% was "fairly undemanding".[32] One justification claimed by Telkom for the low productivity factor was the commitment to expand its fixed network by 2.7 million lines by May 2002, part of the agreement to continue its exclusivity. Yet, almost two-thirds of these lines

26 General Notice 4715. Notice in respect of a review of fees and charges in the public switched telecommunications sector. *Government Gazette* No 21925, 22 December 2000.

27 General Notice 886 of 2001: ICASA Findings and conclusions on the review of rate regime in the public switched telecommunications sector. *Government Gazette* No 22240, 23 April 2001.

28 Paragraph 2.20.1 of *Government Gazette* 22240.

29 General Notice 887 of 2001: ICASA. Notice of intention to make regulations on fees and charges in the public switched telecommunications sector. *Government Gazette* No 22241, 23 April 2001.

30 Paragraphs 2.7.1 and 2.14 of *Government Gazette* 22240 above.

31 Government Notice No R. 1248. Regulations: fees and charges in the public switched telecommunications sector. *Government Gazette* No 22870. 26 November 2001.

32 Paragraph 13.2 in *Government Gazette* No 21925 above.

were subsequently disconnected.[33] Moreover, by not facing competition it gained considerable economic benefits. A more significant factor appears to have been the lobbying efforts of Telkom, arguing it needed to report substantial profits – a large part of which was paid to the government in dividends.

Although ICASA had published its draft price regulation in April 2001, it was not immediately adopted by the Minister. Acting in the resulting regulatory vacuum, Telkom implemented a tariff increase on its own authority, using the CPI forecast for January 2002 of 5.5% and a productivity factor of zero%. This gave it an overall 5.5% price increase, as against the 2.9% it would have been allowed under the draft regulations.[34]

The regulation was finally adopted by the Minister at the end of November 2001, but ignored by Telkom. ICASA applied to the High Court, asking that the price increases announced by Telkom be blocked as a matter of urgency. The court held the balance of convenience to lie with Telkom. Anything collected above the permitted rates could be repaid, whereas suspending the price increases would have disrupted the business of Telkom and service providers.[35] Telkom separately sought a review of the price regulations.

The matter was settled out of court in June 2002, with both parties withdrawing their actions and with ICASA accepting the price increases. In 2003 and 2004 Telkom undertook to forfeit a total of ZAR320 million in permissible tariff increases. It also introduced a "lifeline" system under which defaulting customers would continue to receive incoming calls and make outgoing calls to emergency numbers though only if they paid the monthly line rental charge.[36]

The Price Control Regulations were revised in 2002, with the primary change being the proposal by ICASA that the "carry over" of unused increase be limited to one year.[37]

In late 2002, Telkom filed proposals for an overall price increase of 9.5%, but with an increase of 12.5% for basic service charges – within the permitted 5% limit above the overall price increase. This was severely criticised by William Melody, who re-iterated

33 See *Telkom Annual Report* (2001).

34 Taking the Telkom revenues in 2002 to be R 33 970 million, and assuming conservatively that 75% was under the price cap, then taking 2.6% of that, the benefit to Telkom would have been R662 million in 2003.

35 ICASA *v* Telkom SA Ltd & another (2005) JOL 15024 (T) Case No 33507/01, 31 December 2001.

36 Telkom SA Ltd. Press release. 6 June 2002.

37 ICASA. General Notice 1409. Notice of intention to make regulations. *Government Gazette* No 23726, 7 August 2002. The Minister's adopted version was published in *Government Gazette* No 23986, 24 October 2002.

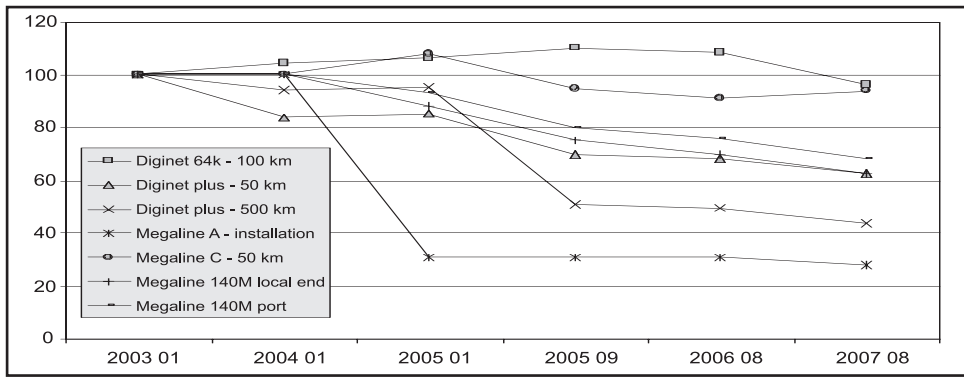
the complaint that the productivity factor was very low by global standards and out of line with the labour efficiency gains being reported by Telkom (*see below*).[38]

In 2004, ICASA undertook another consultation on the price regulations, having for the first time obtained the Telkom regulatory accounts.[39] The time it proposed a productivity factor of 4% for 2005.[40] It held public hearings in mid-December, then in February 2005 published draft regulations.[41] The text was later revised to show the derivation of the 3.5% productivity factor.[42]

The Minister published revised price regulations in July 2005 covering the final period from August 2005 to July 2008.[43]

The list price changes of a small selection of leased line pricing elements are shown in Figure 2. Although generally downwards, the range of changes in the prices is quite wide, with there being no consistent pattern and with very little advantage being taken of the capacity to raise prices. Any reductions have to be seen against the high starting point of the charges.

FIGURE 2: CHANGES IN LEASED LINE PRICE ELEMENTS AS INDEX NUMBERS



38 William Melody (2002) Assessing Telkom's 2003 price increase proposal: price cap regulation as a test of progress in South African telecom reform, and e-economy development. *LINK Centre Policy Research Paper No 2*, Johannesburg, University of the Witwatersrand.

39 CASA. Notice 2490. Inviting representations with regard to the review of Telkom's price control. *Government Gazette* No 26977, 8 November 2004.

40 ICASA. Notice 2491. Notice of intention to make regulation. *Government Gazette* No 26979, 9 November 2004.

41 ICASA. Notice 209. Inviting representations with regard to the review of Telkom's price control. *Government Gazette* No 27277, 9 February 2005.

42 ICASA. Notice 246. Inviting representations with regard to the review of Telkom's price control. *Government Gazette* No 27284, 18 February 2005.

43 Government Notice R. 675, Regulations approved under section 96 (6) published in *Government Gazette* No 27772, 2 July 2005. Some corrections were published in Government Notice R 799, Amending regulations. *Government Gazette* No 27875, 4 August 2005.

While the prices charged by Telkom are a matter of record, the revenues from these services are not. Telkom filed its revenues with ICASA alongside the proposed price changes – though these were confidential and have never been published. ICASA has seldom made a public statement that it had approved a price increase, rather the 15- day period had been allowed to lapse and the new prices approved by default.

For most of the period of the price cap ICASA lacked regulatory accounts from Telkom and thus was unable to verify the calculations.[44] It could only have taken the revenues on trust and thus their conformity with the regulations. Even with the regulatory accounts it is an extremely complex exercise to verify that the equation has been correctly applied. Moreover, to do so in 15 days is a considerable and, perhaps, impossible challenge.

The origin of price-cap regulation was in the United Kingdom, where it was introduced in 1984, to be followed by many other countries, often with additional complications to the initially simple model.[45] It was not seen as a standalone tool, but to be used in coordination with other policies, notably the introduction of competition.[46] Price-caps have generally achieved the social equity objectives of constraining price increases for consumers. In the US, price cap regulation was found to generate responses from operators largely consistent with economic theory – prices fell, productivity rose and more modern infrastructure was deployed. [47]

In South Africa, the lack of real or prospective competition in most areas meant that Telkom had few incentives to rebalance its prices. In leased lines competition was only to emerge in 2007 on the core inter-city routes, but was still absent from tail circuits.

The price cap

The price control regulation imposed on Telkom is shown in Equation 1:

(1)
$$\frac{RC_t}{RR_{t-1}} \leq \Delta CPI_{t-1} - X_t$$

44 The obligation to provide regulatory accounts is contained in the Telkom Licence.

45 M . Beesley & S . Littlechild (1989) The regulation of privatised monopolies in the United Kingdom. *The RAND Journal of Economics* 20 (3) pp. 454-472.

46 OECD. 1995. Price caps for telecommunications: policies and experiences. ICCP No 37. Paris, Organisation for Economic Co-operation and Development.

47 Jaison Abel. (2000). The performance of the state telecommunications industry under price-cap regulation: an assessment of the empirical evidence. NRRI 00-14. (Columbus, National Regulatory Research Institute)

The right hand side of the equation is the Consumer Price Index (CPI) less a productivity factor specified by the Minister of Communications (see Table 2). The equation was modified in 2001 to allow any unused price increase to be carried over into the next year.

TABLE 2: CPI AND PRODUCTIVITY FACTORS[48]

	1998	1999	2000	2001	2002	2003	2004	2005	2006
Consumer price index[49]									
January to January	6.8	7.6	7.5	8.1	6.2	8.9	4.7	3.8	3.8
September to September	7.5	7.5	7.6	6.2	9.4	5.8	3.8	4.7	3.8
Productivity factor (X)	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	3.5

The left hand side of Equation 1 is the ratio, expressed as a percentage, of the Revenue Change (RC) divided by the total Reported Revenue (RR) for all the items in the basket. For each basket "element" the Revenue Change is determined as the Reported Revenue multiplied by the proposed percentage price change (ΔP) for that element.

(2) $$RC_{i,t} = RR_{i,t-1}\Delta P_{i,t}$$

The total Revenue Change (RC) is then the sum of the changes of the n elements in the basket.

(3) $$RC_t = \sum_{i=1}^{n} RC_{i,t}$$

Nominal revenues for the next year are generated by assuming no change in demand, or discounting practice, only a change in prices. These revenue changes

48 A change was made from using a forecast CPI of January to January, which had tended to overstate inflation, to use the data for the previous year from September to September.

49 Consumer Price Index (P0141.1). Metropolitan and other urban areas – Core index.

are then aggregated by simple addition. The ratio is calculated as the total change in revenue divided by the total current revenues and this is tested using Equation 1.

Individual basket 'elements' are separately tested against a higher figure of 5% more than in Equation 1. So that, for example, leased lines cannot rise by more than 5% more than CPI-X, typically around 2% or 3%, making a ceiling of around 7% or 8% price increase.

Schedule A of the Price Control Regulation of 2001 specified the composition of the basket of charges of which Section 2.6 identified point-to-point leased circuits, including the fixed rental and any distance/capacity dependent elements used in private networks and for private circuits. Sections 1.3 and 2.3 refer to the installation and rental charges for 2Mbits/sec "digital lines".[50] The basket expressly excludes value-added services. Telkom access circuits, for example, for its VPN Supreme service are excluded from the basket, though not those for Internet access or frame relay.

Surprisingly, the basket includes Telex and X.25 (Saponet-P), which would ordinarily be considered to be obsolete services. The risk of Telkom raising these prices would seem slight and might in any event encourage customers to move to more efficient technologies. Their inclusion distorts the basket, though the revenues are now very low.

If a price increase is not used for leased lines or if the prices are reduced, then the corresponding quota of revenue can be used in increasing the price of other services, provided the results conform to the two conditions. The scale of any such contribution would depend on the size of the total revenues for leased lines and any price change. If say, leased line prices were to be reduced by 5% overall, then the contribution available to raise other prices would be the received revenues for leased lines multiplied by (CPI-X) + 5%.

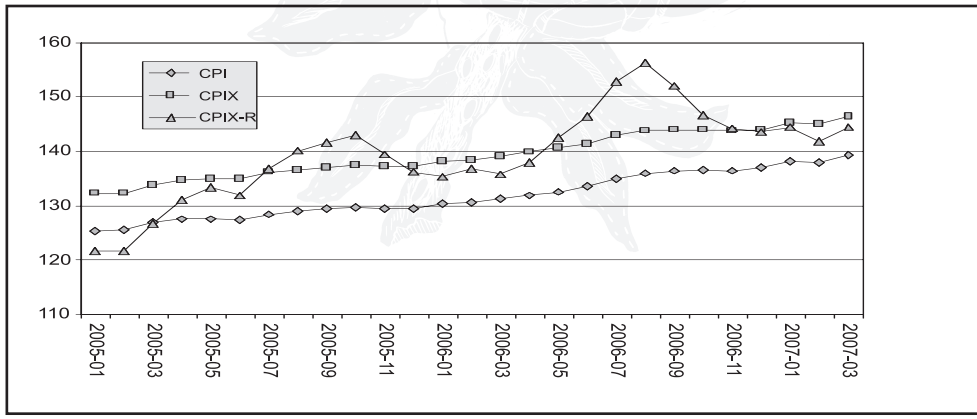
The same approach is taken at lower levels. For leased lines this means that the various elements that comprise point-to-point leased lines are added together, weighted by the unpublished volume of the revenues, together with their proposed price changes.

50 It is not obvious what these are and whether they might not duplicate parts of Section 2.6.

Administered prices

President Mbeki in a speech to Parliament recognised the importance for society and the economy of those prices controlled by government.[51] The issue was discussed by the cabinet during 2004, with Statistics South Africa (StatsSA) being directed to create an index of administered and regulated prices.[52] Figure 3 shows the CPI, the CPI-X (ie excluding mortgage interest payments), and the CPI-X-R for regulated prices, which includes telecommunications charges.

Figure 3: CPIs for historical metropolitan areas (100 = 2000)



The National Treasury conducted a review of administered prices across several sectors.[53] It offered a damning critique of telecommunications price controls.[54] In particular, that:

> "It is clearly very unlikely that efficient prices will emerge from the current processes for setting administered prices in the telecommunications sector."[55]

It described the regulatory network and the interplay of the various actors (see Figure 4).

51 Address of the President of South Africa, Thabo Mbeki, at the Second Joint sitting of the third Democratic Parliament, Cape Town, 11 February 2005. http://www.info.gov.za/speeches/2005/05021110501001.htm

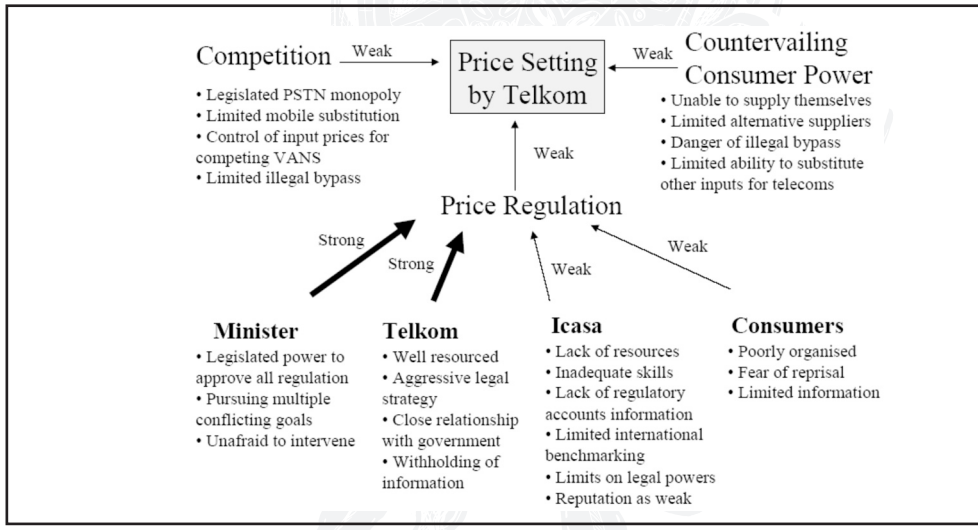
52 For the results, see, for example, http://www.statssa.gov.za/PublicationsHTML/P0141February2007/html/P0141February2007_14.html

53 Economic and employment cluster: parliamentary media briefing by Minister of Trade and Industry, Minister M Mpahlwa 24 May 2004. http://www.info.gov.za/speeches/2004/04052413151001.htm

54 James Hodge (2004) Administered prices: telecommunications. Pretoria, National Treasury. http://www.treasury.gov.za/documents/epir/telecomm.pdf

55 David Storer & Ethel Teljeur (2004) Administered prices: executive report: a report for National Treasury. Pretoria, National Treasury. http://www.treasury.gov.za/documents/epir/Summary%20of%20sector%20reports.pdf

FIGURE 4: FORCES CONSTRAINING PRICE SETTING[56]



The role of the Minister of Communications was central to the process, since the legislation required her consent for the promulgation of any regulations and her invitation to apply for licences that involved the construction of infrastructure and thus compete with the incumbent. Telkom lobbied the minister and also used the asymmetry of information to strengthen its position *vis-à-vis* the regulator.

At the instigation of the Deputy Minister, the Department of Communications organised two colloquia on telecommunications prices in July and October 2005.[57] These addressed primarily retail prices, but noted the following:

- the local loop had to be either unbundled or opened for shared access;
- self-provisioning of VANS providers had to be revisited;
- ownership or custody of SAT-3 had to be re-examined and access expanded;
- the wholesale rate on line rentals for ISPs and the question of leased line costs needed urgent attention.

In her budget speech in 2006, the Minister announced a committee to examine local loop unbundling.[58] One year later, the Minister announced a "policy decision" that unbundling be completed by November 2011.[59] Further details were set out in the

56 Hodge (2004) Figure 1 page 10.

57 http://www.doc.gov.za/_colloquium/mainframe.htm

58 Government Information Service. Press release. Communications Minister Dr Ivy Matsepe-Cassaburri announces key policy decisions for information and communication technology (ICT) sector. 25 May 2006.

59 Budget vote speech. The Minister of Communications Dr Ivy Matsepe-Casaburri National Assembly 24 May 2007, Pretoria, Department of Communications.

Government Gazette,[60] with the background in the report of the Local Loop Unbundling Committee (LLUC).[61] However, the implementation would depend on the analysis of the relevant market to be conducted by ICASA and any regulations.

Telkom SA

As with many other incumbent operators, the pre-history of Telkom was as a converged provider of posts and telecommunications. It retains many properties and much of the infrastructure from that past. In the case of South Africa this has a heightened political significance, since Telkom closely followed the policies of the apartheid regime, doing little to serve the historically disadvantaged populations.[62]

Although Telkom had lobbied ministers and the regulators with arguments in favour of a low productivity factor, it told a very different story to the financial markets in its annual reports and other statements. In 2000, it reported 4-year compound annual growth rates of 19 % in revenue per employee, 14% in operating profit per employee and 15% in value created per employee (see Table 3). In 2000 it stated that "Telkom's ongoing restructuring programme is paying off richly with striking improvements in productivity and efficiency during the past year".[63]

Table 3: Telkom productivity factors (1996-2000) [64]

	1996	1997	1998	1999	2000
Average number of employees	57 501	57 496	57 813	60 613	57 877
Revenue per employee (ZAR)	227 666	275 550	332 417	374 090	461 664
Operating profit per employee (ZAR)	85 512	110 842	114 818	118 299	147 012
Value created per employee (ZAR)	161 962	207 423	223 842	230 446	285 744

60 Government Notice 469. Electronic Communications Act (36/2005): Notice inviting comments on proposed policies and policy directions. *Government Gazette* No 29923, 25 May 2007.

61 Local Loop Unbundling Committee (2007). Final Report (Pretoria, Department of Communications).

62 Robert Horwitz (2001) *Communication and democratic reform in South Africa* (Cambridge, Cambridge University Press).
Myron Zlotnick (1999) Telecommunications monopoly in South Africa – some human rights aspects and options for future regulation. *Journal of African Law* 43 (2) 214-233.

63 *Telkom Group Annual Report* (2000), CEO Review – cover page.

64 *Telkom Annual Report* (2000), page 73.

The advances did not stop then. Table 4 shows the further improvements in efficiency. One part of this was achieved by the successful rollout of workforce management software:

The field force team, which delivers service to customers, achieved significant savings through a reduction of the following: the vehicle fleet (6.0%), dispatches due to a reduction in repeat faults, theft and breakage incidents and the cost of fixed-line materials and maintenance (16%).[65]

Telkom attributed its successes to having invested in the right skills and having developed a "performance driven culture" in both its management and workforce.[66]

TABLE 4: TELKOM SA PERFORMANCE (2002–2006)[67]

	2002	2003	2004	2005	2006	2007
Revenue (ZAR m)						
fixed	27 976	29 635	31 004	31 457	32 749	33 295
mobile	8 075	9 890	11 428	13 657	17 021	20 573
Operating profit (ZAR m)						
fixed	2 425	4 348	6 724	8 021	10 242	9 040
mobile	1 816	2 166	2 614	3 240	4 435	5 430
Fixed access lines						
Number (thousands)	4 762	4 709	4 680	4 726	4 708	4 642
Revenue per line (ZAR)	4 882	5 157	5 341	5 250	5 304	5 276
Employees	39 444	35 361	32 358	28 972	25 575	25 864
Lines per employee	121	133	145	163	184	180

Note: Mobile figures represent one half of Vodacom totals attributable to Telkom.

The sharp rise in the contribution of mobile revenues from Vodacom is striking, with the fixed business almost stagnating, especially in the latter years. Had there been some competition, Telkom might have been obliged to improve its growth in fixed markets.

65 *Telkom SA Limited Group Annual Results* for the year ended 31 March 2004.

66 *Telkom Group Annual Report* (2002), p. 23.

67 Compiled from the following:
Five-year operational review for the years ended March 31, p. 89 of *Telkom Annual Report* (2006).
Three-year financial review for the years ended March 31, p. 122 of *Telkom Annual Report* (2006).
Financial Review, page 50ff of *Telkom Annual Report* (2003).
Telkom Group provisional annual results – March 2007, pp. 5 & 17.

Wholesale supply

Telkom has lagged other incumbent operators in its continued reliance on leased lines, representing more than 20% of its fixed network revenues. It is only very recently that managed network services have taken off, with steep growth in the lease of IP-VPNs.

Telkom provides point-to-point leased lines both for retail and for resale. However, it consistently pressed customers to obtain these lines directly, rather than through their VANS providers. Telkom struggled to avoid the creation of a wholesale market in which it would have to offer significant discounts to downstream suppliers and rivals. Providers would obtain a "letter of agency" from the end-user to authorise them to procure and to maintain the lines, managing the relationship with Telkom, while the customers had only to pay the invoices.

In pricing access lines to some of its own services, Telkom offered 'flat rate' or distance independent tariffs. For example, Diginet line rental had two sets of tariffs, one for use as leased lines and the other for Telkom services, as access lines to Frame Express and South Africa Internet eXchange (SAIX). For Diginet-Plus at 2Mbps:[68]

- FrameExpress/SAIX ZAR3 054
- leased line services ZAR2 129 plus (distance in km x ZAR152.21)

There were approximately 50 Points of Presence (POPs) for SAIX, at least as many as the four largest rival VANS put together, giving it a considerable competitive advantage. SAIX is a multi-location platform, rather than a single point of traffic interchange.

Figure 5 shows a Telkom forecast of the future migration amongst data services. The WiMax and DSL sections are mostly residential and for individual customers and so can be discounted for the business telecommunications market. However, the collapse of frame relay, the decline of Diginet and the rise of Ethernet are global trends in business telecommunications.

68 Tables A.2.9.3 and A.2.9.4 in *Telkom Tariff* list 1 August 2006. The rate for leased line services applies up to 50km, with different rates applying at longer distances.

FIGURE 5: DATA SERVICE MIGRATION FORECAST[69]



Telkom has not been required by ICASA to publish quality of service data and in particular evidence of its performance for different downstream providers. However, it has offered a small amount of information in its reports to the SEC (see table 5). In 2005, Telkom changed the measures reported (see table 6), making more difficult comparisons over time and with operators in other countries. Without considerably more data and without it being audited, it is impossible to assess the accusations made against Telkom that it discriminates in favour of its own direct customers and against those of VANS and ISPs.

TABLE 5: QUALITY OF SERVICE FOR FINANCIAL YEARS 2001 TO 2004[70]

	2001	2002	2003	2004
Mean time to install (days) [71]				
2Mb data	53	35	26	20
subrates data	28	23	20	14
Mean time to repair (hours)				
2Mb leased lines	3	3	3	3
subrate leased lines	6	6	4	4
Service measures (number of faults)				
per 1 000 subrates	1 053	919	847	880
per 1 000 2Mb	718	925	669	498

69 Taken from an analyst presentation by Steven Hayward (Managing Executive Retail Marketing). Filed by Telkom with the Securities and Exchange Commission (SEC) as a 6-K report on 10 April 2007.

70 Page 54, of *Form 20-F Telkom SA Ltd* 2003. Page 63 of 2004.

71 In the 2004 financial year, Telkom revised the installation measures from a mean to an average. On the original basis, the average times to install 2Mb data and subrates data in 2004 would have been 19 and 17 days, respectively.

The fault rates have been affected by theft and vandalism, despite an increased number of alarms, security patrols and the like. Telkom has been reduced to encasing copper cable routes in concrete, installing security manhole lids, burying overhead cables and optic fibre and upgrading copper to fibre in order to reduce theft.

Table 6: Quality of service for financial years 2004 to 2007[72]

	2004	2005	2006	2007
Business voice				
Installed in 5 days	85%	68%	63%	81%
Faults per 1 000 lines	295	287	300	328
Cleared in 24 hours	94%	62%	61%	66%
Data subrates				
Installed in 10 days	65%	75%	40%	41%
Faults per 1 000 lines	880	756	801	870
Cleared in 24 hours	99%	97%	92%	84%
ADSL business				
Installed in 20 days	86%	84%	56%	76%
Faults per 1 000 lines	624	505	480	575
Cleared in 24 hours	80%	79%	54%	33%

The provision of International Private Leased Circuits (IPLCs) has been limited to Telkom, through its monopoly on access to the undersea cables and thus the provision of International Private Leased Circuits (IPLCs). It has derived considerable revenues because of the high prices it has been able to charge.

The only undersea cable with landing stations in South Africa is variously known as:

- West Africa Submarine Cable (WASC);
- Southern Africa Telecommunications 3 (SAT-3);[73]
- South Africa Far East (SAFE).

These land at Melkbosstrand and Mtunzini, going to Portugal and India, with onward connections to other cables. All connections in South Africa are made through the international exchange in Johannesburg where the Points of Presence of the global network service providers (eg BT, Orange and Verizon) are consequently to be found. SAT-3 has been upgraded from time to time, greatly increasing its capacity at

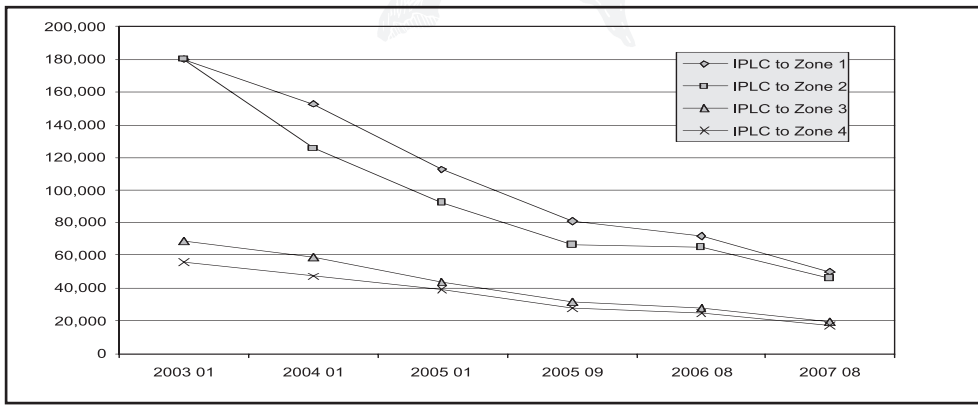
72 P. 68 of Form 20-F Telkom SA Ltd (2006) and p. 74 of Form 20-F Telkom SA Ltd (2007).

73 SAT-2 still exists with its limited capacity, generally used as back-up in the event of a breakage of SAT-3.

relatively modest additional cost.[74] However, these improvements have only been partially reflected in the prices charged to customers, because of the absence of competitive access to the increased capacity (see Figure 6). Much of the cable capacity is used as back-up for the route from Europe to India, with 5Gbps of capacity at the Cochin landing station for SAFE, which can connect to Bangalore.

In an interview in the *Financial Times*, President Mbeki criticised the excessive charges made by Telkom for use of the undersea cable.[75] Almost immediately, Papi Molotsane resigned as Chief Executive Officer of Telkom SA.[76] A few weeks later, Telkom reduced the price of its International Private Leased Circuits (IPLCs) by up to 30%.[77] This was on the eve of the announcement by the Minister that the regulator must designate the cable landing stations as essential facilities and open access to other operators, in effect opening the undersea cables.[78]

FIGURE 6: MONTHLY CHANGES FOR 1.5MBPS IPLCS (ZAR)



74 Alcatel (2002) Press release: Alcatel is awarded US$ 33 million contract to upgrade SAT-3/WASC with terrestrial and submarine optical solutions (23 April 2002).
Alcatel (2005) Press release: Alcatel refuerza las comunicaciones entre Africa, Europa y Asia con una importante actualización de las redes submarinas (1 September 2005).

75 The cable in question is the SAT-3. *Southern Africa Telecommunications 3*. The interview was:
Lionel Barber, editor of the *Financial Times*, and Alec Russell, Southern Africa correspondent, interviewed President Thabo Mbeki in his official residence in Pretoria on Sunday 1 April. *Financial Times* published: 3 April 2007 08:13.
http://www.ft.com/cms/s/c5b97158-e12f-11db-bd73-000b5df10621.html

76 Paul Vecchiato. Telkom's CEO quits. *IT Web*, 5 April 2007.
http://www.itweb.co.za/sections/telecoms/2007/0704052045.asp

77 Hilton Tarrant. Telkom slashes international bandwidth prices. *Money Web*, 22 May 2007.
http://www.moneyweb.co.za/mw/view/mw/en/page39?oid=92631&sn=Detail

78 Government Notice 469. Electronic Communications Act (36/2005): Notice inviting comments on proposed policies and policy directions. *Government Gazette* No 29923, 25 May 2007.

The high costs of IPLCs are largely attributable to the half circuit provided by Telkom. The ratio of half-circuit prices from Africa to North Atlantic destinations has been stated as, at least, 4:1 and perhaps as high as 8:1. The cost of the South African half-circuit is much more expensive than the cost of the European or North America half-circuit.[79]

The club or consortium agreement on the SAT-3 cable ended in May 2007, though no information is available about the future arrangements. Other cable projects have been discussed, but nothing is expected to be operational until 2009 or later.

Two minor players

Sentech was created by Act of Parliament in 1996.[80] It was given two telecommunications licences, one as a carriers' carrier, providing limited wholesale international services, and the other as a multi-media carrier, supplying business and consumer broadband services.

Sentech offers a service equivalent to a leased line under the BizNet Xpress brand using proprietary wireless technology, allowing speeds of up to 2Mbits/sec.[81] It is available only in:

- Johannesburg;
- Pretoria;
- Cape Town;
- Durban;
- Nelspruit .

As of early 2007 Sentech counted some tens of lines, less than 0.1% of comparable lines provided by Telkom. Moreover, some of these were being used for trials by service providers.

The inability of Sentech to grow in the business market and with a rival service available from Neotel and soon, possibly others, suggests it has substantially failed

79 Interviews with service providers.
See also: Tracy Cohen & Russell Southwood (2004) An overview of VoIP regulation in Africa: policy responses and proposals. London, Commonwealth Telecommunications Organisation.

80 Sentech Act 1996. No 63 of 1996.

81 This is sold under the BizNet Xpress brand offering a circuit equivalent to a leased line from 96Kbits/sec to 2M bits/sec, it uses the 3.5GHz band with a range of up to 25km. Sentech has less than one dozen base stations.
http://www.sentech.co.za/index.php?module=ContentExpress&func=display&ceid=238
See, for example, the press release: Sentech further expands broadband wireless network with Cambridge Broadband's VectaStar equipment. *Cambridge Broadband Networks*, 9 November 2005.
http://www.cambridgebroadband.com/mi09nov05.htm

as a supplier to corporations and VANS. It is doubtful that any potential corporate customer would view Sentech as a plausible supplier over the medium term. Moreover, Sentech faces massive financial and technical challenges in the switchover from analogue to digital television and in meeting the heavy network demands associated with the coverage of the FIFA World Cup in 2010.

The creation of Neotel as the Second Network Operator (SNO) has been a protracted and painful process. The search for a 'strategic investor' took several years, until the Tata Group was found.[82] The various 'partners' fought with each other in private, in public and sometimes in the courts. The Minister pushed together two unwilling consortia, adding to the problems. Each delay meant that the business plan had to be revisited.

From extensive press briefings by Neotel and Telkom, there seems to be some measure of agreement that the former will be able to take no more than 10% market share from Telkom, across the fixed telecommunications market. This has been reduced from 15% and the period required has been extended from three to five years. The first contract was with the State Information Technology Agency (SITA) for the provision of a bandwidth on demand service for Government Common Core Network (GCCN).[83]

Neotel has acquired certain assets from Transtel and Eskom and is leasing others through InfraCo, a new state-owned enterprise.[84] This gives it a core network, though often far from the locations where business customers are to be found. Neotel has admitted it will have to rely on Telkom for tail circuits to reach customers in most locations.[85] This is consistent with experience from other countries where the local access network of the incumbent operator remains an essential facility for the supply of tail circuits for business customers. The cost of constructing dedicated links to specific locations offers very few economies of scale to new entrants. Incumbent operators have general networks that are already close to almost all business locations.

82 The Tata Group is a very large conglomerate based in India, but with global interests. It has substantial involvement in telecommunications through VSNL International.

83 Neotel was to provide optical fibre transmission links to the main sites using STM-1 or STM-4 interfaces. Press Release. SITA switches to Neotel. 24 May 2007.

84 Department of Public Enterprise. Government Notice 567: Notice inviting comments on a proposal to introduce the Broadband Infraco Bill. *Government Gazette* No 29879, 11 May 2007.
This became the Broadband Infraco Act, No 33 of 2007.

85 Competition Tribunal (2007) Telkom SA Ltd and Business Connexion Group Ltd. Case No: 51/LM/Jun06, Pretoria, Competition Tribunal.

The managed introduction of additional fixed network operators has been characterised by weakness and delay. Interventions by ministers have created uncertainty and sometimes confusion. The appearance of Infraco was without any prior public debate and with unclear and shifting objectives.

Self-provisioning

The Minister announced steps towards further liberalisation, lifting restrictions in the Telecommunications Act, to take effect from February 2005.[86] In particular, VANS licensees were to be allowed to carry voice traffic.

Telkom had historically insisted on its right to be the exclusive supplier of any telecommunications capacity that crossed the boundary of any property or carried voice telephony.[87] MNOs and VANS licensees were now to be allowed to self-provide telecommunication facilities or to obtain them from any other operator licensed to provide such facilities, including other MNOs and VANS licensees. The prohibition on the resale of excess capacity was lifted, including private or corporate networks. Neotel was given the same status as Telkom as a supplier of infrastructure.

Telkom has supplied a great many leased lines to the mobile network operators, with all three MNOs being substantial customers (see Figure 7). The operators had been bound to use leased lines provided by Telkom.[88] These had always been provided below list price, but the discounts were substantially increased just when the MNOs were considering exercising their new powers to construct their own lines or may have been considering switching to Neotel.[89] Initially the MNOs concentrated on the construction of 3G and 3.5G radio networks utilising their expertise in the design and construction of the radio access networks. However, by mid-2007, the MNOs were busy constructing their own networks.

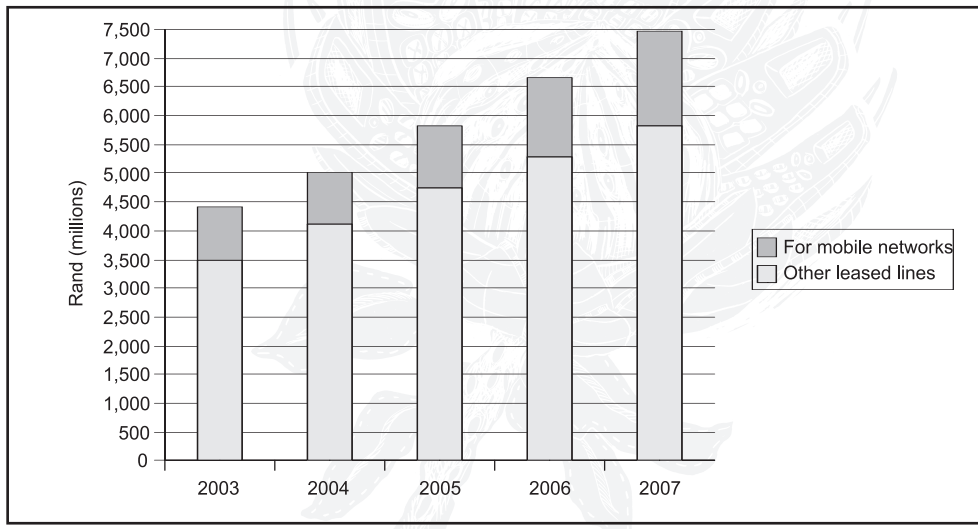
86 Department of Communications. Notice 1924 of 2004. Determination of dates in terms of the Telecommunications Act. *Government Gazette* No 26763, 3 September 2004.

87 Telkom tried but failed to have the use of Internet Protocol (IP) declared part of its monopoly.

88 Notice 1078 of 1993. *Government Gazette* No 15232, 29 October 1993.

89 Testimony of Mike Brierley at the Competition Tribunal on 19 May 2007 in the matter of the merger of Telkom SA and BCX.

FIGURE 7: TELKOM DATA SERVICES REVENUES[90]



Lines supplied to MNOs had been subject to the condition that they could be used only for mobile telecommunications traffic and not for fixed network traffic. For example, MTN Network Solutions had to construct a separate network to supply customers of its fixed Virtual Private Network (VPN) services, despite already operating a very large GSM and 3G network comprised of leased lines from Telkom.[91] There appear to have been discriminatory discounts on the condition that operators not compete against Telkom in its fixed line business.

There was some controversy over the interpretation of the Ministerial Notice in respect of whether VANS licensees were entitled to self-provide facilities. A press release issued by the Minister in January 2006 – but necessarily carrying less weight than a gazetted notice – cast doubt on this right.[92] As late as February 2007, the Internet Service Providers Association (ISPA) issued an appeal to the Minister to clarify the right to self-provisioning of infrastructure.[93] However, neither the Internet Service Providers Association (ISPA) nor individual ISPs were willing to take the Minister to court to clarify the meaning of the Notice.

90 Telkom Financial Review, 2006, p. 106, and Telkom Group annual results March 2006, p. 16.

91 Testimony of Mike Brierley at the Competition Tribunal in the large merger Telkom and BCX.

92 Ministry of Communications. Media statement. Matsepe-Casaburri – clarifying some ministerial determinations, 31 January 2005.

93 http://www.ispa.org.za/news/press220207.shtml

ICASA could not implement the Notice because the Minister refused to approve VANS regulations that referred to self-provisioning. ICASA eventually resolved this by omitting any reference to self-provisioning in the regulations.[94]

The changes to the licences being made under the ECA may result in more service providers being allowed to construct infrastructure and to resell excess capacity. ICASA published a provisional framework for the conversion of licences suggesting that the new licences could be generous.[95] Article 93 of the Act requires existing licence holders to receive a new licence on "no less favourable terms" than their existing licence.

Gateway Communications expected to be able to convert its existing VANS licence into licences for Electronic Communication Service (ECS) and Electronic Communication Network Service (ECNS) licences.[96] If this happens it and other large operators would certainly be allowed to construct their own infrastructure. However, given the considerable costs, it would be likely to be only a few of the larger players who would attempt to do this, such as:

- DataPro;
- Gateway;
- Internet Solutions;
- MTN Network Solutions; and
- Verizon.

Neotel and Telkom have been united in opposing the wider rights to construct infrastructure since it would undermine their positions and the politically determined duopoly.

The draft Ministerial direction of May 2007, set criteria under which ICASA might issue ECNS licences enabling the construction of infrastructure.[97]

94 Government Notice. R. 490. Regulations for value-added network services. *Government Gazette* No 27608, 20 May 2005.

These supplemented the previous regulations:

Government Notice R 1384. Regulations relating to the manner in which applications for Value Added Network Service (VANS) licences are to be made. *Government Gazette* No 25519, 1 October 2003.

95 Notice 244. ICASA Conversion of licences in terms of Chapter 15 of the Electronic Communications Act (No 36 of 2005). *Government Gazette* No 29687, 7 March 2007.

96 Paul Vecchiato. Gateway ups bandwidth capacity. ITWeb, 26 April 2007. http://www.itweb.co.za/sections/telecoms/2007/0704261037.asp

97 Government Notice 469. Electronic Communications Act (36/2005): Notice inviting comments on proposed policies and policy directions. Government Gazette No 29923, 25 May 2007.

Despite the confusion and uncertainty over the legality of self-provisioning and the attempts by Telkom to contain rivals there is now evidence of alternative infrastructure. However, it is too early to determine whether this competition extends beyond core long-distance routes and a few metropolitan fibre rings.

Electronic Communications Act

The Electronic Communications Act of 2005 was the result of several years of discussion in Parliament over various drafts of a Convergence Bill. The Act implemented a series of reforms intended to liberalise the telecommunications sector. In part, the Act drew on methods from the European Union legislative package.[98] However, South Africa had put in place only a fraction of the pro-competitive steps taken by EU member states. Notably, it had yet to introduce cost-orientation for incumbent operators providing leased lines, to open their provision to competitors or to introduce effective reporting.

The Act empowered ICASA to define relevant markets and then to regulate operators which had Significant Market Power (SMP), defined as being one or more of the following:[99]

- dominant;[100]
- having control over essential facilities; and
- possessing a vertical relationship that could harm competition.

ICASA was to define the relevant markets, to determine the market shares and make a forward looking assessment of market power. Based on this, it would then impose one or more of the following "pro-competitive terms and conditions":

- obligation to act fairly in requests for access, services and facilities;
- obligation to act timeously;
- prohibition against discrimination;
- obligation to publish information on terms and conditions;
- obligation to maintain separate and specified accounts;

98 Paul Nihoul & Peter Rodford (2004) *EU electronic communications law: competition and regulation in the European telecommunications market*. Oxford, Oxford University Press.

99 Article 67 of the *Electronic Communications Act*.

100 The definition for this is taken from Section 7 of the Competition Act 1998:

A firm is dominant in a market if –

(a) it has at least 45% of that market;

(b) it has at least 35%, but less than 45%, of that market, unless it can show that it does not have market power; or

(c) it has less than 35% of that market, but has market power.

- price controls; and
- obligation to keep records.

ICASA began the process of defining markets in January 2007, publishing a consultation document on termination markets.[101] It then announced its intention to define markets and the proposed remedies for leased lines and other fixed network markets.[102] This consultation document raised a very wide range of issues including:

- opening access to the undersea cable;
- Carrier Selection (CS);
- Carrier Pre-Selection (CPS);
- Partial Private Circuits (PPCs);
- Local Loop Unbundling (ULL);
- Wholesale Line Rental (WLR); and
- Bitstream Access.

These regulatory "products" were likely to be fiercely opposed by Telkom. Tackling so many contentious problems at once tested the resources available to ICASA and increased the risks of interlocking appeals. Accounting separation and the creation of LRIC models would also be time-consuming. Draft market definitions were published in late 2007, including domestic and international leased lines.[103] These were followed by a draft measure for facilites leasing.[104]

The Minister and ICASA have powers under Section 43 of the Act to regulate access to undersea cable and landing stations. ICASA has proposed to designate undersea cable landing stations as essential facilities.[105] This is clearly a matter of some priority, given the concerns expressed by the President and imminence of the FIFA World Cup. However, it is unclear how quickly or indeed how ICASA will act.[106] It has been complicated by interventions by the Department of Communications, seeking to block commercial rivals and those considered to have insufficient South African ownership.

101 ICASA. General Notice 78: Intention to define relevant wholesale call termination markets in terms of section 67 (4). *Government Gazette* No 29568, 29 January 2007.

102 ICASA. General Notice 529: Intention to define relevant end to end leased lines and other wholesale markets in terms of section 67 (4). *Government Gazette* No 29863, 3 May 2007.

103 ICASA. General Notice 1809: Electronic Communications Act (36/2005): Regulations pursuant to section 67(4). *Government Gazette* No 30622, 21 December 2007.

104 ICASA. General Notice 1794: Electronic Communications Act (36/2005): Electronic Communications Facilities Leasing Regulations. *Government Gazette* No 30605, 24 December 2007.

105 ICASA. General Notice 1800: Electronic Communications Act (36/2005): Regulations prescribing a list of essential facilities and matters related thereto. *Government Gazette* No 30612, 24 December 2007.

106 Steve Esselaar, Alison Gillwald and Ewan Sutherland (2007) The regulation of undersea cable landing stations. *LINK Centre Policy Paper*. Johannesburg, University of the Witwatersrand.

The changes required by the ECA have imposed a very heavy burden on ICASA, of which the work on leased lines is only a small part. The questions that arise concern the priority assigned to the work and the time it is likely to take to complete the processes, including the seemingly inevitable appeals. This could be worse, if tied up with disputes over unbundling regulations. The process is more likely to take years, than months.

Conclusion

The government of South Africa has tried unsuccessfully to manage liberalisation, with the intention of delivering more accessible and affordable telecommunications services to support broad economic goals.

Leased lines are a primary input and cost factor for mobile network operators, value-added and Internet service providers and are the basic building blocks of corporate networks. Yet the supply of that infrastructure has been poorly managed for over a decade. International comparisons suggest the prices are damagingly high for the economy, while even Telkom admits the quality has not been good.[107]

The prices of leased lines have not been controlled effectively, having initially been allowed to rise to levels far in excess of costs and although they have since declined, it has been very slow, so that they are still far from being cost-oriented. Telkom was able to leverage its monopoly in the supply of infrastructure to extract substantial profits from downstream operators, service providers and businesses. Moreover, there was no regulatory effort to ensure that an adequate quality of service was delivered without discrimination to all customers or even to monitor what was being provided.

The failure on the one hand was not to introduce competitors and on the other was not to determine the true level of costs. The Minister delayed the admittance of competitors, while the regulator lacked the necessary independence, resources, powers of enforcement and, most especially, information to regulate the incumbent. The government and the minister created the system and then further compromised the limited capability of ICASA by modifying its decisions.

Under the Electronic Communications Act there is some prospect of prices being brought towards cost, though only over a period of years. ICASA can now adopt regulations without the approval of the minister, though she may still issue directions which could have very similar effects.

The competition that exists is limited to core routes between major cities. Local access remains the effective monopoly of the incumbent.

107 Senior Counsel for Telkom before the Competition Tribunal in Telkom and BCX.

Telkom has left no stone unturned to render regulation ineffective. It has lobbied assiduously, taking advantage of the substantial Government shareholding. It has contested decisions to have them overturned or to delay their implementation. It has priced its own access lines differently and, in effect, more cheaply than those it provides to rivals. It thwarted the development of a wholesale market by pushing customers of service providers to buy access lines directly from itself

The introduction of self-provisioning of leased lines was inept, failing to encourage investment in infrastructure. The Minister declared that it was permitted for VANS operators to do so. She then appeared to withdraw permission in order to appease Neotel which was finally becoming a plausible second network operator. Then ICASA appeared to give permission by proposing wide-ranging licences to VANS providers. Then the Minister intervened to limit this possibility. A rival Minister created a competing state-owned operator to construct telecommunications infrastructure. Telkom told the Competition Tribunal that it supported self-provisioning while filing diametrically opposed views with ICASA. The degree of regulatory uncertainty achieved has been quite remarkable, with the prospect of further litigation before any new licences and regulations are finally settled.

The adoption of parts of the regulatory approach developed in the European Union – of the definition of relevant markets, their subsequent analysis and the imposition of pro-competitive measures on dominant operators – appears to be premature and overly ambitious. Moreover, that approach was designed for markets where liberalisation was much further advanced.

The transitional measures in South Africa appear dangerously weak and the risks of regulatory delays and failures are considerable. It seems likely to take years rather than months to bring fixed networks under effective regulation. The only alternative would be to create a new statute with genuinely pro-competitive measures that would not require further wasted years of implementation and litigation. ❑

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For helpful comments and critical questions: Alison Gillwald, Steve Esselaar and Tracy Cohen, variously of the LINK Centre and ICASA. Also to Kasturi Moodilayar of the Competition Commission and to Ray Webber and Mike van den Bergh of CUASA. Finally to the comments from two anonymous reviewers.

Date	*Gazette*	Provisions	X
13 March 1996	16995	White Paper on Telecommunications Policy.	X
15 November 1996	-	Telecommunications Act 1996.	-
		Section 45 – Power to regulate fees and charges.	-
		Section 96 – Power for the Authority to make regulations.	
7 May 1997	17984	Minister – Any rate regime during the 'Exclusivity Period' not to have a 'material adverse impact' on Telkom or on its ability to fulfill the achievement of the roll-out and the new line roll-out targets. (Terms as defined in the Telkom Licence.)	-
7 May 1997	17984	Minister – Imposition of CPI-X price cap on a basket of prices. Published price list to be the maximum allowable charges. Individual basket elements limited to an increase of CPI + 20%.	1.5
7 May 2000	-	SATRA becomes responsible for price control regulations.	-
11 May 2000	-	Independent Communications Authority of South Africa Act.	-
July 2000	-	ICASA – assumes the powers previously held by SATRA.	
22 December 2000	21925	ICASA – Review of the price control system.	3.0
23 April 2001	22240	ICASA – Proposal to limit price increases of 'elements' to CPI – X plus 5% (instead of 20%). Creation of a separate residential sub-basket.	5.0
23 April 2001	22241	ICASA – Draft price control regulations.	5.0
26 November 2001	22870	Minister – Price control regulations. Creation of a separate residential sub-basket. The ICASA proposal, except for the productivity factor.	1.5
20 November 2001	22889	Telecommunications Amendment Act.	-
		Amended Article 45 (2) to allow price control regulations beyond the initial three year period.	
7 August 2002	23726	ICASA – Consultation on draft price regulations. The carry over to be limited to one year.	1.5
24 October 2002	23986	Minister – Price control regulations.	
8 November 2004	26977	ICASA – Consultation on price control regulations, based on the first regulatory accounts filed by Telkom. Telkom had achieved a reduction of average prices over four years of 6% in real terms (after taking account of inflation). Addition of ADSL to the basket. Switch from CPI to CPI-X.	4.0
9 November 2004	26979	ICASA – Draft price control regulations.	4.0
10 December 2004	27080	ICASA – Invitation to public hearing on price controls.	-
9 February 2005	27277	ICASA – Draft price control regulations.	3.5
18 February 2005	27284	ICASA – Revision of the draft price control regulations.	3.5
30 June 2005	27752	Minister – Price control regulations.	3.5
6 July 2005	27771	Minister – Withdrawal of 27752.	-
6 July 2005	27772	Minister – Price control regulations. To run from 2006 to 2008. Continued use of CPI.	3.5
4 August 2005	27875	Minister – Minor amendments to 27772.	-
18 April 2006	28743	Electronic Communications Act.	-
		Section 97 repealed the Telecommunications Act 1996.	
		Section 67(7)h includes price controls as one of the pro-competitive measures that ICASA might impose on an operator identified as having Significant Market Power on a relevant market. No longer to be approved by the Minister.	
3 May 2007	29863	ICASA – Consultation on the designation of relevant market for fixed networks, including leased lines.	-

X = productivity factor used in Equation 1.