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CONTENTS • INHOUD

GENERAL NOTICES

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NOTICE 246 OF 2005

ICASA

INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA

NOTICE IN TERMS OF SECTION 96 (4) OF THE TELECOMMUNICATIONS ACT, NO. 103 OF 1996 ("THE ACT") READ WITH SECTION 45 OF THE ACT INVITING REPRESENTATIONS WITH REGARD TO THE REVIEW OF TELKOM'S PRICE CONTROL.

The Independent Communications Authority of South Africa ("the Authority") hereby provides notice and invites comment on the draft regulations for review of Telkom's Price Control under section 96 (4), read with section 45, of the Telecommunications Act No. 103 of 1996, as amended.

Interested persons are hereby invited to submit written representations, including an electronic version of the representation in Microsoft Word, of their views on the Review of Price Control in Public Switched Telecommunications Services by Tuesday, 22 March 2005. The Authority will not conduct public hearings, however, written representations will be considered in finalising the final regulations.

All written representations submitted to the Authority pursuant to this notice shall be made available for inspection by interested persons from Wednesday 23 March 2005 from the ICASA Library and copies of such representations and documents will be obtainable upon payment of a fee.

At the request of any person who submits a written representation or document pursuant to this notice, the Authority may determine whether such representation or document, or portion thereof, relates to the financial capacity or business plan of any person, or to any other matter reasonably justifying confidentiality, in which event such representation or document shall not be made available for inspection by members of the public. If the request for non-disclosure to public is refused, the person making the request will be allowed to withdraw the representation or document in question.

The Authority has limited the scope of comments to be made only to the draft regulations and the notes on the model are published for information purpose as how an "X" factor of 3.5% was calculated.

Please forward your written comments to:

Khulile Boqwana and Mankopane Nkopane

Policy Analysis & Development

ICASA, Private Bag X1, Marlboro, 2063; or

ICASA, Block B, Pill Mill Farm, 164 Katherine Street, Sandton, Gauteng.

Where possible, written representations should also be emailed to Kboqwana@icasa.org.za and MNkopane@icasa.org.za

SCHEDULE

1. **Definitions**

In these regulations a word or expression shall have the meaning assigned to it in terms of the Telecommunications Act, 1996 (Act No. 103 of 1996) as amended, and,unless the context indicates otherwise –

"ADSL" means Asynchronous Digital Subscriber Line

"average residential bill" is a measure of the average monthly bill for residential customers, where average is defined according to the median central tendency measure obtained through a statistical sampling approach developed by Telkom and assented to by the Authority.

"average unit tariff" is defined as the total revenue raised for a service divided by the units of service supplied over the Price Control Period.

"basket services" means the telecommunication services listed in Schedule A to which price control regulation applies.

"business day" means any day other than a Saturday, Sunday or Public holiday.

"customer premise equipment" means an item of approved equipment which does not form part of the PSTN but is connected to Terminal Connection Equipment, whether fixed or portable, and by means of which signals are initially transmitted or ultimately received.

"effective date" means the 1 August 2005.

"emergency" means an emergency of any kind, including without limitation, any circumstance whatsoever resulting from major accidents and natural disasters.

"exchange line" means a local line provided to connect a Terminal connection point to the Local Exchange.

"fixed to mobile call" means a call originating on an exchange line that terminates on a mobile network.

"home branded ADSL services" means Asymmetric Digital Subscriber line service providing high-speed access to Internet Service Providers which Telkom's offers to its residential subscribers.

"ISDN" means Integrated Services Digital Network, which is defined as Switched Services Digital Network providing end-to-end digital connection for simultaneous transmission of voice and/or data over multiple multiplexed communication channels and employing transmission that conforms to internationally defined standards.

"local exchange area" means a geograpnically defined and limited area, as defined by the exchange area code allocated by the Authority for that area, to which all exchange lines are connected and which are served by the same local exchange.

"local exchange" means a facility in the public switched telecommunications network to which user lines are connected within a local exchange.

"mobile retention" means the revenue retained from the revenue collected for fixed to mobile calls.

"mobile termination" means the revenue transferred by Telkom to mobile operators for calls made from Telkom's fixed network to mobile networks.

"n" means the number of services in the overall basket or residential sub-basket.

"price control period" means the period commencing on 1 August 2005 subsequent periods commencing on the anniversary of such date.

"price control year" means a calendar year period during which the approved tariffs shall be in force.

"**PSTS"** means Public Switched Telecommunications Services.

"public pay telephone" means an un-manned device made available to the general public for use, and which contains a means of accepting any form of payment for these services.

"public payphone telephone service" means the provision of telecommunication service by means of Public Pay telephone service and includes the installation, maintenance and bringing into operation of one or more Public Pay Telephones, which are connected to the exchanges or local network of a public switched telecommunication service licensee in any area of the Republic.

"RC" means Revenue Change.

"residential sub-basket" means telecommunication services made available to residential customers including line rental, local calls, national calls and international calls. Payphones will also form part of this sub-basket.

"t" means the current year in the Price control period.

"terminal connection point" means any point within an item of Terminal Connection Equipment at which signals are conveyed to or from one or more items of customer premises equipment.

2. **Application of these regulations**

(a) These regulations shall be applicable to fees and charges ("prices") payable, pursuant to the Telecommunications Act as amended, to Telkom for the telecommunications services listed in Schedule A ("the basket services")' and as such may be modified from time to time in accordance with the provisions of these regulations.

(b) These regulations shall be effective as from the 1 August 2005 and shall remain inforce until 31 July 2008.

(c) The Authority shall review the price cap regulations two years from the commencement date to assess whether there is insufficient competition in the market and thus the continued need for price controls.

3. **General Price Control Formula**

(a) Telkom shall ensure that in each price control year, the price charged for the basket services shall be set so as to satisfy the criteria in formulae (1) and (2) set forth below:

$$(RC_{(t)}/RR_{(t-1)}) \times 100 \leq \Delta\, CPI_{(-1)} - X_{(t)} \qquad (1)$$

$$X_{(t)} = 3.5\ \% \qquad (2)$$

Subject to the following definitions:

(t): the current year in the price control period

(t-1): the preceding year

$X_{(t)}$: the productivity factor

$\Delta CPI_{(t-1)}$: the year-on-year change in the Consumer Price Index, compiled and published by Statistics South Africa, which is defined as follows:

$$\Delta CPI_{(t-1)} = ((CPI_{(t-1)} - CPI_{(t-2)})/(CPI_{(t-2)}))\ 100$$

Where:

(t-2): the year preceding (t-1)

$CPI_{(t-2)}$: the Consumer Price Index for the month of May the year (t-2).

$CPI_{(t-1)}$: the Consumer Price Index for the month of May of year (t-1)

$RC_{(t)}$: the total Revenue Change, which is calculated as follows:

$$RC_{(t)} = \Sigma_{i=1 \text{ to } n} RC_{(i,t)}$$

Where:

n: the number of services in the basket

$RC_{(i,t)}$: the revenue change of the i-th service in year (t), which is calculated as follows:

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

Where:

$RR_{(i, t-1)}$: the Reported Revenue of Telkom for the i-th service in the basket from the relevant financial year ended 31 March commencing with 31 March, 2004 for the first year and each subsequent financial year ended 31 March for the duration of the Price control period.

$\Delta P_{(i, t)}$: the percentage change in the price for the i-th service in year (t) listed in Schedule A.

For a service i with only a variable component to price, this is defined as follows:

$$\Delta P_{(i, t)} = ((p_{(i,t)} - p_{(i,t-1)})/ p_{(i,t-1)})\ 100$$

$p_{(i,t-1)}$ is the published charge made by Telkom for a specific product or service i at the beginning of the Price Control Year excluding any discounts offered by Telkom; and

$p_{(i,t)}$ is the published charge made by Telkom for the specific product or service i at time t during the Price Control Year excluding any discounts offered by Telkom.

For a service listed in Schedule A which has both a fixed and variable component to price, the percentage change in the price for the i-th service in year (t) is defined as follows:

$\Delta P_{(i,\ t)}$ = [(Average unit tariff of the i-th service at the end of year (t))/ (Average unit tariff of the i-th service at the end of year (t-1)) -1] 100;

where the above is calculated to exclude the effect of discounts offered by Telkom.

$RR_{(t-1)}$: the reported revenue of Telkom, in year (t-1), of all the service in the basket, and is calculated as follows:

$$RR_{(t-1)} = \Sigma_{i=1 \text{ to } n} RR_{(i,\ t-1)}$$

4. **Residential sub-basket**

(a) Telkom shall implement a residential sub-basket consisting of the following elements: Line rental, Local calls, National calls, International calls and "Home" branded ADSL services or their equivalent. Payphones will also be subject to this sub-cap.

(b) Telkom will determine an Average Residential Bill, which will be used in determining the level of increase applicable to residential customers.

(c) The weighted-average annual rate increase for the sub-basket of basic residential services shall be set to satisfy the criteria in the expression below:

$\Delta CPI_{(t-1)}\text{-}X_{(t)}$

where $X_{(t)} = 3.5\%$

5. Carryover

Telkom shall be allowed to carry over to the next price control year any unused part of the allowed tariff increase. The unused part of the allowed tariff increase in both the general and the residential baskets will lapse if not used in the next price control year.

6. Tariff Filing

(a) Telkom shall file the rates as well as the relevant terms and conditions with the Authority pursuant to which it proposes to offer Public Switched Telecommunication Services that are subject to these regulations.

(b) Such tariffs shall be filed at least thirty (30) business days before the proposed date on which such rates are to become effective in a form specified by the Authority.

(c) If the Authority does not deliver to Telkom a notice in writing of disapproval at least fifteen (15) business days before the proposed effective date of the rates, the rates shall be deemed approved.

(d) Telkom must also file details, in accordance with a methodology agreed by ICASA and Telkom, about the effect the proposed rates would have on the average residential bill.

(e) The Authority may disapprove the proposed tariffs only where;

i) The calculations contain mathematical errors; or

ii) The terms and conditions violate applicable laws, including, without limitation, policy directions, regulations and the Rate Regime, in a material respect.

7. **Changes to the Basket Services**

(a) Subject to subsections (b) and (c) below, Telkom shall be entitled to add or replace telecommunication services in respect of the basket at services only if such telecommunication services are:

(i) Wholly or substantially in substitution of an existing telecommunication service.

(b) Telkom shall notify the Authority in writing of its intention to add or replace a telecommunication service in respect of the basket at services pursuant to subsection (a) above at least thirty (30) Business Days before the proposed date on which such service will be implemented.

(c) The Authority shall inform Telkom in writing of its approval or disapproval of changes to the basket services proposed by the licensee in terms of subsection (a) above at least fifteen (15) business days before the proposed date on which such service will be implemented.

8. **Maximum Prices**

(a) With effect from the effective date, prices may not exceed the limits set pursuant to these regulations.

(b) Prices for any of the services in the residential sub-basket and for leased lines up to and including lines of capacity 2Mbps and for the rental and installation of business exchange lines may be adjusted by Telkom from time to time during the price control period in which it is to apply in accordance with these regulations and the provisions of its licence, but may not be increased in real terms by a margin of more than five percent (5%) based on the Consumer Price Index for May of year (t-1) except where specific approval has been received from the Authority for a higher margin of increase. Specific approval for increases of more than 5% in real terms will only be considered in exceptional instances where a clear case on cost grounds has been made by Telkom to the Regulator.

9. **In year price changes**

(a) For all services not listed in Section 8 above, Telkom will be permitted to file price changes at any time during the price control period, subject to the provisions of section 6 above.

(b) For the purpose of complying with paragraph 9(a), Telkom shall take all reasonable steps to secure that the revenue it accrues as a result of all relevant individual charge changes during any Price Control Year shall be no more than that which it would have accrued had all of those changes been made at 1 January in the Price Control Year. For the avoidance of doubt, this obligation shall be deemed to be satisfied where, in the case of a single change in charges during the Price Control Year, the following formula is satisfied:

$$RC_{(i,t)}(1\text{-}D) \leq TRC$$

Where D is the elapsed proportion of the Price Control Year, calculated as the date on which the change in charges takes effect, expressed as a numeric entity on a scale ranging from 1st August = 0 to 31st July = 364, divided by 365. In the case of a leap year it is calculated as the date on which the change in charges takes effect, expressed as a numeric entity on a scale ranging from 1st August = 0 to 31st July = 365, divided by 366; and

TRC is the target revenue change required in the Price Control Year to achieve compliance with Section 3, calculated by the Percentage Change required in the Price Control Year to achieve compliance with Section 3 multiplied by the revenue accrued during the Relevant Financial Year.

(c) For the avoidance of doubt, for all other services not included in 9(a) above, Telkom is permitted to make one filing for a price control year.

10. **Value Added Taxes**

Prices set pursuant to these regulations are exclusive of any value-added tax, which may be levied in addition to the Prices.

11. **Publication of Prices**

(a) Publication of the details of tariffs shall be made by:

i) Sending a copy of the relevant details to the Authority;
ii) Placing the relevant details in every registered office of the licensee so that it is available for inspection, free of charge, by members of the public, as soon as practicable after sending a copy of them to the Authority;
iii) Sending a copy of the relevant details (or extracts of them as may, in the circumstances, be appropriate) to any person in the Republic who requests a copy; and
iv) including a pro forma statement indicating the effect of the proposed increases on the bills to customers with the statements to customers prior to the implementation of such tariffs, where possible;

12. Repeal of the Existing Regulations

These regulations repeal and replace the regulations published in Government Notice No.R1333 of Government Gazette No. 23986 of 24 October 2002.

SCHEDULE A

Basket services

The following services shall be comprised in the basket services:

1. Installation Services

1.1 The installation and bringing into service of exchange lines to residential customers.

1.2 The installation and bringing into service of exchange lines to business.

1.3 The installation and bringing into service of direct dialling inward/outward exchange lines to business customers:

1.3.1 analogue lines;

1.3.2 2 MBPS digital lines.

1.4 The installation and bringing into service of ADSL lines:

1.4.1 "Home" branded ADSL lines;

1.4.2 All other ADSL lines.

1.5 The installation and bringing into service of ISDN exchange lines:

1.5.1 basic rate access;

1.5.2 primary rate access.

1.6 The installation and bringing into service of exchange lines to switched telematic services:

1.6.1 telex services;

1.6.2 Saponet-P services.

2. Rental Services

2.1 The provision and maintenance of exchange lines to residential customers.

2.2 The provision and maintenance of exchange lines to business customers.

2.3 The provision and maintenance of direct dialling inward/outward exchange lines to business customers:

2.3.1 analogue lines;

2.3.2 2 MBPS digital lines.

2.4 The provision and maintenance of ADSL lines to residential customers, branded as "Home".

2.5 The provision and maintenance of ADSL lines to business customers.

2.6 The provision and maintenance of ISDN exchange lines to business customers:

2.6.1 basic rate access;

2.6.2 primary rate access

2.7 The provision and maintenance of access lines to switched telematic services:

2.7.1 telex services;

2.7.2 Saponet-P services.

2.8 The provision and maintenance of point-to-point telecommunication circuits leased to customers for the provision of private circuits or for use in Private Telecommunication Networks:

2.8.1 fixed rental element, if any;

2.8.2 distance dependent rental element, if any;

2.8.3 capacity/bandwidth dependent rental element, if any;

but excluding any circuits made available to an operator in terms of any agreement for interconnection services.

3. Call Services

3.1 Calls made to and from terminal connection points within the same local exchange area (local calls) served by an automatic or manual exchange:

3.1.1 from an item of customer premises equipment;

3.1.2 from a public pay telephone

3.2 Calls made from a terminal connection point in a local exchange area served by a manual or an automatic exchange to a network providing a mobile telecommunication service:

3.2.1 from an item of customer premises equipment;

3.2.2 from a public pay telephone

3.3 Calls made from a terminal connection point in a local exchange area served by an automatic or manual exchange to a terminal connection point in another local exchange area via the national long-distance telecommunication network:

3.3.1 from an item of customer premises equipment, per each long distance metering band;

3.3.2 from a public pay telephone, per each long distance metering band.

3.4 International calls made from a terminal connection point in a local exchange via the international telecommunication network per country of destination.

3.5 Calls made by means of the networks providing switched telematic services:

3.5.1 Telex calls per each distance band;

3.5.2 Saponet-P services.

3.6 Directory information services

3.7 Telephone operator services

4. Excluded Services

The following services are not included in the basket services:

4.1 Interconnection Services;

4.2 Value Added Network Services;

4.3 Mobile Cellular Telecommunication Services;

4.4 Emergency services;

4.5 Customer Premises Equipment; and any other services that may be eliminated by the Authority from the basket services from time to time.

NOTICE 247 OF 2005

INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA (ICASA)

NOTICE PROVIDING CLARIFICATION TO NOTICE 246 OF 2005 GOVERNMENT GAZETTE NO 27284 PUBLISHED 18 FEBRUARY 2005 ("THE NOTICE") INVITING COMMENTS ON THE REVIEW OF TELKOM'S PRICE CONTROL UNDER SECTION 96 (4), READ WITH SECTION 45, OF THE TELECOMMUNICATIONS ACT NO. 103 OF 1996, AS AMENDED.

With reference to the above notice as published on 09 February 2005, the Authority has decided to disclose further details about the modeling framework used to determine the value of X in the draft PSTS price review.

ICASA believes in the interest of transparency and good regulatory practice that these details are made public whenever possible. ICASA has decided therefore to publish this short note, which provides further details about the methodology used to calculate X.

ICASA Price control model

1. This document consolidates the previous documentation (see Annexes 1 and 2) made available by ICASA on the model (now termed the 'Old Model') used in the review of Telkom's price control. The document also provides information on revisions affecting the ICASA Price Control model (now termed the 'New Model').

2. Following the initial consultation and taking account of comments submitted by interested parties, ICASA has reformulated the price control model, amended some key assumptions, and constructed a New Model. The methodology used in the New Model is equivalent to that used in the Old Model which was previously explained by ICASA.

3. ICASA highlights key changes between the Old Model and the New Model in the points below.

4. The GDP forecast used in the New Model is based on statistics produced by Statistics South Africa ("Stats SA"). The New Model incorporates a real GDP growth forecast of 3.5% pa over the period 2005-08, whereas in the Old Model the forecast assumed a growth rate over the same period of 3.0% pa. The figure 3.5% pa is calculated by taking the average annualised changes in real GDP as reported by Stats SA over the period 2000 quarter 1 through to 2004 quarter 3. ICASA views this period to be reflective of the business cycle. Independent forecasts of GDP closely correlate with this figure. The effect of assuming a higher value for GDP growth would tend to increase the value of X computed in the ICASA model.

5. In the New Model, residential access demand grows at 0.4% pa, substantially below the figure of 3% used in the Old Model. ICASA agrees with Telkom that residential demand for access lines is unlikely to grow much over the period 2005-08. Similarly demand for business access lines is assumed to grow at 1.7% in the New Model, down substantially from 5.6% in the Old Model. The changes in these assumptions would tend to lower the value of X in the ICASA model.

6. In the Old Model it was assumed Telkom's productivity over the period 2005-08 would be 4.5% pa. In the New Model the productivity growth assumption is lower at 3.75%. Telkom in its submitted comments claim that "reduced prospects for growth with diminished opportunities for cost reduction makes the environment significantly more challenging for cost reductions". It is noted that while Telkom has disputed the productivity estimates made by ICASA, at no stage during the price review process has Telkom furnished ICASA with its own estimates.

7. ICASA has been guided to the figure of 3.75% pa for productivity growth by two sources.

8. First, the World Bank Regulation Handbook states that "it appears that in the long-term productivity growth of the communications industry in the Developing Countries has been about 2% to 2.5% higher than productivity growth of the respective economies". [1] ICASA believes that this observation is highly likely to occur in South Africa. Given the ongoing innovations occurring in the telecommunications sector, ICASA has taken the average of these two figures, that is 2.25%.

9. Second, Telkom made a number of statements in their June 2004 filing (Form 20-F) to the SEC that suggest strongly that it will continue to improve the efficiency of the fixed line business:

"We will seek to increase operational and capital expenditure efficiencies to improve operating margins and increase cash flows in our fixed-line business. We intend to continue to streamline and improve our business operations through the following strategies:

• *Continue to reduce headcount.* We will continue to reduce headcount by utilizing voluntary severance and retirement packages, natural attrition and other employee optimization initiatives. In the 2004 financial year, Telkom employees declined 8.5% to 32,358 and our number of fixed lines per fixed-line employee increased to 14 9 as of March 31, 2004.

• *Continue to reduce operating expenses.* We will seek to continue implementing a strict cost management policy and further operating expense reduction initiatives. In the 2004 financial year, our cost-saving program in our fixed-line business contributed to an approximate 3.5% decrease in total fixed-line operating expenses, while materials and maintenance expenses declined approximately 16.0% as we realized

[1] pp. 4-20 *op. cit.*

benefits from our network investment and saw fault rates and losses in respect of cable theft decrease. Our current initiatives include cable alarm systems, enhanced fraud management, consolidation of stores, space optimization and continual reduction of our vehicle fleet."[2]

"We intend to continue to reduce our fixed-line headcount over the next few years."[3]

10. ICASA believes that Telkom's statements are strongly indicative of a company that expects to maintain healthy rates of productivity growth. It seems reasonable therefore to suppose that Telkom's productivity growth will exceed growth in total factor productivity by 2.25% over the period 2005-08.

11. According to Professor Ben Smit, Director of the Bureau of Economic Research[4], total factor productivity in the South African economy is expected to grow at 1.5% p.a. over the period 2005-08.[5] Therefore ICASA believes that Telkom's productivity will grow at 3.75% i.e. (1.5% + 2.25%) pa over the period 2005-08.

12. A number of further refinements were made by ICASA in producing the New Model. The most significant of these refinements involved the removal of a modelling assumption used in the Old Model that required each service line to break-even by 2008. This assumption was invoked because it meant that Telkom's fixed line business would by definition break-even in 2008.[6] However, there is no reason to believe that Telkom

[2] Page 41, Form-20F, submitted to the SEC by Telkom, June 2004.
[3] Page 112, Form-20F, submitted to the SEC by Telkom, June 2004.
[4] Homepage http://www.ber.sun.ac.za/.
[5] The forecast of 1.5%p.a. total factor productivity is taken from Table 3 in "The South African Economy: A 10 Year View", presented by Professor Ben Smit, presented 18 November 2004. This forecast is also used by the IMF in "IMF: South Africa: Selected Issues", *IMF Country Report*, June 2004, p12.
[6] As the model incorporates a weighted average cost of capital (WACC), the break-even requirement is compatible with Telkom earning a normal return. By imposing a break-even requirement at the end of the price control period, ICASA is able to determine a value of X that ensures this requirement is met.

would wish to select tariffs for each line of service such that each service on a stand-alone basis would break-even. Indeed, there is good reason to expect the continuation of access deficits, albeit at a declining rate, on the access products.

13. As a result of the change to the break-even requirement assumption on a per service basis, the tariffs that could be set by Telkom in the model allow for greater flexibility. Mathematically the effect of this is benign, and as a result Telkom can achieve higher rates of performance in the New Model. However, the calculation of X in the model still requires that Telkom break-even as a whole in 2008. However, over the price control period as a whole 2005-08 Telkom should make a positive profit. The latter is important as this provides a strong incentive for Telkom to continue to improve its business and is one of the cornerstones of incentive based regulation.

14. ICASA believes that the changes made to the way in which prices are calculated strengthens the credibility of the price review model.

15. As a result of the changes made to the model, the New Model computes a value of X equal to 3.72%, which is lower than that produced in the Old Model.

16. Another way to compute the value of X, is to use an approach suggested by the World Bank Regulation Handbook.[7] States that the value of X can be calculated by using the following formula:

the regulated firm's productivity LESS *the economy's total factor productivity* PLUS *Producer price inflation* LESS *Input price inflation for the telecommunications sector*

[7] See *Telecommunications Regulation Handbook* Module 4 'Price Regulation' pp. 4-20, World Bank November 2000.

17. The World Bank Regulation Handbook further states that "The long-term historical input price differential (IPD) between the telecommunications sector and the economy is generally positive, but smaller than 1%".[8] ICASA therefore assumes that over the period 2005-08 the IPD will average around 0.5%.

18. Calculating X by using the above formula yields the following:

the regulated firm's productivity (3.75%) LESS *the economy's total factor productivity* (1.5%) PLUS *Input Price Differential* (0.5%) = 2.75%.

19. The above calculation is only an approximation and omits an incentive factor. The ICASA New Model allows for an incentive factor. According to the World Bank Regulation Handbook, an incentive factor (IF) can add anywhere between 0.5% to 1% to the value of X. Therefore, allowing for incentive effects in the approximation method results in a value of X between 3.25% and 3.75%.

20. ICASA therefore proposes X=3.5% i.e. 2.75 + 0.75 where 2.75 is as calculated above and 0.75 is the incentive factor (IF).

21. ICASA would like to emphasise that its modified assumptions in the New Model have taken account of Telkom's comments. In particular, the expected efficiency gain has been reduced substantially from an approximate 4.5% p.a. to 3.75% p.a. (a 28% reduction). The lower figure used is consistent with observations in other jurisdictions and has been applied widely elsewhere.

22. By responding to observations and comments received from Telkom and other interested parties, ICASA has reformulated its price control model. ICASA has also calculated X using an alternative approximation method

[8] pp. 4-24 *op. cit.*

which is recommended by the World Bank for Developing Countries Regulators. ICASA proposes a new value for X= 3.5%.

ANNEXURE 1

INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA (ICASA)

NOTICE PROVIDING CLARIFICATION TO NOTICE 2490 OF 2004 GOVERNMENT GAZETTE NO. 26977 PUBLISHED 8 NOVEMBER 2004 ("THE NOTICE") INVITING COMMENT ON THE REVIEW OF TELKOM'S PRICE CONTROL UNDER SECTION 27 READ WITH SECTION 96 (4), AND SECTION 45, OF THE TELECOMMUNICATIONS ACT NO. 103 OF 1996, AS AMENDED.

With reference to the above notice as it was published on the 8 November 2004, the Authority has received a written request from an interested party regarding the Price Review, that ICASA provide further details about the modeling that was used to determine the value of X in the draft Price Review consultation paper.

ICASA believes in the interest of transparency and good regulatory practice that these details are made public whenever possible. ICASA has decided therefore to publish this short note, which provides further details about the methodology used to calculate X. Further queries regarding the methodology employed by ICASA and any other aspects relevant to the Price Review can be raised at the Public Hearings scheduled to take place Monday and Tuesday, 13 and 14 December at Block C- Presentation Room, Pinmill Farm, 164 Katherine Street, Sandton.

1. Methodology

In order to establish a framework within which the parameters of the new price control arrangements could be set, ICASA has developed a financial model of Telkom. This model enables ICASA to calculate the expected impact of various alternative price control regimes under a range of alternative assumptions.

The model has been developed in line with international best practice and consists of a number of modules. Initial values of key variables are used as inputs and assumptions are made about a number of variables. Together these effect revenues through their affect on demand for services, and demand volumes drive costs. The model is closed by seeking a value for X, the productivity factor, which results in revenues being equal to costs in the final year of the price control review period. To ensure that Telkom earns a return that covers its estimated cost of capital, costs used in the financial model include a cost of capital element. A schematic representation of the financial model is shown in Figure 1.

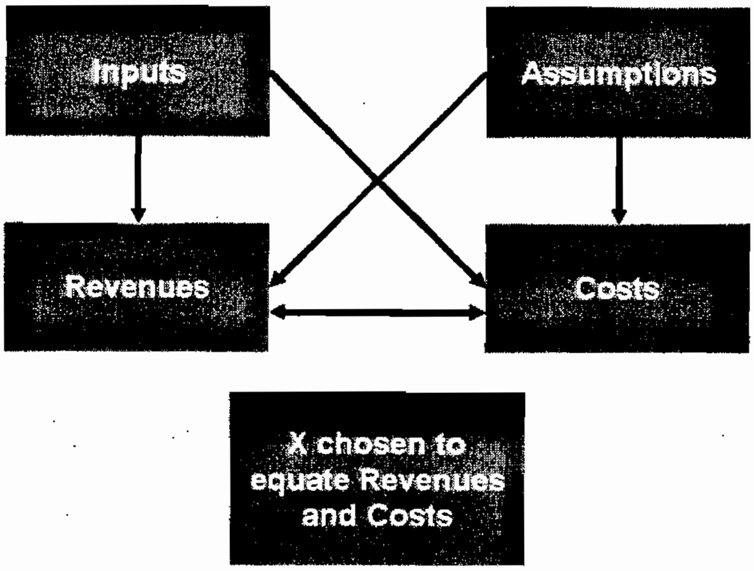

Figure 1: Schematic representation of the ICASA financial model

Tables 1-4 below provide further information about assumptions, input data, and variables in the ICASA financial model.

Table 1: Input data in ICASA financial model

Input	*Source of information*	*Purpose*
Current service volumes	Telkom, Telkom published accounts, Form 20-F, COACAM (Chart of Accounts and Cost Allocation Manual)	Volumes associated with individual services, for residential and business
Costs	COACAM	Unit costs (average costs) per service, incremental costs (applied cost volume relationship assumption)
Tariff weightings	Telkom tariff filings, service volumes	Weights used in price cap
Macroeconomic and demographic	Statistics South Africa (population data)	Feed into demand functions

The macroeconomic and demographic data used in the model are described in Table 2.

Table 2: Macroeconomic and demographic data

Year	2004	2005	2006	2007	2008	2009	2010
Population million	46.6	47.4	48.0	48.7	49.3	49.9	50.6

GDP growth %	3.8	3.0	3.0	3.0	3.0	3.0	3.0

Table 3 presents information about the key assumptions applied in the financial model.

Table 3: Key assumptions in ICASA financial model

Assumption	Purpose
Price demand elasticities	Used to assess how demand varies as service prices vary. Assumed inelastic for all services; business users more inelastic than residential (Table 4 shows elasticity values).
Income elasticities	Used to assess how demand varies as incomes change. Assumed to be 0.8 for all services. Thus if income increases by 1% then demand increases by 0.8%.
Market shares	Telkom's share of the different service markets is assessed. These assumptions are market sensitive as they take account of the degree of success of entry, assumed to occur in many markets from February 2005.
Use of telephony services by marginal user	To assess how revenues evolve.
Second lines	Growth in second lines affects costs/revenues.
ISDN,ADSL	Growth affects costs/revenues.
Business demands	Feed into demand functions.
Efficiency due to technological progress	Account for exogenous technical progress. 3% per annum assumption, source Oftel.
Catch-up efficiency	Telkom to catch-up with average of UK, Germany and France lines per employee over a four year period, requiring a 1.3% per annum improvement in productivity (up to 2008).
Cost volume relationship	Taken to be 0.75 for all services. The cost of the marginal service is 75% of the current unit cost.
Weighted average cost of capital	Calculated to be 13.04% nominal on a post-tax basis. Explained fully in the 2004 Price Control Review consultation document.

Table 4: Price elasticity of demand assumptions for residential and business services 2004-10

Descriptions	Sources	Units	2004	2005	2006	2007	2008	2009	2010
2.1 Price elasticity									
Residential									
Short Distance Calls	Assumption	%	-20%	-20%	-20%	-20%	-20%	-20%	-20%
Long Distance Calls	Assumption	%	-20%	-20%	-20%	-20%	-20%	-20%	-20%
International calls	Assumption	%	-80%	-80%	-80%	-80%	-80%	-80%	-90%
Calls to mobile	Assumption	%	-40%	-40%	-40%	-40%	-40%	-40%	-40%
Calls to internet	Assumption	%	-20%	-20%	-20%	-20%	-20%	-20%	-20%
Business									
Short Distance Calls	Assumption	%	-10%	-10%	-10%	-10%	-10%	-10%	-10%
Long Distance Calls	Assumption	%	-10%	-10%	-10%	-10%	-10%	-10%	-10%
International calls	Assumption	%	-50%	-50%	-50%	-50%	-50%	-50%	-50%
Calls to mobile	Assumption	%	-20%	-20%	-20%	-20%	-20%	-20%	-20%
Calls to internet	Assumption	%	-10%	-10%	-10%	-10%	-10%	-10%	-10%

The above data, information and assumptions were fed into a spreadsheet model designed using Microsoft Excel. The model was programmed to calculate X, which equates revenues with costs. The linkages between different elements of the model are shown in Figure 2.

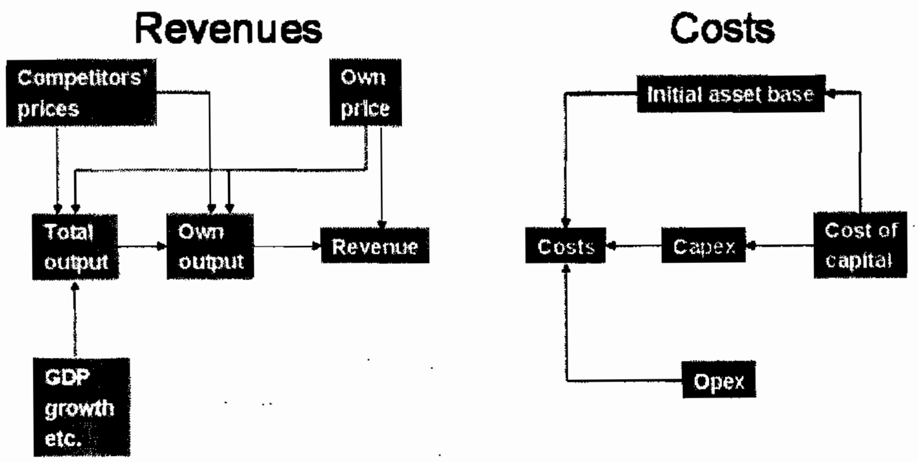

Figure 2: Linkages between different elements in the ICASA mode

ANNEXURE 2

ICASA

INDEPENDENT COMMUNICATIONS AUTHORITY OF SOUTH AFRICA (ICASA)

NOTICE PROVIDING CLARIFICATION TO NOTICE 2490 OF 2004 GOVERNMENT GAZETTE NO. 26977 PUBLISHED 8 NOVEMBER 2004 ("THE NOTICE") INVITING COMMENT ON THE REVIEW OF TELKOM'S PRICE CONTROL UNDER SECTION 27 READ WITH SECTION 96 (4), AND SECTION 45, OF THE TELECOMMUNICATIONS ACT NO. 103 OF 1996, AS AMENDED.

With reference to the above notice as it was published on the 8 November 2004, the Authority has decided to disclose further details about the modeling framework used to determine the value of X in the draft Price Review consultation paper.

ICASA believes in the interest of transparency and good regulatory practice that these details are made public whenever possible. ICASA has decided therefore to publish this short note, which provides further details about the methodology used to calculate X.

ICASA Price control model

- ICASA establishes the value of X in the price control applied to Telkom using a financial model of *Telkom's regulated business*. In the model Telkom's regulated business accounts for 71.4% of Telkom's total fixed line and data business.[9] The model does not include revenues derived from other activities undertaken within the Telkom Group of companies.
- The model has been developed by ICASA in line with international best practice and consists of a number of modules. The model has been constructed using Microsoft Excel, and contains a number of macros for solving various problems.

[9] The model assumes that R21,547million revenues are attributable to the regulated business, whereas Telkom as a company earned R30,175million revenues in 2003-04.

- The model has been populated with data derived from Telkom's published accounts, other Telkom sources, and Telkom's COA-CAM submitted to ICASA. The data are a mix of financial and quantity variables.
- The service revenues and costs data in the model are deflated to take account of inflation (real values are used).
- Data for the financial year 2003-04 comprise the initial values of key variables.
- The model incorporates assumptions about market growth, cost volume relationships, demand elasticities, cost of capital, efficiency (productivity), and the effect of competition (loss of market share to competitors). These assumptions are informed by Telkom's recent history, the financial markets in South Africa, the South Africa macro economy, appropriate international experiences and independent forecasts for the same.
- The model also incorporates a number of constraints. In particular, the price changes for some services over a year cannot exceed 5% in real terms.
- The model also has a module for the residential sub-basket.
- The initial values, the assumptions and the constraints form the inputs to the model.
- The value of X is calculated by solving an algorithm, which works by applying an iterative procedure.
- The duration T of the price cap is selected (ICASA has chosen T=4 years) and a value of X is selected. The initial value of X is deliberately chosen to be low (typically 0.5).
- Having selected T and X, the model solves for each year the *optimal* set of prices for services in the regulatory basket. Optimal means the set of prices resulting in the highest profit level, subject to complying with the price cap. This process is undertaken sequentially in the model. Optimal prices are established initially for Year 1, then Year 2, and so on.
- In determining optimal prices, the model assesses how demand varies for each service (governed by demand elasticity assumptions) and how costs vary (governed by the cost volume relationships). For services where total demand increases, it is assumed that Telkom benefits from scale economies.
- For the X chosen and the set of optimal prices determined for each year, the model compares the final period (Year T) costs and revenues. Costs in the model are real costs and include a contribution towards the cost of capital. If efficient costs are less than revenues in Year T, the model chooses a higher value of X and repeats the computations described above. This process continues until costs equal revenues in Year 4 (or where revenue is greater than cost but very close to cost). At this point the model has solved for X.
- The model does not constrain revenues, as revenues are endogenously determined.
- Having established a value for X, the model then performs sensitivity analysis around key parameters.
- The value established for X should ensure that in Year T Telkom's regulated business earns a rate of return on capital employed equal to the weighted average cost of capital. Alternatively, revenues of services in the price control basked are equal to the costs of supplying such services. This approach is in line with

international best practice: "The intention behind reducing the regulated charges by RPI-X in each year of the charge control is for the weighted average charge of the products and services within the charge control basket to equal the forecast of the efficient level of costs at the end of the charge control period."[10]

- One of the main benefits of a CPI-X price cap is that it creates incentives on Telkom to increase its efficiency, over the period in which the price control is in force. The objective of the price control is to bring the controlled charges of Telkom into line with an efficient level of costs at the end of the price control period. As part of this process it is important to understand the extent of Telkom's efficiency/inefficiency at the outset of the price control so that erosion of inefficiency can be reflected in the value of X. It is reasonable to expect inefficiency existing at the start of the price control to be eliminated over the life of the four-year control, just as competitive pressures would force inefficient companies to become efficient in a competitive market. ICASA is currently re-assessing the degree to which Telkom is inefficient relative to best practice

[10] Para. 4.1, Ofcom "Partial Private Circuits Charge Control: Final Statement", September 2004. Annex B of this document provides a detailed overview of Ofcom's price control methodology. The Ofcom methodology is similar to the methodology employed by ICASA.