

The Deregulation of the South African Telecommunications Environment

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DECLARATION

I declare that this report is my own work, except to the extent acknowledged and referenced, as indicated in the text of the report.

It is being submitted for the degree of Master of Business Administration at the Graduate School of Business of the University KwaZulu Natal.

Signed,



Philippa Tite

On the 30th day of December 2006

ABSTRACT

The intention of this document is to discuss the deregulation of the telecommunications environment in South Africa, focusing specifically on the introduction of the Second Network Operator and its relationship with Telkom and the market.

The aims of this research include an evaluation of whether or not competition can occur when Telkom is the provider of a portion of the fixed line equipment as well as a competitor to the Second Network Operator. In addition to this an evaluation will also be undertaken of whether or not the consumer will ultimately benefit from increased service levels, as well as decreased cost once the Second Network Operator is offering services to the consumer.

The research methodology employed is that of Case Study Analysis. The reason being that this method allows for a large amount of relative data to be chosen for the study (using Purposive sampling techniques), and this can then be analysed on a subjective basis, using comparisons as well as models such as the PEST, and Porter's Five Forces.

Ultimately the study recommends that without a strong regulator, deregulation is pointless as the incumbent provider is exceptionally powerful both financially and politically and will not hesitate to engage in unfair practices should it feel that those practices may benefit their position. To this end it is recommended that ICASA play an active role in the pricing of the local loop access as well as the pricing of inter-connections between the parties. It further recommends that Neotel follow a strategy of strong customer focus as well as strong technological focus.

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CHAPTER ONE

Introduction and Statement of Problem

1.1 Introduction

The South African telecommunications environment is entering an extremely exciting and volatile phase. The constant teetering on the edge of the readiness of the Second Network Operator is beginning to undermine consumer confidence in the Telecommunications Portfolio as postponement follows postponement. The initial award of the SNO license was scheduled for May 2002, and the license was only awarded in December 2005. It was in fact a three year delay which kept the market on constant short notice. Telkom has launched an aggressive sales and retention strategy offering Corporate as well as private individuals massively discounted rates should they sign long term (three to five year) contracts. This has placed the SNO under pressure to “hit the ground running” when it is finally ready to offer services, as there are high expectations from all quarters.

1.2 Motivation for, and background to the research

Internet Solutions is uniquely positioned to either benefit tremendously or be extremely adversely affected by the introduction of the Second network operator (SNO) in South Africa. As already proven by the relationship between Internet Solutions and Telkom, there are specific challenges that surround a market where one party is both competitor and supplier. In the case of Aunde, Telkom bundled in the cost of physical diginet line with the cost of the internet bandwidth causing Internet Solutions to lose the client to Telkom based on price (Smith: 2006). The unique relationship between Telkom and the SNO and the effects on the South African telecommunications market (in terms of both

competition and price and market fluctuations) will be explored. This relationship and the effects will impact directly on the bottom line for IS who pay roughly half a billion Rand to Telkom every year (Shrock: 2005). Internet Solutions would like to assess the effect the SNO will have on the Telecommunications market, and whether or not they will be competitively effective even though they will be required to 'piggyback' off existing Telkom infrastructure, during the initial few years. Beardsley noted, "the results of liberalization have been less than impressive, in most markets, the last mile connections between customers and the rest of the network have remained under the incumbents' control" (Beardsley *et al* : 2004).

1.3 Value of the project

The concern over whether or not a supplier can also be a competitor is a real one. Telkom controls the essential base infrastructure, and will thus dictate pricing to the SNO and in turn to their customers. This research hopes to define whether or not the SNO has a chance to really compete in the market or if they are going to be effectively 'hamstrung' by the reality of having to utilise the Telkom infrastructure in order to offer any service at all. One of the driving forces behind the decision to deregulate the market was the need for effective competition to drive down prices to the point where SA can compete on an international level, as well as to create an environment that fosters service excellence and innovation. The question that remains to be answered will be, whether or not the SNO will be able to truly compete in the market.

1.4 Problem statement

A case study on the recently deregulated South African telecommunications environment to evaluate whether or not the introduction of the additional network operator will in fact result in a competitive environment that aids in driving down prices and increasing service levels.

If South Africa is to compete at an international level the cost of bandwidth has to be reduced as the majority of companies cannot afford the amount of bandwidth that they need in order to operate effectively. The high cost of telecommunications in South Africa is hampering the country's ability to grow and this directly affects the economy and has an impact on social issues. The Second Network operator is being introduced into South Africa with the hopes that it will have the following affects:

- Increase service levels
- Introduce the telecommunications environment to effective competition and
- Decrease prices.

This study hopes to clarify whether the prevailing market conditions will make it possible for those objectives to be attained.

1.5 Objectives of the study

- To evaluate whether or not true competition can occur when one of the two main players is a supplier.
- To determine the circumstances under which the adoption of a Second Network operator will be successful.
- To establish whether or not the launch of the SNO will succeed in driving down the costs and increasing the service levels in the telecommunications environment.

1.6 Research Methodology

As the problem statement indicates the research methodology that will be employed will be case study analysis. Wikipedia (2006) elaborates on this methodology explaining that

“Case studies can generate a great deal of data that may defy straightforward analysis”, and in *Research Methods for Business Students*, Saunders *et al* (2003) define Case study analysis as “a strategy for doing research which involves empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence”. The nature of the research precludes any quantitative analysis beyond financial statements and effects based on supposition. The majority of the analysis will thus be done based on qualitative research.

1.6.1 Sampling

Non-probability sampling allows for subjective techniques as opposed to statistical techniques to be employed when choosing the research samples that will be examined. This can in fact be examined in more depth and in this case study Purposive Sampling will be employed. Also known as Judgemental sampling this technique allows the researcher to choose cases which he or she feel will have the most relevance or be of the most benefit to the research. The basis upon which these cases will be chosen will come from a homogenous sampling group - that of Third World countries with similar environments to South Africa and then one country (the United Kingdom) which enjoys a very different environment to South Africa but was chosen on the basis that the lessons learned during deregulation could have a great impact if South Africa chose to learn from any mistakes that the United Kingdom may have inadvertently committed.

The following Primary literature resources will be used as a source of information:

- Company Reports
- Government publications and speeches

The following Secondary literature resources will be used as sources of information:

- Internet
- Journals
- Online journals
- Online News Sites (such as News 24, ITWEB, McKinsey Online)

- Newspapers

The following Tertiary literature resources will be used as sources of information:

- Radio interviews (with the Neotel management)
- Personal conversations

Each of these resources has been used to access information from 2000 to 2006. A number of the online sites have been used to access information that has been loaded and updated from times predating the Internet. Government speeches, Acts and Bills have been analysed in light of amendments that have been passed for each one since the Acts or Bill's inception.

1.7 Limitations of the project

Some of the challenges that will face this research will be:

- Lack of accessible research into deregulation of the telecommunications environment in third world countries.
- Lack of access to information from Telkom
- Conclusions will be drawn from qualitative as opposed to quantitative research and this may make the study vulnerable to criticism of subjective analysis.

1.8 Structure of the research

1.8.1 Chapter 1

This introductory chapter introduces the topic of the dissertation to the reader and explains the format and sequence of information. The importance and relevance of the research will also be highlighted under this section.

1.8.2 Chapter 2

The literature review part of the dissertation, this chapter will examine the theories around deregulation as well as the relevance to today's environment. An examination of various environmental models (including the Political, Economic, Social and Technological Model – PEST - and Porter's 5 Forces Models) will also be completed here, as this study strives to gain a better understanding of the environment in which the SNO and Telkom will be operating.

1.8.3 Chapter 3

In this chapter a detailed examination of Telkom's history as well as the South African Telecommunications history will be undertaken. The Second Network Operator's infrastructure and company overview will also be examined. Both companies' services and technology will be discussed.

1.8.4 Chapter 4

Against the backdrop of Chapter Two's analysis and Chapter Three's detailed information of the components of the deregulated Telecommunications environment, Chapter Four will offer an examination of similar environments where deregulation has already begun. As a contrast and a learning study, an environment that is very different to the South African one will also be examined – that being the United Kingdom and the deregulation of the British Telecom controlled market.

1.8.5 Chapter 5

In Chapter 5 an elaboration on the way in which Neotel is recommended to approach the markets will take place. Included in this will be the critical success factors that Neotel will have to ensure are addressed should they wish any of their strategies to succeed.

1.9 Conclusion

The studies that Neotel will have made of other markets will ensure that they learn from the mistakes made, as well as gain an understanding of how to avoid committing those very same mistakes in South Africa. This study hopes to clarify some of those pitfalls as well as highlight ways in which to avoid committing the same errors in this newly deregulated environment.

CHAPTER TWO

Review of the theory and conclusions as to the relevance of those theories in the practical environment.

2.1 Introduction

Although seemingly unrelated, competition is an integral part of deregulation. Without the need for a stimulated and dynamic market at the mercy of market forces -such as the 'invisible hand'- deregulation would seemingly be an unnecessary and onerous burden for both existing stakeholders, as well as the public. Amosweb (2006) defines deregulation as "the reduction of government regulation of business, consumers, and market activity". While dictionary.com (2006) uses the sociological definition of competition; "rivalry between two or more persons or groups for an object desired in common, usually resulting in a victor and a loser but not necessarily involving the destruction of the latter". Although deregulation aims to reduce government intervention in business, it also aims to stimulate the natural market forces which would otherwise be in play, and which would naturally lead to said rivalry between two or more groups who aim to dominate the market.

2.1.1 The invisible hand

A theory developed in 1776 by the famous economist Adam Smith (Schiller: 2000), the invisible hand is the market mechanism "that uses market prices and sales to signal desired outputs". Simply put if the market wants the service/ product produced sales will increase and therefore production will be increased. If the market is not desirous of the service/ product sales will fall, production will be adjusted accordingly and those workers who are no longer required to produce that service/ product will be moved into

production of another service/ product. In fact Adam Smith believed so wholeheartedly in the invisible hand of the market he believed governments should never interfere with market economies.

2.2 Deregulation

The 1970's and 1980's was a boom time for deregulation in the USA, mostly as a 'response to criticism that economic regulation inhibited rather than promoted competition. Key industries deregulated during this period were transportation, communications, and banking industries', (Amosweb: 2006). There are arguments in favour as well as against deregulation within an emerging economy and South Africa is no exception. The politics of the day will generally dictate the governmental stance on the privatisation issue, with conservative thinkers tending towards the private ownership of resources and the liberals opting for a more nationalist approach. No one approach can work for all economies, especially in today's' age of vast wealth chasms between nations, each one has to be assessed individually and by those with no vested interest in the outcome.

The major arguments for de-regulation centre on issues such as efficiency, cost effectiveness and many other business measures that state-regulated industries tend to ignore. Due to these failings, these governmental organisations become very expensive and ultimately the taxpayer picks up the tab. Deregulating the industry is often the most obvious solution, as due to the nature of competitive markets and the invisible hand, these efficiencies are largely eliminated, and privatisation also results in cash inflow to the state coffers.

In addition to this it must be remembered that a private organisation or business exists to realise a profit. In order to achieve this they will do whatever they can to cut costs when privatised, which unfortunately can result in more jobs lost unless measures are put in place to prevent increased unemployment and privatisation going hand in hand. One of the pitfalls of cutting back on the staff complement is that support services often suffer.

Often older members of staff who have an intimate knowledge of the networks, services or products take retrenchment packages and the organisation is left with staff for whom retrenchment was not an option for any number of reasons. Drops in service levels must be guarded against lest the newly privatised organisation lose clients and therefore market share due to an inability to support their products.

The arguments in favour of government deregulation are significant, particularly the profit margins of well run businesses and industries, and the fact that the government could use the financial gains made from the sale of their entities for social upliftment and capital investment programmes. In fact government deregulation enhances the market potential of the economy and affords a substantial competitive advantage so that the producer, supplier and the consumer all benefit.

Government deregulated business initiatives, are characteristically freer of regulatory behaviour and this enhances competition within industries, enhances economic gains and stimulates social development. It is not controlled by policies and procedures that often prevent economically viable businesses from emerging and contributing to the country's GDP, the ubiquitous 'red-tape' where industry gets so mired in the ever expanding rules and regulations that they are unable to bring their product to market in a timely and economically viable fashion. The shift in tailoring businesses to suit consumer demands, the dynamic and ever-expanding technology and the ability to substitute a product or good serves as a primary motivational reason for a deregulated business or industry.

According to Hahn (1992), "The measurable costs of regulation pales against the distortions that sap the economy's dynamism. The public never sees the factories that were not built . . . or the entrepreneurial idea that drowned in cumbersome regulatory process". The inadequacy of consumer demands going largely unmet due to much red tape has been instrumental in motivating deregulated business. The competitive market in a deregulated economy reduces - or in some instances eliminates - bureaucracy and the high barriers for entry into the business and commercial world. This enables the producers, suppliers and consumers to participate actively (at different levels and in

different capacities) in the economy. In other words, producers will be able to pay less for the forces of production (as the strict regulations are absent in a deregulated business environment) and therefore the volume of capital will increase, retailers will be charged lower prices for products purchased and consequently consumers will be charged lower prices.

When capital is imported however, customs and excise tax are levied, and these costs cause the supply costs to increase. This is indeed a valid case for buying local (when possible) and the deregulation of many businesses will enhance offerings to the consumers, while contributing positively to the economy not only in business taxes, but also in employment. The competition between suppliers will also be healthy and intense so that ultimately the consumer will benefit, as there will be variety and the opportunity of buying from one business as opposed to another. Conversely, in a government regulated business, the non-adjustment of prices according to the invisible hand (or lack thereof) will result in prices not reflecting the market worth of the product and in fact often overcharging for services that if left to a competitive environment would be placed at a decreased tariff. This has been ably illustrated by the South African telecommunications environment where Telkom has affectively set the price far beyond the cost of production. The announced earnings in 2005 were R6.751 billion and in 2006 they were R9.182 billion (Rose: 2006). This is an incredible earning, by any measure and one has to ask the question of whether or not these earnings would have been made, if the market had been subject to normal market forces.

Many sectors that provide key services to consumers are affected by deregulation of businesses and industries such as that of the railroads, trucking, telephone, airlines, and electricity business initiatives.

Due to regulations attached to the railroads in the USA, consumers chose to use other modes of transportation for example pipelines, buses and trucks. The revenue of the railroads decreased and in response the Railroad Revitalisation and Regulatory Reform Act was introduced. This granted more freedom in terms of price and service adaptation

by dropping the rates and thereby stimulating the market for services. Hence deregulation has been a favourable response to the market demand as the turnaround for such a sector was remarkable. It can be seen that the inefficiencies of the regulated railroad industry were recognised, and the system amended to become deregulated so that flexibility emerged which made the industry economically sustainable.

The telecommunications industry is another sector that has supported government deregulation. In the mid-nineties government decided on a process of partial privatisation for Telkom in order to enhance skills, attract Foreign Direct Investment and present Telkom as a powerful competitor. As a direct result Telkom's service levels increased exponentially and by May 2003, delay times for the installations of telephones had decreased to an average of 8 days for residences and 5 days for corporations down from an estimated 21 days for residences and 14 days for corporations. Note as well that Telkom's line rollout target of 2.7 million was nearly attained with a shortfall of 16,448 lines not being rolled out (Telkom: 2004).

Airlines have also shown that government deregulation has been productive and contributed to its competitive advantage. Cross subsidising, product differentiation and entrance barriers serve to reinforce the need for deregulation. In fact the latter facilitates healthy competition. For the consumer this will mean that their bargaining power will increase. South African Airways (SAA) has also entered into discussions relative to privatisation but the government maintains that completely privatising (total ownership of) the airlines is unfavourable in view of the volatile international climate. No doubt the foreign investment, via this country's imports and exports as well as economic activities linked to tourism are imperative variables to consider.

Finally the electricity sector that provides a service that is crucial has also moved towards government deregulation. Eskom provides two thirds of its electricity to SA citizens. Eskom has also been considering privatisation and consequently government deregulation. According to Chairman Reuel Khoza, (Marais: 2002) "It is not for me to say whether or not Eskom should be privatised. That decision rests with the government.

But there is a certain inevitability about it.” Privatisation of Eskom is controversial especially in light of its social obligations under the electrification drive.

Radebe (2002), the ex South African public enterprises minister, believes restructuring of the SA parastatals has played a positive role in “reducing national debt, investing billions of Rands in the upgrading of transport and other infrastructure, promoting black economic empowerment and providing basic services such as electricity” (Loxton: 2002). Not one of these achievements could have been achieved as fast or as successfully in such a short time if the restructuring process had not begun.

2.3 The Telkom Listing

What remains is to be seen is whether or not the deregulation which led to the listing of Telkom has had any impact on the life of South African citizens. Historically known for their appalling service, and high tariffs, Telkom’s’ listing pre-empted the award of another telecommunications license to the Second Network Operator (Neotel). The public wants to be offered options when it comes to services they enjoy, and with an increasingly demanding public the hope is that Telkom will improve their service delivery, and lower their prices so that they are in line with international standards. However with privatisation of a previously government owned company of this magnitude, there are bound to be major economic effects for the South African community.

2.4 Relevance of the theory

Deregulation of Government markets is expected to have the following positive affects:

1. Improved fiscal position.
2. Increased foreign investment
3. Stimulate demand and therefore supply
4. Increase innovation and technical ‘know-how’

5. Increase efficiency and cost affectivity
6. Increase service levels.

The following negative effects:

7. Unemployment
8. Instability of the market

2.4.1. Improved Fiscal Position

Government has raised significant funds from the Telkom's IPO (initial public offering), which will go some way towards increasing expenditure on social delivery in the national budget without creating debt.

Usually government raises finance for its expenditure by:

- Increasing taxes: which result in a decrease of private consumption or investment.
- Borrowing money from the private sector, which decreases the amount of credit available to the private sector for consumption and investment. This creates a reduction in private demand, which offsets some of the intended fiscal stimulus.

Due to the funds raised from the Telkom listing, government did not need to raise funds from the private sector when it increased spending. Therefore the fiscal stimulus was not offset by the 'crowding out' of some private expenditure.

From a Keynesian perspective, an increase in government spending will increase the demand for goods and services resulting in output increasing which will decrease unemployment and grow the economy.

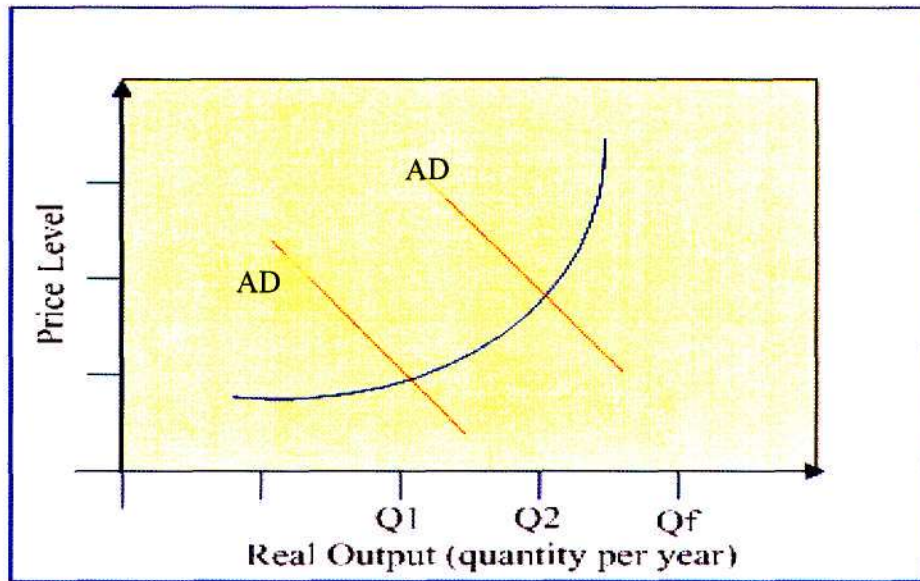


Figure 2.1 The Keynesian Model of the Adjustment Process

Figure 2.1 illustrates the impact of government spending using the Keynesian model of the adjustment process. The aggregate demand shifts from AD1 to AD2 when government buys an additional amount of output resulting in employment moving from Q1 to Q2 closer to Qf (full employment). Government spending creates additional income for the market participants who in turn will spend the income. Hence each rand gets spent and re-spent many times resulting in a multiplied impact on aggregate demand. This will move the output from Q2 closer to Qf (full employment).

2.4.2 Increased Foreign Investment.

A successful Telkom listing had the potential to contribute to the improvement of South Africa's rating and investment outlook, something that was, and still is of vital importance as South Africa looks to increase foreign direct investment and create employment opportunities. Traditionally international companies looking for expansion opportunities will be heavily reliant on the telecommunications infrastructure as they try to maintain control over remote branches. This in turn brings with it a willingness to

invest in the telecommunications infrastructure as well as a willingness to share knowledge of how to maintain and construct that infrastructure.

2.4.3 Stimulated Supply and Demand

As a third world country with a fledgling democracy and economy, South Africa has a much greater need for essential services and other poverty alleviating mechanisms than it does for telecommunications at this point, as people who are unable to feed themselves and their families will not be willing or able to spend marginal incomes on technology when food is so scarce. In spite of this however, the SA Information Technology sector is extremely strong with our programmers and other IT specialists in international demand. Any kind of Information Technology uses telecommunication goods and services so there is a sector of the market, which absolutely cannot do without this service. In addition to that the increasing globalisation of trade and industry relies largely on the infrastructure provided by local telecommunication companies. Without the ability to trade goods, services and even knowledge internationally, South Africa's economy would lose the foreign direct investment that currently aids in subsidising the cost of skilling up the workforce and the effort to alleviate poverty would suffer a serious setback. Possibly one it may never recover from.

The five factors of demand all play a role in the provision of Telkom's' service to the majority of South Africans.

- **Price.** In a country where poverty is such a desperate facet of everyday life many South Africans simply cannot afford their own phone, let alone any of the additional services offered by Telkom. The provision of a pay as you go phone card, has aided many that previously were unable to afford any kind of telephone at home, but the call costs are high to avoid a phone rental levy (R0.84 per minute for pre-paid customers as opposed to R0.72 per minute for rental customers for a national call). Many consumers are not happy with the current tariffs imposed on

them by Telkom, who are seen to be providing a 'shockingly bad' service with no thought to customer satisfaction.

- **Taste**: Consumers have little choice when it comes to their service provider. For fixed lines it's a case of Telkom or nothing, which should change with the introduction of the second landline operator.
- **Income**: Those that can afford a line installed at home (generally those that are employed) do install a line as soon as they can, and for the majority of the historically advantaged community, phones are still seen as a necessity. In many cases though, high phone bills, and lack of payment has seen a large number of telephone services discontinued.
- **Expectations**: Historically Telkom has been perceived by the public as offering service that is not customer centric. Consumers associate Telkom with bad service due to unsatisfactory contacts with them previously. Although they have been on a drive to decrease lead times for service installations, customers still expect little satisfaction, and are surprised when Telkom actually does give reasonable service. This can only harm them in the long run when Neotel are ready to go live with services, as all Neotel need to do is ensure a customer focused environment, and in this way will attract the majority of consumers who no longer will consider using a provider who offers mediocre service.
- **Other goods**: Cell phones and pay as you go options have brought more phones to the previously disadvantaged community than Telkom. Padayachee (2005) notes that teledensity of fixed lines is only 31% in urban and peri-urban areas while cellular density is 47%.

The privatisation of Telkom should enable them to become more streamlined, customer focused and flexible than before. The need to meet shareholders expectations with regard to increased profits should motivate an increased effort to strive for customer satisfaction,

and the offering of a range of products not only for the business sector, but for the private sector as well.

2.4.4 Increased Innovation and Technical ‘Know-How’

When the incumbent provider is challenged to offer services on a world class basis or risk losing their clientele, the only answer is to become a world class competitor. Part of that is being able to implement new cutting edge services like those employed by overseas providers, and to skill up local employees. This ‘skilling-up’ filters down to other employees, and ultimately to the clients who will be using the new services and who will need to offer front line support to their staff. Competition forces the organizations to try and find a way to differentiate themselves from each other, and this differentiation is what will force the increased learning and greater experimentation and risk taking.

2.4.5 Increased Efficiency and Cost Affectivity

The motive of any supplier is profit maximisation. Telkom has a head start as they have been part of an oligopoly in the telecommunication industry for a long time, and before that they had a monopoly. Until such time as Neotel is actually ready to offer services to the general public, Telkom still has a monopoly over that sector of the industry.

2.4.6 Increased Service Levels

Telkom needs to be aware that they have alienated enough consumers in the past that the new operator will ultimately be a serious competitor, and may sweep their clients away from them, purely due to Telkom’s history of unreliable service. With the introduction of Neotel, consumers can suddenly benchmark service levels and are able to offer comparisons. This should drive increased service levels, as profit margins are placed in jeopardy.

Telkom have not taken advantage of their advantageous position by offering a below standard service level to customers and not making their organization customer centric. These are aspects they could have begun improving when the first rumblings of privatisation began. Only since the listing of Telkom have they had any incentive (that being maximising shareholder profits) to better their service and become more efficient.

It remains to be seen just what kind of strategy Telkom will employ to deal with their competition, when it finally does arrive, but it's safe to say that they have had a good run, but the South African public are wanting more options, better service and a better attitude from the provider that they spend their scarce resources on supporting.

2.4.7 Unemployment

The arguments around the Telkom privatisation issue were discussed for over a year. Arguments against the move, particularly from trade unions, as well as arguments for the listing, were valid. The issue then, was to determine which argument proved to be of more economic and social benefit to South Africa while creating a minimum of adverse affects on the country.

Along with privatisation, comes a natural progression towards cost cutting and profit maximisation. Unfortunately, job losses are usually experienced in this process, and Telkom's' privatisation deal was no different. In a Congress of South African Trade Unions (COSATU) press statement Craven and Mothapo (2002) had the following to say: "The loss of jobs associated with privatisation is another concern for COSATU. Over the last four years, Telkom has lost at least 17 000 jobs, around a third of its' total labour force."

In an economy where unemployment is already an important social issue, such a course of action move appears to be unwise. However, another argument presents itself: The shedding of jobs and the resultant increased efficiency of Telkom will enable the organisation to lower the prices of it's' services. With nearly every business affected by

telecommunications either as a fixed or variable cost, or both, a reduction in service fees will provide much needed cost relief on these businesses. One could argue therefore, that the cost offset to thousands of businesses will more than compensate for the job losses experienced by Telkom. Craven and Mothapo (2002) went on to state “between 1998 and 2001, the price of local calls increased in real terms by around 35%.” This pre-privatisation trend should ideally be reversed once the cost cutting process has begun.

Reuters (2002) highlighted the pre-privatisation problems that Telkom were facing, the biggest factor being the over-staffing of the company, “In 2001 Telkom lines per employee rose to 113:1 from 82:1 in 1998.” This illustrates the reason for exceptionally high tariff increases, and the need for privatisation to enable the organization to become more cost effective.

Goolam Ballim (Van der Merwe: 2004), Standard Corporate and Merchant Bank senior treasury economist commented on the privatisation deal; “The initial public offering (IPO) in South African Telecommunications company Telkom raised R3,9 billion, but in US terms, this was less than \$500 million, of which only half is expected to come from offshore.”

To this end, it is evident that the privatisation deals such as that of Telkom attract lucrative and much needed foreign investment, however in the case of Telkom not enough of the investment came from offshore. However the financial investment is not the only investment with valuable skills and technology also being introduced into the organization which will enhance the performance of Telkom as well as the businesses that it serves. Goolam continued; “The size of the money coming in is not significant, rather it is the signal that the government is giving to the investment community that is important. In my opinion, the government was giving away a crown jewel at a discount, but it is necessary to do this, so as to show the world that it is committed to privatisation and not beholden to narrow sectoral interests such as trade unions.”

The above statement highlights two issues in favour of the privatisation deal: Firstly, the deal will serve to act as a catalyst for further investment, as the world can see tangible proof that the South African government is anti-socialist and committed to economic growth. In other words, the amount of risk on invested capital is reduced.

Secondly, the share offering, a “crown jewel at a discount” was made available to black empowerment groups, and thus would essentially aid the government in redistributing the wealth imbalance to the previously disadvantaged. Critics argued that this redistribution would become a class issue. In other words, an elite few would be able to take advantage of the share offering referred to by the same critics as ‘Fat Cats’. With regard to the latter issue, Goolam also had the following to say, “The other signal is that it is committed to free markets and socioeconomic redress, as shown by the discount offer to previously disadvantaged individuals.”

Along with privatisation, we will see the emergence of a competitor in the lucrative telecommunications industry in South Africa. Such a development will further contribute to the improvement of services as well as the driving down of costs as competition drives costs down, and usage will be driven down the demand curve, as services become more affordable. Furthermore, job creation through the emergence of a competitor will also help offset the job losses experienced at Telkom, and this second phase towards the privatisation of the South African telecommunications industry will provide a further cash injection into the country.

In a press release as early as October 2000, the Communications Workers Union (CWU) said it “would do everything in its power to destabilise the listing of Telkom” (*CWU opposes Telkom privatisation* 2000). These sentiments were shared by COSATU, who claim “they (telephones) help to empower individuals by giving access to emergency services, business and community organisations. They are also a vital tool for finding employment or establishing a business”. The report went on to say, “The federation has opposed the privatisation of Telkom because it will force it to put profit before service delivery and the poor will be the victims”. This statement is somewhat contradictory, in

that poor service delivery will result in profit decline as consumers and businesses will attempt to find alternative means to conduct business where possible, either direct or indirect (e.g.: cellular networks).

Furthermore, the emergence of a competitor will further contribute to the reversal of price hikes that consumers had become accustomed to.

2.4.8 Instability of the market

A regulated environment is one with a high degree of certainty. Consumers and suppliers alike are aware of expectations and deliverables. Deregulating the environment can cause uncertainty in a number of areas which has the possible outcome of destabilising the market.

Competition is strictly limited and the barriers to entry are excessively high. The limited number of participants in the market enables greater control of the environment which in turn can lead to greater consumer confidence and investment into the services or products. In an environment where new providers may be opening on a regular basis consumers are often not sure of which provider offers the best solution at the best rate. Providers of essential services in a competitive environment may not be in position to offer a guaranteed service and regular outages and unsatisfactory service levels could undermine consumer confidence in the market and limit spending and growth in that environment.

State owned enterprises are often under obligation to provide certain services for a lower cost to disadvantaged communities. In a free market, government cannot ensure that those same disadvantaged communities will be served by companies whose primary aim is to be profitable and serve shareholder interests, as opposed to philanthropic interests. Likewise services that are not profitable but are necessary for the community are often regulated and should deregulation occur there may not be companies willing to step into the breach if a profit is not likely.

Markets can also be destabilised by price wars. In a competitive environment where price can be the dictator of which service provider to choose, quality can be sacrificed for a lower cost. An organisation that is investing in infrastructure and qualified staff may not be the cheapest although it may offer the best service and/or products. Should a price war begin, investment in infrastructure and staff may be curtailed in favour of lower prices and in retaliation the competitors may lower their prices and limit their investment in staff and infrastructure. This lack of investment can lead to failing equipment and untrained staff which translate into services that cannot be relied upon and the possibility of staff that provide below par customer service.

2.5 PEST Analysis

Using the Political, Economic, Social and Technological (PEST) analysis framework let us examine the South African telecommunications environment.

Political	Economic
<ul style="list-style-type: none"> • Recent partial deregulation • Possible full deregulation in future • Need to keep pace with international markets so as to be seen to be competitive. • Regulatory body is ICASA • ICASA appears too weak to implement real change. 	<ul style="list-style-type: none"> • High unemployment • Increased spending on cellular market • Prohibitive cost of fixed line implementation for lower Living Standards Measure's (LSM's) individuals. This is the majority of the South African population. • Prohibitive cost of Asymmetric Digital Subscriber Lines (ADSL) for lower LSM's. • Willingness of overseas companies to invest in SA telecommunications

	<p>environment.</p> <ul style="list-style-type: none">• Tax breaks may be put in place for SNO and other telecom providers subject to skills development.• Large cost of implementing infrastructure for new entrants.• Exchange rates could influence investment returns either positively or negatively.
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Social/ Cultural	Technological
<ul style="list-style-type: none"> • Need for cell phones even in lower LSM's • Increased importance of file sharing and multimedia exchange. • Cell phones related to social image. • Increased consumer spending on telecommunications. • Increased awareness of overseas culture and wish to explore it over the Internet. • Major events sponsored by telecommunications companies. • Social investment by large telecommunications providers. • Large advertising spend by telecommunications providers. • Strong entrepreneurial background. • Increased emphasis on globalization. • Need for competitively priced access. • Increased service levels demanded. • New marketing opportunities through the use of technology. • Demand for instantaneous communication and information. 	<ul style="list-style-type: none"> • Need to be constantly connected to business email. • Need for faster Internet access. • Increased importance of file sharing and multimedia exchange. • Increased 'policing' of networks. • Increased Spam and Virus's creating overhead on networks. • Increased technological competition between providers and new services (e.g.: 3rd Generation -3G) to compete with traditional communication paths. • Need to upgrade legacy networks. • Introduction of Multi Protocol Label Switching (MPLS) and packet based networks. • Increased focus on e-trading. • Technology licensing changing on a global basis. • Innovation potential as new services are introduced by global companies. • Intellectual property becomes important as more software is developed and company specific networks are designed.

Table 2.1: PEST Analysis of the SA Telecommunications Market

2.6 Porter's Five Forces Analysis Model

It is generally accepted by business and academia that a PEST analysis is effective when done in conjunction with other analysis tools and to this end Porter's Five Forces Model¹ is often the tool of choice. Wikipedia summarises the background to Porter's five forces Analysis Model which was designed in 1979 as a model that "... uses concepts developed in Industrial Organization (IO) economics to derive 5 forces that determine the attractiveness of a market (*Porter's 5 forces Analysis* 2006). Porter (1979) referred to these forces as the microenvironment, to contrast it with the more general term macro-environment. They consist of those forces close to a company that affect its ability to serve its customers and make a profit. A change in any of the forces normally requires a company to re-assess the marketplace".

Figure 2.2 on the next page is an ideal way to assess the power bases at work in the partially deregulated South African Telecommunications environment.

The threat of potential entrants into the telecommunications market is relatively small as the market is controlled and not only economic but also regulatory barriers exist. Substitutes only exist in the way of international companies who are able to sign interconnects with local partners however if the local Public Switched Telecommunications Network (PSTN) refuses to switch their calls onto their network there is little if any point in offering this service. Suppliers to the various telecommunication providers exist in the form of international switching partners and each other. For example MTN switch Telkom calls onto their network. The industry competitors consist of Telkom, Neotel, MTN, Cell C and Vodacom at this stage, though Vodacom, Cell C and MTN compete for the mobile market and only Telkom and Neotel will be competing for the fixed line market. Neotel will need to invest large sums of capital into their marketing effort so that they can compete in terms of brand awareness with Telkom, whose brand is one of the most recognizable in SA, due to their sponsorship of soccer and other sports and their years as a supplier to the market.

¹ For an analysis of Porter's 5 Force model and the PEST analysis please see Chapter 4.

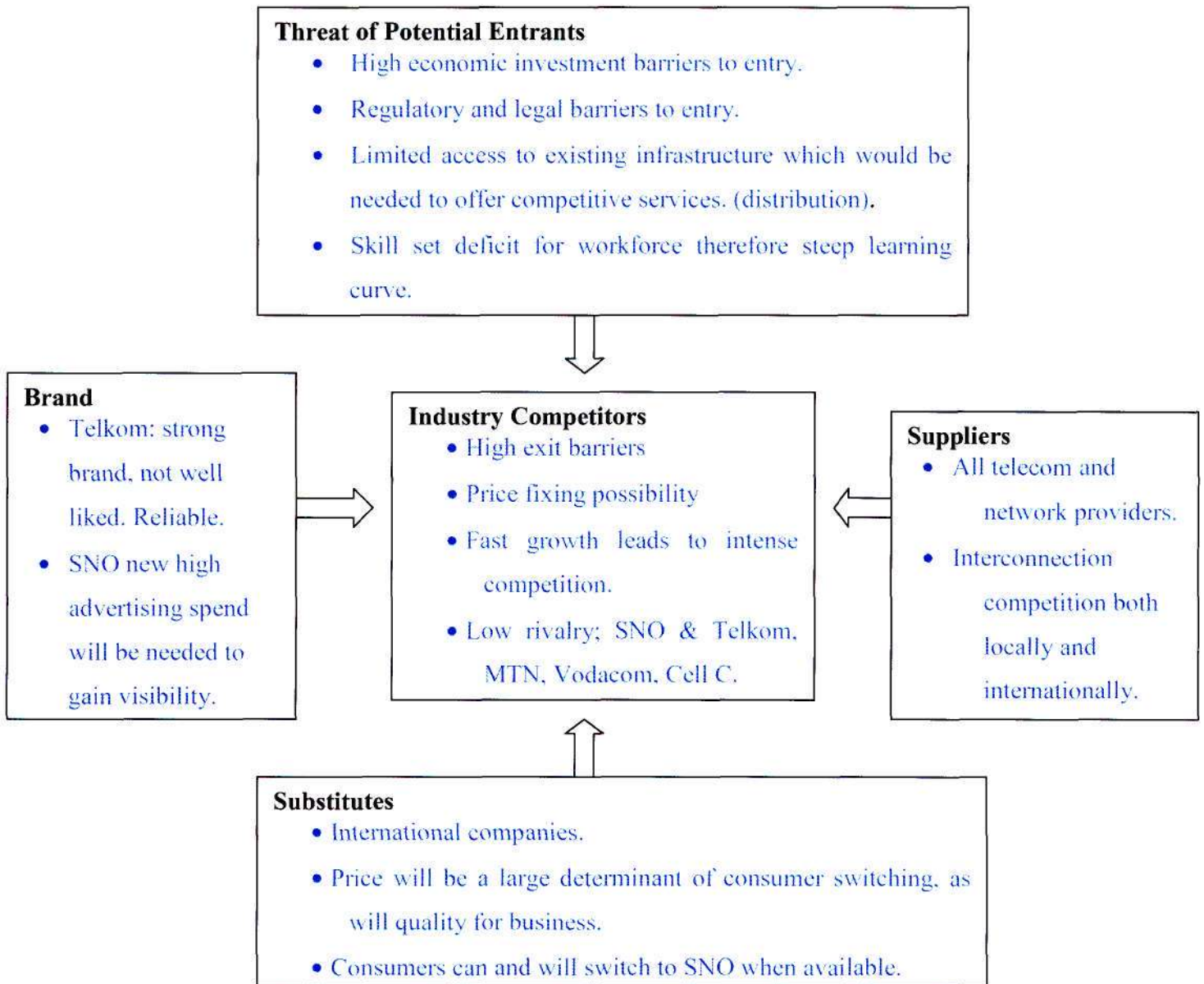


Figure 2.2: Porter's 5- Forces Model

2.7 Conclusion

Governments by their very nature tend to be inefficient due to the cumbersome processes and layers of management involved in managing themselves. By removing large companies that could turn profits and improve efficiency, from the stranglehold of the government the overall economy stands to improve as the GDP increases, and overseas investment is tempted into SA to compete against local companies. All of this adds to the money cycle in SA, which will ultimately increase the living standard of each and every South African citizen.

This chapter has examined the theory around deregulation of state owned enterprises but in order to see how these theories may or may not be relevant to the South African context a thorough understanding of the components of the South African market must be gained and an examination of those components will be undertaken in the next chapter.

CHAPTER THREE

Components of the South African Telecommunications market.

3.1 Introduction

When mobile telephony licenses were granted in South Africa in 1993 Telkom had their introduction to competition. Both MTN and Vodacom were granted 15 year licenses to offer services to the South African market. Then in 2001 Cell C was also granted a licence and the voice market was now entirely different to what it had been ten years before. The steep learning curve experienced by Telkom at that time however, will be a microcosm of what the incumbent fixed line operator is about to experience with the introduction of the SNO. A brief history of Telkom and an introduction of the Second Network Operator, their ownership and networks will follow in this chapter.

3.2 Telkom

3.2.1 The history of Telkom

Telkom define themselves as the “largest communication services provider in Africa based on operating revenue and assets”. (Telkom: 2006). Due to the nature of the closed industry, the history of telecommunications in South Africa is largely one and the same as the history of Telkom themselves up until 1996.

Although this commercial enterprise has been operating since October 1991 (initially under Managing Director Danie du Toit), Telkom has operated in one form or another since approximately April 1860 when the first telegraph was installed between Simonstown and Cape Town by the Cape of Good Hope Telegraph Company (*Telkom Ltd* 2006). The first point to point telephones were installed between the Chief Clerk’s house and the St George Street Telegraph Departments two years after Alexandra

Graham Bell invented this device which allowed people in different places to talk to each other. Progress continued with a submarine cable between Europe and Durban being installed with service commencing on the 27th December 1878, and the first telephone exchanges implemented (in Port Elizabeth in 1882).

From 1884 the Post Master General (then GW Aitcheson), controlled the now amalgamated Post Office and Cape Telegraph Department. It would be 106 years before the telecommunications department would again be entirely independent of the Post Office.

Even as far back as 1895, the telecommunications department was implementing controlling measures. A regulation was passed preventing any phone apparatus being hired or used that did not come from the department themselves. In 1905 underground cabling was installed in the major centres, and in 1909 the Department of Posts and Telegraphs came into being under the directorship of WT Hoal (the first Post Master General of the Union of South Africa). Circa 1918 the first Labour Union for telecommunication workers was announced in Johannesburg; The Telephone and Telegraph Association. Nine years later in 1927 what is now called the South African Broadcasting Corporation (SABC), and was then called the African Broadcasting Company, was established. Forty nine years later in 1976, the Broadcasting Company would finally come into its own when TV1 was launched on the 5th of January.

It was in 1933, that the first debate regarding the splitting of telecommunications from the postal service arose. It would happen again in 1954, and in 1968 the Post Office Re-adjustment Act of 1968 – Act no 67 of 1968, would be passed allowing for limited autonomy of the post office (*Telkom Ltd* 2006). The 1970's saw great progress for the South African Post Office. The millionth phone was installed in Johannesburg, the department again changed their name (to The Department of Posts and Telegraphs), the first post office trained non-white technicians qualified in 1977, and the South African Post Office was one of the first in the world to migrate from analogue to digital switching. From this stemmed even greater change, which would be affected at a faster

pace. The first Optic fibre cable system was implemented between New Doornfontein and Power Park in 1983. The first proudly South African, all local-made Disa telephone was produced in SA (1984), toll free numbers became a reality (1985), and the Beltel videotext service was offered (1986). Critically diginet (a point to point connection for data users) became available in 1986, and this would be the herald of a new and greater connectivity that had ever been imagined. This was complemented by the introduction of the Frame Relay network in 1988 (*Telkom Ltd 2006*).

The 1990's were not only a time of societal change in South Africa, but also a time of great shift for telecommunications. Danie du Toit was inducted as first Managing Director of Telkom SA LTD on 1 October 1990. He had to manage the ramifications of the first cellular network to go live in South Africa in 1993, the introduction of Integrated Services Digital Networks (ISDN) (also 1993) as well as the commissioning of the first submarine fibre optic link (SAT-2) – again in 1993.

In 1994 the Affirmative Action and Black Economic empowerment programme was introduced within Telkom, and in 1996 the Department of Posts and Telecommunications again changed its' name; this time to the Department of Communications. Up until this time Telkom had been a wholly state owned organization but on the 14th of May 1997 a 30% equity stake was sold to Thintana (a consortium made up of SBC from the USA and Telekom Malaysia Berhad). 1997 also saw the launch of VPN's (or Virtual Private Networks), and the basis for today's ADSL infrastructure (the ATM) was implemented. In addition history was made when Sizwe Nxasana became the first black CEO of Telkom.

By this time Telkom had already been looking abroad at international standards of practice and this led to the introduction of the NNOC (National Network Operations Centre) in 1999. The aim of this NNOC (pronounced 'knock') was to have a central point from which to co-ordinate all network operations country wide.

The new millennium saw the commissioning of two more undersea cables – the SAT 3 (off the West Coast of Africa), and South Africa Far East (SAFE) cable (off the East Coast). In 2001 the launch of the Telecommunications Amendment Act (Act 64 of 2001), gave hope for the first time to many South Africans of an independent Second Network operator, made up of Eskom, Transtel and other as yet unnamed players (Neotel: 2006). ADSL was launched by Telkom, although it had been widely available in the United States of America for some time, and in 2003 the Initial Placement Offering process was concluded and Telkom was now free to register on the JSE as a private company, which it did with alacrity. Soon afterwards Telkom also listed on the New York Stock Exchange.

3.2.2 Telkom and deregulation

Amosweb defines deregulation as “the reduction of government regulation of business, consumers, and market activity”.

Telkom recently underwent what would appear to be a successful privatisation process. The process was supported by an exceptionally active campaign to promote the concept of the general public purchasing shares in the organisation. At face value this would appear to be a win-win situation with the South African public having a share in Telkom and the State gaining increased revenue. What is not publicly disclosed or advertised is the fact that in excess of 18000 Telkom employees lost their jobs between 2000 and 2004 (Pela: 2003). The main reason cited by Telkom for those job cuts was the lack of appropriate skills on the part of the workers. The organized labour movement, CWU engaged in legal action with Telkom about these job losses (Smith: 2003). Telkom applied for an interdict against the CWU to stop the union engaging in what Telkom was referring to as defamation.

Another point to consider is that the timing of the Telkom listing was not ideal. Even though the privatisation of the Telkom and other state owned entities had been planned for a long while, the listing only occurred in 2003. Had it taken place in 1998 for

example, during the telecommunications boom, millions more Rands would have been raised. Fedusa's general secretary Chez Milani commented "It may be wiser to wait for a more bullish market in order to ensure that the company is not sold off below its' worth" (Pela & Masango: 2003). The size of the huge state owned entities prohibits them taking advantage of prevailing market conditions, and thus they lose out on any major advantage they were hoping to gain in the sale of the organisation.

Any organisation operating in South Africa today needs to be aware of their social responsibility to the growth of the people within South Africa. The Telkom Foundation spearheads the organisation's social responsibility drive, which focuses principally on education, specifically mathematics, science and technology. Telkom views the latter fields of study as essential for the development of the country. Private funds from shareholders are what go into the coffers of the foundation and it has been given priority, which is exactly what SA needs. According to ex Telkom chief executive officer, Sizwe Nxasana, "If we are going to mould ourselves into a competitive country, we need children who are qualified in maths and science and understand technical subjects. This can then create a pool of scholars, from which we can develop engineers, accountants, doctors and other skilled individuals the economy needs." (Nxana: 2003).

One of the aims of the listing of Telkom was to create the opportunity of ownership and to promote a savings culture. The transfer of ownership to a large shareholder base was an ideal opportunity to empower historically disadvantaged South Africans who would benefit from shareholding. It brought hundreds of thousands of new investors, including stokvels (an informal group who pay a monthly amount the benefit of which is paid out to rotating members of the group), into the investor market and enabled them to share in the benefits of trading.

3.2.3 Current Telkom Service offerings.

Although generally not well regarded by their competitors Telkom is often perceived to be monolithic and slow to respond to market trends, Telkom has a large basket of services from which to choose.

- Internet Services:

This division, called Telkom*Internet* began in 2000 with the standard dial up service offering. After two years, the introduction of various faster speed options like ADSL, ISDN and (arguably faster) Satellite services saw a considerable growth in their client base. Telkom*Internet* is one of only three first tier Internet providers in South Africa (first tier meaning that the provider brings their own bandwidth into SA), and in fact only carries a marginally smaller portion of bandwidth in and out of SA, than Internet Solutions.

Value Added Network Services include hosting of data in Internet Data Centre's (IDC's) around SA, as well as networking services and Internet/ networking security services.

Figure 3.1 introduces some of the statistics regarding Telkom's customer base and revenue.

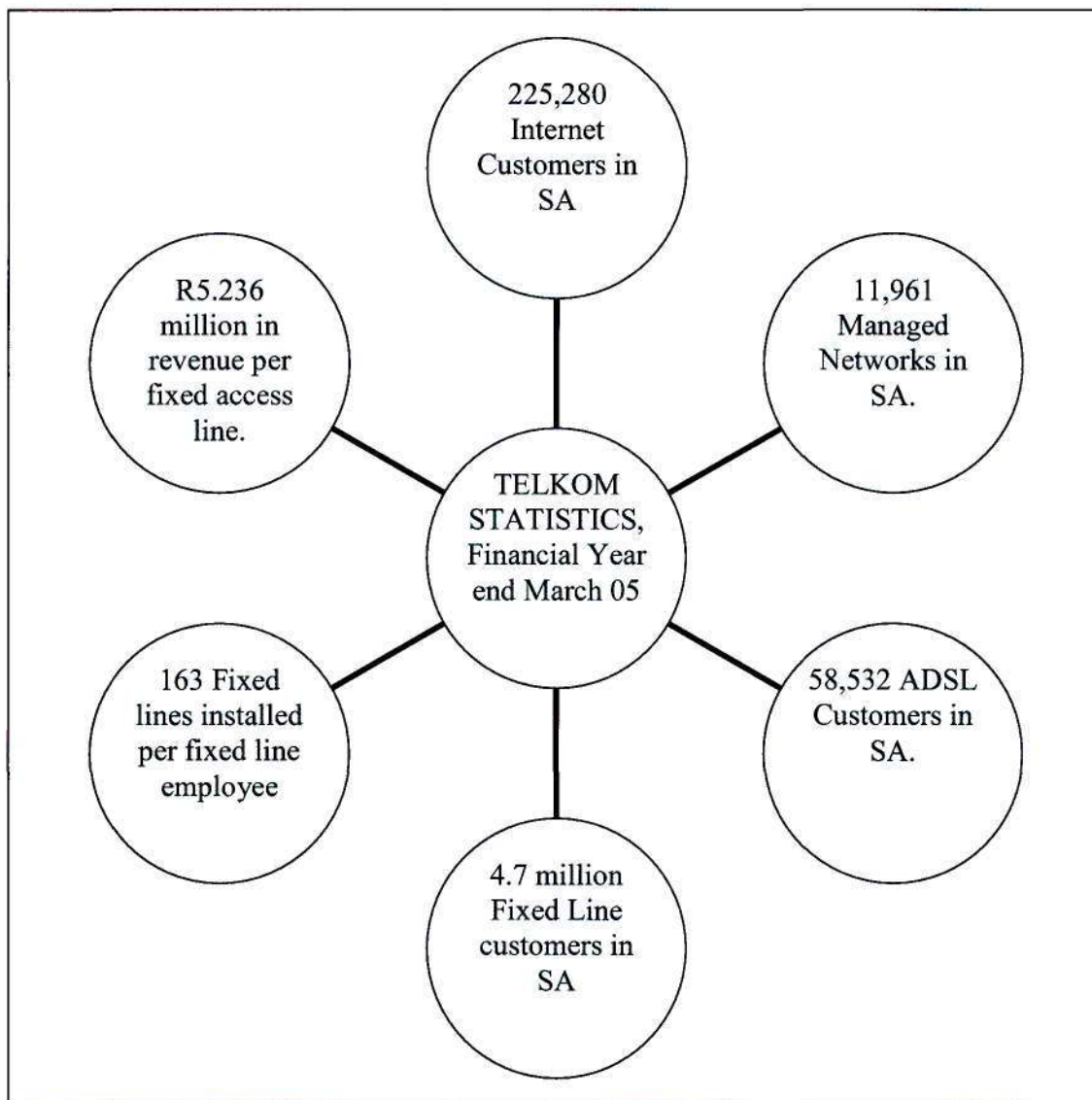


Figure 3.1: Telkom Statistics March 2005. (Unauthored website Telkom LTD: 2006)

- Mobile communications

The Telkom Group is comprised of both a 50% share of Vodacom (one of the largest cellular providers in Africa) as well as the South African incumbent fixed line operator; Telkom. Vodacom currently enjoy a market share of approximately 56% of the mobile space in SA which accounts for roughly 12.8million subscribers locally and an additional

2.7 million subscribers in Africa alone. In Lesotho, the Democratic Republic of Congo and Tanzania, Vodacom is already the market leader, while in the first eighteen months of operation in Mozambique Vodacom managed to take 33% of the market.

- PBX's

Telkom is currently the market leader of this deregulated, mature market, and although this is often cited as an example of Telkom's superior financing, maintenance and expanded range, it is just as likely to be the natural outcome of clients wanting to minimize credit payments and problems that may arise from having more than one support service. It is also an 'inherent sale' in that Telkom supplies the lines so is fully aware of when the service, as well as the compatible PBX's will be made available.

- Cross Border Strategy

Telkom is exceptionally interested in expanding their business interests into Africa. Although they may already enjoy an access point into Africa due to the Vodacom connection, Telkom are looking at possible joint ventures, new license acquisitions, equity partnerships and management contracts so that they may begin to ensure sustainable growth into the future.

3.3 Neotel: The Second Network Operator

3.3.1 Ownership

The participants in the second network operator were chosen as much for their diversity as they were for the contribution they could make to ensuring the success of the SNO. State owned Eskom and Transtel were the first named shareholders announced as early as 2001 (when the Telecommunications Amendment Act was released). They were followed by Nexus Connection (the BEE consortium), Tata Group/ VSNL (who was awarded

26%), Communitel and Two Consortium (who was finally awarded 12.5% along with Communitel).

➤ Eskom

On the Eskom internet homepage the vision of the organisation is stated as “***Together building the powerbase for sustainable growth and development.***” (Eskom: 2006). This self financing utility company supplies more than half of the power consumed on the African continent (Neotel: 2006), in addition to being one of the top five largest utility companies in the world and still being one of the lowest cost producers internationally. For the financial period ending 31st March 2006 Eskom declared a R5, 4 billion profit (Eskom: 2006), which is very positive especially for a State Owned Enterprise.

The wholly owned subsidiary of Eskom Holdings, Eskom Enterprises (PTY) Ltd was formed in 2000, when the Electricity Council of Eskom announced their intention to move all of Eskom's telecommunications assets and resources into a separate business unit. This would provide a sound infrastructure base that would provision services for all divisions including Arivia.kom and Eskom. These services would include:

- ♦ Coverage based operational voice and data (both terrestrial and radio links)
- ♦ Voice transmission and related services
- ♦ High quality, high speed mission critical data transmission
- ♦ Engineering, commissioning, installation and support services
- ♦ Value added networking services such as bandwidth management (Neotel: 2006).

This ability to compete favourably on the international stage bodes well for the organization's contribution to the SNO.

➤ Transtel

The telecommunications arm of Transnet, the guardian of all port and rail infrastructure in South Africa, Transtel (a full service private telecommunications provider) has an annual turnover of R700m (Neotel: 2006). This income is generated through the provisioning of services such as transport telecommunications, Voice and data services as well as international satellite services throughout Africa. These services are offered within the confines of the Transtel VANS (Value Added Network Services) and PTN (Private Telecommunication's network) licenses.

Transtel has embarked on an ambitious upgrade path in addition to the 8000km's of cables that already provide services to their internal clients. Copper cabling is being replaced by Optic Fibre, the outdated train order networks are being upgraded, and a national digital microwave backbone has been deployed. In addition to their own upgrades Transtel, has a close working relationship with MTN based on the identification, development and installation of base stations and containers (Transtel: 2006), as well as the investment of 23.7% that Transnet had in MTN until the majority of the shares were sold to Newshelf (Bidoli:2004)

Transtel has an entrenched support network with over 600 multi-skilled technicians and staff as well as 111 remote depots located at all major towns along the railway lines.

➤ Nexus Connection

The BEE partner for Neotel formed in April 2002, Nexus Connection has no less than 134 entities that each holds a stake in the organisation. Each entity whether it is a single individual or a Non Government Organisation (NGO) was chosen based on their ability to contribute positively to the SNO.

Chairman Kennedy Memani (who in addition to sitting on the board at SABC, is the chairman of the Eskom pension fund), was involved in the privatisation of Transtel as

well as the partial privatisation of Telkom (Nexus Connection: 2006). He is joined by five directors, as well as provincial leaders.

➤ Communitel

There are four equal shareholders in this strategic equity partner of Neotel's.

- ♦ Mkhonto We Sizwe Military Veterans Association (MKMVA) (SA registered). A social programme developed to help veterans of the apartheid struggle and their families, this organization participates in commercial activities only to fund their socialistic aims.
- ♦ Telecom Namibia Limited (registered in Namibia). One of the most far-reaching telecoms providers in Africa is linked to the World Wide Web via the underwater SAT-3 cable. A profitable provider, Telecom Namibia has provided connectivity to schools in even remote and outlying areas.
- ♦ Gateway Communications Ltd (registered in the Seychelles, but SA and UK based). Although based in London and Belgium there is a local South African office in Johannesburg. This representative of British Telecom (BT) in Africa, offers Managed Network services, VPN's and links fixed and mobile network operators in Africa with the United States as well as the UK.
- ♦ Premier Contracts Agency LLC (PCA) registered in the Isle of Mann – UK. Staffed by ex BT (British Telecom) employees, this spin-off company was created when BT decided to stop helping build Second Network Operators. Those directors and staff who had extensive experience in this arena decided to break away from BT and Premier Contracts Agency LLC was formed.

➤ Two Consortium

This specifically formed company was incorporated on the 28th May 2003 (Neotel: 2006), to bid for 51% of the South African SNO.

The shareholders in this organization are broken down as follows:

- ♦ Swedtel SA (Pty) Ltd (51%)
- ♦ Blue Planet Telecoms (PTY) Ltd (30%)
- ♦ Telenor Management Partners (PTY) Ltd (19%)

➤ Tata Group/ VSNL

Possibly the most interesting of all the participants in the SNO (due to their previous experience in recently deregulated telecommunications environments), and best positioned to offer greatest benefit, this highly respected Indian company was originally a Government department called “Overseas Communication Services”. With the substantial backing of the Tata Group (worth an estimated US\$17.8 billion) this leading telecommunications provider has been providing networks and telecommunication services to India for 135 years. Based on the ethos of giving back as much as you can to the society within which one operates, the Tata Group has interests in many different sectors. These include but are not limited to the chemical sector (Tata Chemicals), the steel industry (Tata Steel), the watch industry (Titan), the motor industry (Tata Motors) and even the tea industry (Tata Tea) (Neotel: 2006). Though not renowned for their creative naming of their companies, Tata is still looking to the cutting edge of technology to maintain their competitive advantage.

On March 31 2002, VSNL (which stands for Videsh Sanchar Nigam Limited), faced open competition for the first time when the Indian Government deregulated the telecommunications sector and licensed other providers to offer international connectivity.

Currently VSNL owns and operates approximately 42,250 Voice telephone circuits (Neotel: 2006). Massive investment in switching and transmission equipment has boosted the company’s capabilities and allows VSNL to link local Indian companies to approximately 240 international destinations through the use of interconnect agreements

with international companies. The technology is based on satellite as well as undersea cables. The major revenue earned by VSNL comes from linking incoming and outgoing international calls. This revenue is shared with the relevant access providers as laid down in terms of the interconnect agreements.

VSNL has a number of interests in other countries outside of India which, as we will come to understand, means that VSNL has vast experience in setting up organizations in places with a foreign culture (Neotel: 2006).

- ① United Telecom Limited – A partnership with MTNL and Telecommunications Consultants India LTD and Nepal Ventures Private Ltd.
- ① Tata Teleservices Ltd – Operating under the brand name of Tata Indicom, this company offers cellular and basic telephony connectivity across India (not in Kashmir, Jammu and the North Eastern States).
- ① VSNL Singapore Pte LTD – Since 2004 this wholly owned subsidiary has owned and maintained the landing station for the THS Cable. Cable capacity through the Asia Pacific region is also managed by VSNL Singapore and VSNL Hong Kong Limited is a subsidiary that provides value added and telecom services.
- ① VSNL America Inc – Due to being granted an International Common Carrier license VSNL is able to manage end to end connectivity from India to the United States for their VPN clients.
- ① VSNL Lanka Ltd – What began as a voice platform has now grown (due to new licensing) into an Internet service provider as well. Sri-Lanka's telecoms market is growing by an average of 20-25% and VSNL is well positioned to take advantage of this burgeoning market (Neotel: 2006).
- ① VSNL UK Ltd – Another subsidiary, this time of VSNL America, has signed interconnect agreements with European telecoms providers to terminate India bound traffic. Capable of providing next generation Voice services using TDM or VOIP, it launched its wholesale offering in March 2005.

The Tata Indicom Chennai-Singapore Submarine cable (system capacity 5.12 Terabits) was built by VSNL (Neotel: 2006). This cable will have a positive impact on the connectivity between India and the Asian Pacific countries, especially China whose "Per capita income has nearly quadrupled in the last 15 years, and a few analysts are even predicting that the Chinese economy will be larger than that of the United States in about 20 years", (Hu & Khan: 1997). The ability to connect and do business online with a country whose economy is growing at such rate is vitally important to the Indian economy.

The international undersea connections of VSNL encompass 11 Gigabytes of bandwidth on 4 cable systems (SAT-3/ SAFE, SEA-ME-WE2, SEA-ME-WE3 and FLAG). In addition to these cables the SEA-ME-WE4 between France and Singapore is entirely managed by VSNL, one of the founding members. The acquisition of the Tyco Global Network gives control to VSNL, of one of the most advanced undersea cable networks in the world (over 60000km's long).

In summary of the Tata Group, they can benefit the SNO by:

1. Carrier relationships. Already VSNL has direct relationships with service providers in 237 countries. The amount of traffic generated by VSNL gives great bargaining power and allows for negotiation over termination costs.
2. International projects. Already VSNL has set up a number of joint ventures with other companies in First and Third world countries. They have a vast amount of experience in recently deregulated markets, and the backing on international funding.
3. While South Africa is only really embarking on the provisioning of new Access services now, VSNL has extensive experience in the configuration of Access Networks in recently deregulated environments.
4. VSNL has tremendous connectivity throughout the world. Satellite, submarine cable systems and the like will allow for managed network connectivity between countries.

3.3.2 The Neotel Network

Neotel is utilizing the international VSNL network. VSNL has extended its network into South Africa with its' primary PoP (Point of Presence) being in Johannesburg. This IP based network's main connection to the outside world is on the SAT-3 cable where it connects out of South Africa to Sisembra in Portugal from where it is connected to the rest of the VSNL international network. This bringing in of its own bandwidth into South Africa makes Neotel one of 4 First Tier Internet Service Providers based in SA. Current First Tiers in SA are Internet Solutions (Internet Solutions: 2006), SAIX (the Internet arm of Telkom) and Verison Business.

The VSNL network has 400Gbit/s of Global connectivity and 132Gbit/s of peering internationally. Peering is a direct connection into another service provider allowing for faster access to information that would otherwise have to be obtained circuitously. Diagram 3.2 Neotel's international coverage map on the next page is a sketch of the international circuits and connectivity available to Neotel.

It would appear at first glance that Neotel is at risk should the SAT-3 cable (leaving the west coast) 'go down' or fail. However redundancy is built in through the SAFE (South African Far East) Cable leaving the east coast of South Africa as well as through the Satellite connectivity offered by Transtel.

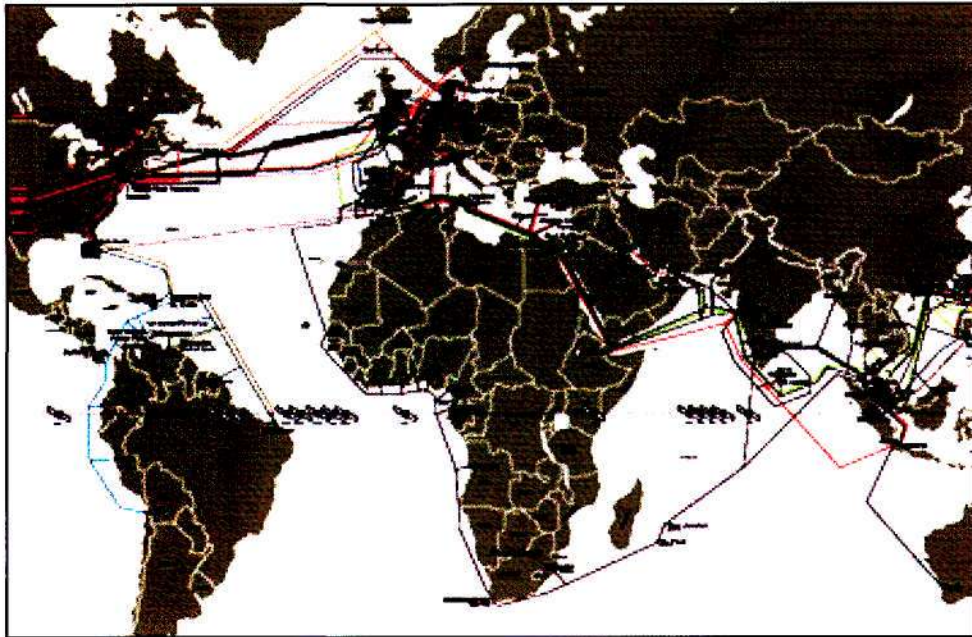


Figure 3.2: Neotel's International Coverage Map. (Neotel: 2006)

Local connectivity (defined as connectivity within South Africa) is illustrated on the next page. This will be based on an MPLS optical Fibre supported backbone, as well as high bandwidth Metropolitan Area Networks (MANS) which support next generation networks. In total approximately 10,000km's of optical fibre will be available for use on the Neotel network.

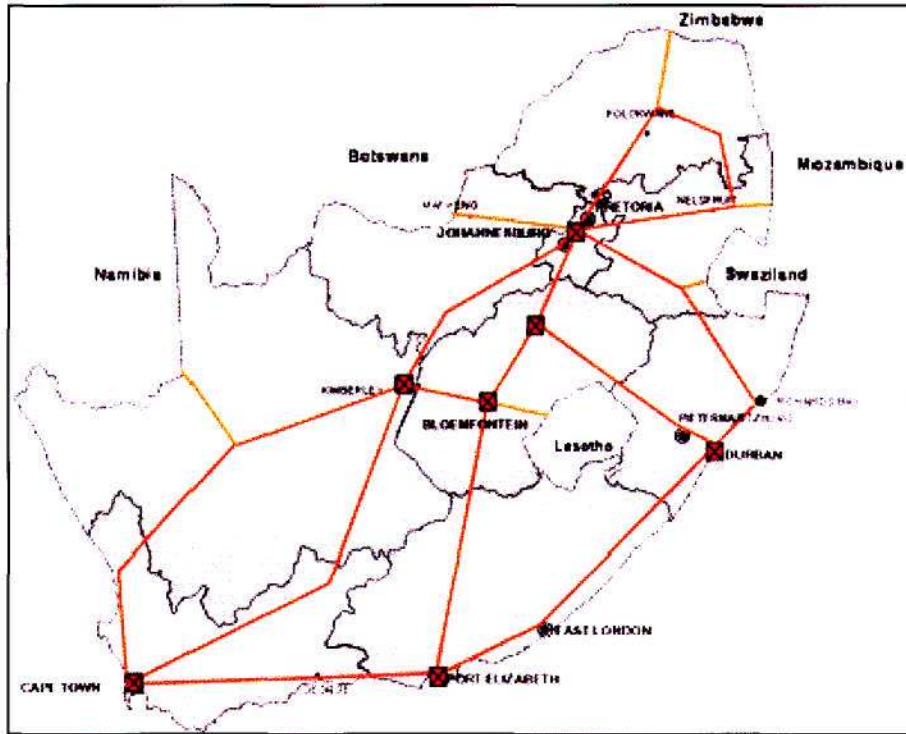


Figure 3.3: Neotel's National Coverage Map. (Neotel: 2006)

Connectivity into the Neotel network will be obtained through the use of diginet point to point connections, as well as through the use of wireless technology such as microwave radio.

3.3.3 Services Neotel provides

Neotel was granted a 25 year Public Switched Telecommunication Service (PSTS) license on the 9th of December 2005. This license was equitable to the one enjoyed by Telkom, and allows for effective competition to the incumbent provider. In terms of this license both Neotel and Telkom are authorized to provide Voice and Data services encompassing local, national, international and fixed mobile services.

Neotel has broken down their services into three main offerings.

- ♦ Wholesale
- ♦ Business

- ♦ Consumer.

- Wholesale Services

These services will be available to VANS and ISP's. Initially only wholesale Internet (access to Internet based information), carrier grade voice services (MPLS based, this service offers interconnects for both incoming and outgoing international calls) and wholesale national leased lines (dedicated point to point bandwidth between branches) will be available. But as the network expands additional services will include wholesale international leased lines (again dedicated point to point bandwidth but this time between international branches).

- Business Services

One of Neotel's aims is to offer converged network services to corporates and business initially in the CBD's and then later on in the outlying areas. Neotel plans to use a mix of services that will include leased lines as well as Ethernet services (off the Eskom backbone) within the major metropolitan areas. The service offerings will include: basic Internet access, MPLS based Virtual Private Networks (secure connectivity between branches with the ability to run classes of service), VOIP services (based on ISDN Primary Rate technology), international leased line circuits (through the use of the VSNL network point to point circuits will be made available), and later on Managed Network Services, Managed Hosting and additional value added services for both VOIP and data networks.

- Consumer Services

Although only looking to offer consumer services in late 2007, Neotel believes that their infiltration into the wholesale market will have a positive effect on the consumers as their price reductions and service benefits filter down. Once ready to go live the services will include:

- Broadband Internet Access/ Voice services: these services will be offered using wireless last mile technology - such as 3G and WiMAX – as well as copper wires and DSL (Digital subscriber loop). Although international standards define broadband as

connectivity at speeds over 1Mb/second, ICASA (the South African regulatory body) defines it as speeds over 256Kb/s (*My Broadband* 2006).

- Number portability: Key to the strategy to offer telephony services to consumers is the ability of that consumer to take his Telkom number with him when he moves to another service provider. In line with ICASA's number portability model, Neotel will be able to offer this service.
- Carrier selection and pre-selection: A service never seen before in South Africa, this service will allow a user to choose the international call carrier of his calls. He can either select Neotel on a call by call basis, or he may 'pre-select' them to carry all his international calls.

3.4 Telecommunications regulatory environment

Two years after South Africa became a democratic country, Act no 5 of 1996 - Former States Posts and Telecommunications Reorganisation Act, 1996 - was released (Polity: 2006). This called for the amalgamation of all the former homeland Republics posts and telecommunications departments into Telkom SA Limited and the South African Post Offices.

The 1996 Telecommunications Act was enacted making 1996 one of the most important years for South African telecommunications. This act had an incredible seventeen (17) objectives with aims as complex as "to promote the empowerment and advancement of women in the telecommunications industry", and as simple as "ensuring fair competition within the telecommunications industry" (Polity: 1996).

Generally though, the aims could be summarized as:

1. The promotion of a stable telecommunications network
2. The promotion of universal access to telecommunications within South Africa.
3. Increased innovation
4. Increased investment opportunities

5. The promotion of historically disadvantaged communities

This act would be the basis upon which the telecommunications industry of South Africa would move forward into the 21st Century. It would also be the act which would lay the groundwork for the Second Network operator and the conditions upon which it could and would be allowed to trade. In addition it lays the ground rules for the signing of interconnect agreements between providers (they are required to have a five year interconnect agreement in place agreeing to the termination of each other's calls at a pre-specified rate so that they can offer local as well as national calling to customers).

Act 13 of 2000 was titled the "Independent Communications Authority of South Africa Act". This act would bring about the introduction of the independent body (ICASA) that would regulate the South African telecommunications market, and be answerable only to the laws of South Africa as well as the constitution. A number of aims were listed; the one aim that would define the path of the market however, was to "regulate telecommunications in the public interest" (Polity: 2006). This would be the guiding aim that would ensure partial liberalization of the market, and no member of the council would be allowed to have conflicting interests if they sat on the board and was part of the decision making process.

In the Government Gazette on the 30th of November 2001, in the Telecommunications Amendment Act 64 of 2001, the fixed line operator was modified from 'Telkom' to '...a holder of a licence to provide a public switched telecommunication service', this indicated a definite shift to the belief that a Second Network license was about to be awarded. It was also in this paper that Section 2 of Act 103 of 1996 was amended with the additional insertions of "(r) promote and facilitate convergence of telecommunication, broadcasting, and information technology", and "(s) develop the Information, Communication and Technology (ICT) strategy for the Republic, in order to bridge the digital divide". For the first time South Africa would have a strategy for attaining ICT goals and this would be primarily driven by ICASA.

Also listed in this act is Clause 32A (2) (a) which reads “For a period of two years after the date of commencement of the public switched telecommunication server license the second National Operator may use Telkom’s facilities on a resale basis in accordance with agreements concluded between the parties for the purpose of providing public switched telecommunication services”. This essentially meant that the incumbent would be forced to allow the SNO to utilize the existing telecommunications infrastructure. The inherent problem however with the above clause is that while it stipulates that Telkom has to let the SNO utilize the infrastructure it gives no guidelines as to the payments and fees that Telkom should be allowed to charge.

The original Telecommunications Act 103 of 1996 had stated that no other provider shall be granted a license to provide telecommunications services other than Telkom until a date specified by the minister. The amendment act of 2001, finally gave the country the date they had been waiting for, 7 May 2002. In reality the granting of the second license was repeatedly delayed, increasing doubts that the license would in fact ever be granted, as well as creating distrust of the entire deregulation process with regards to telecoms, until finally on the 9th of December 2005 the license was awarded to Neotel (Neotel: 2006).

The next milestone Act that was passed in South Africa appeared in the Government Gazette on the 22 June 2006, and this amended the Telecommunications Act which was now to be called the Electronic Communications Act (Act 3 of 2006). In the preamble of the act it mentions that convergence is inevitable. This statement of inevitability has caused turmoil amongst Internet Service Providers and Public Switched Telecommunications providers alike.

3.5 Conclusion

The Second Network Operator, Neotel is going to be facing an exceptionally strong competitor in Telkom. Their infrastructure is embedded and it is always easier to retain a customer than obtain them.

That said there are leverage points that the SNO can use. One of which is their technologically superior network (Next Generation Network), as well as their international links which will enable them to switch voice traffic at an exceptional discount. The fact that Telkom have many disenchanted customers also works in Neotel's favour and all these points should be leveraged off to gain a foothold in the fledgling telecommunications arena.

In the next chapter we will examine telecommunication environments that are similar to South Africa in terms of deregulation, as well as economy. For comparative purposes an environment that is the antithesis of the South African environment will also be examined (the United Kingdom) so as evaluate the outcome of deregulation in both similar and different environments.

CHAPTER 4

De-regulated markets, & a critical analysis of the South African Telecommunications Environment

4.1 Introduction

Starr (1988) comments that privatisation grew from “the countermovement against the growth of government in the West and represents the most serious conservative effort of our time to formulate a positive alternative. Privatisation proposals do not aim merely to return services to their original location in the private sphere. Some proposals seek to create new kinds of market relations and promise results comparable or superior to conventional public programs”. Though enthusiastically embraced in the 1960’s, nationalisation of telecommunications is no longer seen as a necessary or even positive thing, and in fact in many cases it is seen as the main barrier to progress. Privatisation and deregulation however have often been portrayed as the only viable alternative for this burgeoning industry.

It is certainly true that in many cases where privatisation of the state run telecommunication provider’s has occurred, promises of increased service levels, greater innovation and lower costs to consumers have been made. This utopia of telecommunications has not always been delivered upon privatisation and deregulation of the markets within which these Telecommunications providers operate.

Upon investigation into a number of markets around the world such as Brazil, Panama and even the United Kingdom there appears to be some commonalities in how the deregulation of the markets is approached but there is as yet no *de facto* standard;

- a) Deregulation of the market with no privatisation – In this case, ownership of the incumbent telecommunications provider is retained under the state, but the market is opened for competition (either partially with only a few specified services open

to competition or fully where all telecommunications services are allowed to be sold).

- b) Privatisation of the incumbent provider with the gradual introduction of deregulation – This is the most popular it would appear, with most European countries opting for this route as well as some of the Latin American countries. Ownership of the incumbent provider is released from the state and certain sectors of the environment opened to competition (for example it may only be international call carriers who may compete while domestic calls are still carried by the now privately owned incumbent).
- c) Full deregulation and full privatisation of the telecommunications provider – Chile, for example, used this approach when they opened their market up to competition with no strictures in place. The results, as can be seen further on in this chapter, were not always positive.

Each of the above options has its own merits and inherent problems and an examination of these issues will be undertaken in the light of countries that have actually undergone deregulation. For comparative purposes Latin America and India, countries with a similar socio-economic as well as trade, skills and industry background will be examined, and then we will examine the United Kingdom.

4.2 Deregulated Markets

4.2.1 Panama

This country of three million people and nine provinces has 37% of their population living below the poverty line, in spite of a 92.6% literacy rate. (CIA World Fact book: 2006). The services sector is responsible for approximately 76% of the GDP and is therefore vitally important to the growth of the country.

The National Institute of Telecommunications began to privatise in 1996, and in 1997 Cable and Wireless purchased 49% of the incumbent provider. Deregulation followed in 2003, by which time Cable and Wireless had made substantial investments in the country and the infrastructure (Information Technology in Panama: 2006). This slow process of deregulation meant that growth did not occur as fast as was hoped and between 1998 and 2002 the growth of fixed line teledensity had actually decreased, in spite of the cellular market growing from 85,833 to 569,705. However between 1998 and 2000 the number of Internet users had leaped from 17,350 to 42,982 (Regulating Entity of Panama: 2006). This boded well for the coming changes and the Panamanian government embarked on a campaign to get online (ePanama). The result of this has been that although the government websites are purely download and information driven (as opposed to transactionally driven) they are available online for both local and international users to browse. As a result of the deregulation, the cost of data as well as voice calls has decreased, while infrastructure has enjoyed a much needed financial boost. Also as a result of the deregulation, Dell decided to open a call centre in Panama providing employment for close to 1000 people, and the government has plans for a technology park.

Panama also has many obstacles to face, for example there is no substantial development of either software or hardware taking place in the country, and there are very few well trained workers. Intellectual property is neither respected nor is there a law protecting it, and corruption is rife. Government has, however put incentives in the form of tax and legal concessions, in place so as to encourage international investment in the telecommunications sector of this country.

4.2.2 Colombia

Seen as a democratic country with modern politics, Colombia has a decentralized government. Liberalisation of the telecommunications environment in the late 1980's, was seen as an important step and the plan was called 'Apertura'. It was only in 1990 though, that legislation began to get passed that would ensure liberalization came into

play, and only 1994 when new competition began to appear. It was also in 1994 that it was decided a regulatory body would be needed to manage the deregulation process.

On the data front, Colombia like many South American countries is a 'cash-is-king' economy and this low embrace of credit cards will impair the growth of the eCommerce industry. The low PC penetration (only 25,000 users with internet access in the entire country, out of a population of 36 million people) and high (relative to fixed line cost) Internet call costs will also have a negative impact on the ability of this economy to grow (Information Technology in Columbia: 1988).

4.2.3 Brazil

One of the fastest growing economies in the world and currently the tenth largest, Brazil has tremendous attraction for international companies looking for a base in South-America (Wikepedia: 2006). Brazil has an approximate capital investment of US\$5,055.40 million as well as 41 million fixed telephone lines and 38 million mobile users (Networking in Brazil: 2006). The mobile industry was the first to be deregulated, and has a penetration of about 41.1% second only to Chile in the South American countries. The Brazilian regulator Agencia Nacional de Telecomunicacoes (Anatel) has opened the entire market to competition though it was a phased approach so as to inflict minimum disruption on the market over a period of time.

As of the end of 2005, the entire market had been successfully deregulated and this could account for the widespread development of ICT in the country. Each of the competitors were at one stage a part of the incumbent provider (Telebras) before deregulation, and this would have ensured the necessary skill set that would be required to run a network of any significant size.

The main drivers of technology in the country currently are VOIP (Voice over Internet Protocol) as well as the advent of broadband, though not all regions are in the same developmental band with the main centre's (like Sao Paulo) who are far ahead of the outlying cities (AT & T: 2006).

4.2.4 Bolivia

A typically bureaucratically entangled county in which to operate, Bolivia opened the doors to deregulation on 28 November 2001 when it allowed fourteen telecom cooperatives to offer local services in their own region of Bolivia, as well as competing nationally and internationally. The groundwork for this momentous decision had already been laid in 1995 with the enactment of the Telecom Law whose essence was the deregulation of the market.

Although allowed to compete, the new providers were still forced to use the incumbents' infrastructure and according to Simunic (2003), it would not be "reasonable to expect the incumbent to sell transport to its competitor at a cost and quality that would allow it to be competitive". This meant that the telecoms providers would have to look for their competitive advantage outside of the local environment, and in the case of COTAS-Teledata (a subsidiary of COTAS Ltda), it meant being able to offer international (or long distance) rates that were materially lower than those offered by Entel (the incumbent). Like most environments where the chance to lay terrestrial infrastructure is limited, the mobile market in Bolivia is expanding rapidly.

4.2.5 Chile

Chile is one of the very few markets where partial liberalization was not employed and in its stead total deregulation of the market occurred in 1994. Chaotic and totally subject to market forces, competitors clamoured for the public who could change carriers by merely dialing a three digit code before the number. Competition was so fierce in fact that call costs were forced to record lows and at the end of the 1994 financial year not one provider had made any profit. To a large extent this could be attributable to the high cost of implementation of infrastructure but at one stage the calls to the United States were dropped to as low as 5cents. The end result of the bloodbath of pricing was that the field of operators rapidly consolidated to only five major players (and five smaller ones who together could boast 7% market share) in the market (Quistgaard: 2006).

4.2.6 India

India has a population of roughly 1 billion people and the population is growing at a rate of 1.38% (Wikipedia:2006). In addition the estimated per capita GDP of India is \$619 which is not substantial when you consider it in the context of developed countries. However there is a considerable growth in the economy with a rough 20% year on year growth being recorded between 1993 and 2003.

One of the world's most productive software development countries, many large corporates outsource their development to teams that live and work in this country. This of course has a by-product of a need for faster Internet and greater bandwidth as well as reduced call costs to international destinations.

Deregulation in the market began in 1984, when the client equipment services industry was opened to competition. VSNL (Videsh Sanchar Nigam) as well as MTNL (Maha Nagar Telecom Nigam) were created in 1986, to provide telecom services in Bombay and Delhi as well as providing international calls. VSNL was later privatised in 2002 and Tata Group bought the lion's share of the company, providing the funds and management skill necessary to shepherd this ex-state owned company into the competitive telecom's market. Numerous changes were implemented in the background including the creation of the Department of Telecommunications (1985) as well as the establishment of the Telecom Commission in 1989, but it was in 1992 that the Value Added Services industry was opened to competition. From here it would be as if the floodgates had been opened. The announcement of the new Telecom Policy in 1994, preceded the establishment of the Telecom Regulatory Authority of India – TRAI (who only became active in 1997) by two-years. However it was a busy two years with cellular licenses in four metro areas being awarded, a tender for a Second Network Operator being released as well as a tender sent to market for the provision of basic services (MWL Consulting: 2006).

In November 1998, the new Internet Service Provider policy was released, and in early 1999 the New Telecom Policy came into effect as well. It was however a long wait for

businesses and consumers as the deregulation process took longer than expected. In the February 11, 2002 edition of Business Week Online (Manjee & Einhorn: 2002) the slowness of the process was highlighted and the importance of the deregulation was discussed. Analysts were expecting long distance call rates to drop by more than 50% and teledensity was predicted to increase from 3.5% to 8.5% by 2005. Bhalla (former World Bank economist) commented that the increased penetration of phone services would have a positive effect on economic growth, as for every 10 million new phone lines added, 0.5% could be expected to be added to the annual economic output of the country (Manjee & Einhorn: 2002). He further added that the infrastructure was inefficient and that inexpensive phones were a lifeline for business operating out of the area. Nilekani (CEO of Infosys Technologies LTD – an Indian software development company) commented in the same article that “The increased penetration, productivity, and low cost will increase the potential for IT solutions in India” (Manjee & Einhorn: 2002).

Within the basic services industry, there are currently only six private operators offering services in India in spite of the fact that 31 licenses (excluding MTNL and BSNL) have been awarded. VSNL (predominantly owned by Tata) is discussed in more depth with regard to the ownership of the SNO in South Africa, but suffice to say that they carry a large portion of the international traffic leaving India and have a number of interconnects. Government is encouraging the participation of the private carriers, from whom it expects the majority of the growth. Although in terms of the deregulation in India there is no limit on the number of operators, all of those granted a license must be majority Indian owned (under the Indian Companies Act).

4.2.7 United Kingdom

The only First World or developed country to be examined, there are a number of lessons to be learnt from the deregulation of the telecom’s industry in the UK. Armstrong, Cowan and Vickers (1992) describe the first period of liberalization in the UK as “a decade of lost opportunity”, and this was largely attributable to the fact that between 1983, when Mercury (a subsidiary of Cable and Wireless created in 1982) was licensed as a fixed line

operator against British Telecom (or BT), and 1991 when the industry enjoyed yet more deregulation, there was in real terms, very little competition for BT. This had a lot to do with the fact the Mercury was only granted access to the local loop in 1986, a position which had hamstrung their ability to offer any kind of material competition.

1979 saw Margaret Thatcher (then Prime Minister) embark on a series of Governmental reforms pivotal to which was privatizing the monolithic government run Post and Telecommunications Department, as well as other state run enterprises. To this end, in 1981 British Telecom was split from the post office, and in 1984 BT was privatised as an integrated company with 50.2% of the shares being sold. The introduction of Cable and Wireless into the BT run telecommunications market didn't upset the incumbent to any major degree and the duopoly was in place till 1990. In 1989, however there had been rumblings from government about deregulating the market even more, and no one was surprised when the provision of local access was liberalized. What did take the market by surprise however, was the 1991 announcement that cable companies would be allowed to offer telecommunications services (Pollitt: 2002).

In the cellular arena, BT had been competing with Vodafone since 1999, but had enjoyed a monopoly on the market since 1985, when it had created a joint venture with Securicor called Cellnet specifically to offer cellular services. BT later bought out Securicor and Cellnet was now 100% owned by BT (Pollitt: 2002)..

1990 saw the re-organisation of BT, something which traditionally should have been done the moment a competitor into their market was announced in the early 1980's. However BT saw no reason to do it at that stage, as they perceived there to be little competition from Mercury, and it was only in 1990 when more competition was coming into the market, that they suddenly had to improve their game and become more efficient. In fact a criticism of Mercury came from Laffont and Tirole (2000) when they said "Market forces would have picked a better competitor than the deregulators did".

The United Kingdom may have been expecting the early 1990's to be a kind of shake-up in the market, but in fact it endured some of the same problems it had in the past. Local access in the early 1990's was still heavily dominated by the incumbent and in fact in a declaration by the European Union on the slow development of competition, this same problem seems to have appeared in other European countries. It would appear then that local loop access is crucial to the ability of any Second network operator to effectively compete.

There were a number of issues around the provision of the local loop. British Telecom was at one stage accused of driving up the local loop access pricing so that competitors couldn't compete. Some market analysts, however, say that in fact competitors were in fact just looking to "cherry pick" the more lucrative business market as opposed to having to provide cheaper less profitable residential access. As many competitors were forced to use the BT installation engineers to install lines (in terms of provision of access licenses), BT was also accused of anti-competitive behaviour by slowing down the installation of competitors' lines and this was only rectified when a punitive system was implemented for slow installs (Peplow: 2005).

One of the outcomes of the deregulation in the UK, was that from 1993, BT began to look at joint ventures with companies who could help them expand globally. They were particularly interested in markets that were undergoing deregulation and as then Chairman Iain Vallance said when questioned about this expansion "We have 12 years experience of competition, they have none" (Pollitt: 2002).

4.3 Analysis of the South African Telecommunications Market

Fransman (2002) believes that the global telecommunications industry can be divided into two distinct periods. The first period is from inception of the market till the mid 1980's when deregulation started to become a reality. The second is from the early 1990's to the present. Fransman (2002) believes that each period is concerned with its own specific layers as illustrated in Table 4.1 below.

Layer	Activity	Layer	Activity	Example Companies
III	Service Layer. (voice, fax, 0800 services).	VI	Customers/ Consuming	
II	Network Layer. (Circuit-switched network)	IV	Application Layer, including contents packaging. (e.g., web design, on-line information services, broadcasting services, e-commerce etc)	Bloombergs, Reuters, AOL-Time Warner, MSN, Newscorp.
I	Equipment Layer. (switches, transmission systems, customer premises equipment	III	Navigation & Middelware Layer. (e.g., browsers, portals, search engines, directory assistance, security, electronic payments, etc.	Yahoo, Netscape, Vizzavi, Google, Genie etc.
TCP/IP INTERFACE				
		II	Network Layer (e.g. Optical Fibre network, DSL, local network, radio access network, Ethernet, Frame Relay, ISDN, ATM Etc.)	AT & T, BT, NTT, WorldCom, Qwest, Colt, Energis, Vodaphone, NTT DoCoMo, etc.
		I	Equipment and Software Layer. (e.g. switches, transmission equipment, base stations, routers, servers, CPE, billing software etc)	Nortel, Lucent, Cisco, Ericsson, Nokia.

Table 4.1 Fransmans Layers of the Telecommunications Industry (Fransman: 2002).

South Africa is still only on the cusp of effective deregulation which translates into being quite far behind the curve of development. The very fact that South Africa has its own

South Africa is not seen as a country in major need of international help with regard to telecommunications, though the same cannot be said of the neighbors on the African continent, some of whom are in dire need of help (like Lesotho).

4.3.1 PEST Analysis: Outcomes

From the PEST (Political, Economic, Social, Technological) analysis done in Chapter Two, we can see how many of the current influencers on the telecommunications environment are in fact inter-related.

<u>Political</u>	<u>Economic</u>
<ul style="list-style-type: none"> • As a result of globalisation, South Africa is under pressure to compete internationally. Telecommunications licensing is changing on a global basis, South Africa does not want to be left lagging. • One of the pivotal aspects of the SA telecommunications environment, is that of South African Regulatory body (ICASA). A strong regulator is absolutely vital to the process of change that South Africa now finds itself in, and should ICASA be unable to affectively control Telkom, it will ultimately be just another failed government plan. 	<ul style="list-style-type: none"> • Increase in E-Trading among consumers. • Due to introduction of new technologies, natural competition will drive down prices increasing the number of purchases. • In South Africa there has been tremendous sponsorship of sporting and lifestyle events - prime examples being the Cell C Sound of the City (concerts with music artists specifically chosen to appeal to the Cell C market), and the Vodacom “Woza Summer” tour in KwaZulu Natal. It is no accident that the cell providers do more above the line advertising in terms of sponsorship than the fixed line operator, as there is increased spending on cellular

	calls and phones even in the lower income groups.
<p><u>Social</u></p> <ul style="list-style-type: none"> • The need for greater bandwidth is a direct result of globalization and the increased importance of file and multi-media sharing. • Increase in E-Trading among consumers. • Consumers demand instantaneous communication as delays often translate into perceived bad service and consumers are demanding increased service levels. • Increased competition from global companies so a much lower cost to consumer to switch providers. • Due to introduction of new technologies, natural competition will drive down prices, and as a result Internet and telephony access will be more accessible in terms of price and coverage to the population in the lower LSM's. • In South Africa there has been tremendous sponsorship of sporting and lifestyle events - prime examples being the Cell C Sound of the City (concerts with music artists specifically chosen to appeal to the 	<p><u>Technological</u></p> <ul style="list-style-type: none"> • Need for increased and faster bandwidth. • Increase in E-Trading among consumers. • Due to demand for instantaneous communication and better service levels more bandwidth is needed. • Due to increased globalisation there is an increase in Spam email and viruses and this increased use of bandwidth worldwide. • Due to the increase in traffic, legacy networks needed to be upgraded and a more tightly managed network seemed to be the answer. Consequently packet based and MPLS networks were introduced • Telecommunications licensing is changing rapidly and this change will lead to the introduction of new technologies such as WiMAX and 3G.

<p>Cell C market), and the Vodacom “Woza Summer” tour in KwaZulu Natal. It is no accident that the cell providers do more above the line advertising in terms of sponsorship than the fixed line operator, as there is increased spending on cellular calls and phones even in the lower income groups.</p>	
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Table 4.2: PEST analysis outcomes of the SA Telecommunications environment.

4.3.2 Porters Five Forces Analysis Model: Outcomes

Each of these forces working on the telecommunications environment in South Africa will be examined independently.

Threat of potential entrants – The barriers to entry of the market are quite high. Not only economic barriers exist (as the cost of implementing new networks as well as applying for licenses can be prohibitive), but also the regulatory and legal barriers are high. Although ICASA has ruled that where needed the Second Network Operator must be granted access to the existing infrastructure, the SNO will be required to pay for that access and as the pricing will be negotiated by Telkom and the SNO. Those fees could be quite high. New entrants may not be granted the same regulatory backup as the SNO has enjoyed.

In addition to this, is the skill set deficit. There is already a sizeable gap between the skills needed and those offered by the unemployed who are looking for jobs. Should a new competitor enter the fray, they will have to spend considerable time training a workforce. That said, should new technologies that do not require last mile access – the link between a customer and the local telephone or internet service providers switching

premises- (like 3G and HSDPA) be brought to South Africa by new competitors, they will be able to bypass the Telkom infrastructure, as may be able to bring their own staff who can do a skills transfer to South Africans.

Brand – Telkom presents a conundrum for consumers. Their brand is instantly recognizable to most South Africans. They are fairly reliable (and if not reliably good, they can sometimes be relied upon to be consistently bad. For example when it comes to being consistently late with the installation of leased lines. In the case of Internet Solutions experience, approximately 90% of all installation dates are missed) (Smith: 2006). But their quality is perceived as good. The conundrum comes in when the consumer has to choose between the poor customer service of a brand that they know offers good quality, if pricey calls, compared to a completely unknown entity. The SNO is going to have to invest heavily in advertising to get their brand recognized, and once consumers start to use their services, they will have to get their customer focus right so as to delight consumers.

Suppliers – Should an international partner that provides interconnects withdraw his contract, that would put Telkom or the SNO under tremendous pressure to find another partner that can supply a similar service in the same price range as fast as possible. Suppliers control the local providers' ability to offer international call savings and sometimes can impair the quality of the calls should the switching and routing equipment be sub-standard or the latency be too high. To this end, reputable partners in international countries need to be found and a thorough 'vetting' of the networks and the partners ability to run them, needs to take place.

The SNO has the additional worry of having Telkom act as supplier as well as competitor. In order for any company to make a profit, they are heavily reliant on their supplier keeping their costs low and offering a reasonable service at a reasonable price. The cost of the interconnects and infrastructure that the SNO will have to lease from Telkom, will in large part determine the price that the SNO will have to set in order to make any kind of profit. In this case Telkom can effectively sink the SNO before they

even start by pushing the interconnect prices too high. ICASA has stated that they would only get involved in price setting should the parties be unable to come to an amicable arrangement.

Industry Competitors - All the telecommunications players in the industry today are competitors to Telkom, even the SNO. There has been substantial growth in the telecommunications industry over the last year or so and this growth leads to intense competition. That said, there are only two fixed line operators (and one is not yet offering services) and three mobile telephony providers. There have been accusations of collusion over pricing however (Stones: 2006). This has resulted in market forces not working effectively to drive down costs. ICASA is going to have to keep a stern eye on the market to prevent collusion of the fixed line operators. In addition the high barrier to entry (that of high investment) also acts as an effective barrier to exit, as organizations fight to gain a return on any investments they may have already made when they joined the industry.

Substitutes – This is an industry with a number of inherent substitutes. For example, fixed lines can be substituted with cellular phones. ADSL can substitute Diginet lines. However the providers are limited by the licenses granted by the regulator. There have been rumblings in the industry of a Third Network Operator license being granted and this may impact on the SNO and the incumbent. International operators are also beginning to investigate South Africa as a way into the larger Africa continent and these present substitutes to the fixed lines as well as the mobile operators.

A major determinant of consumer switching for voice services will be price. The cost to switch is not always high for telephony (though it can be substantial in terms of data networks), and in fact in terms of international voice calls, switching providers will be as easy as dialing a three digit prefix before the number.

4.4 Conclusion

The 1970's were a time of nationalization of industry and we have seen in the 1990's and 2000's that deregulation is now the predominant trend worldwide.

There is no doubt that the South Africa telecommunications industry is in a state of flux, and that there is heavy reliance on the regulatory body, ICASA, to ensure that free and fair competition is the eventual outcome of the introduction of the SNO. New technologies that are being introduced are revolutionising the industry and international standards are being employed such as packet based networks (Internet Solutions were one of the only providers using this technology previously), and the use of Next Generation Networks. This can only benefit South Africa's ability to compete on an international basis and attract direct foreign investment into a country that is in dire need of this kind of cash injection.

In this chapter an understanding of international environments was gained, as well as a greater understanding of the South African market through the use of analysis tools. In chapter 5 conclusions will be drawn based on the studies made of the external as well as internal environments in Chapter 4. Recommendations based on those conclusions will then be made.

CHAPTER FIVE

Recommendations and Conclusions

5.1 Introduction

In 2005, France Telecom (France) had an annual turnover of €4,14 billion (Intellasia: 2007), Deutsche Telekom (Germany) had an annual turnover of €59,627 million (*Deutsche Telekom, Annual Report 2005: 2006*) and when Telkom stated its' profits at financial year end 2005 of R6,751 billion, it becomes clear that the telecommunications environment is a lucrative one. The market becomes even more lucrative than previously thought with the advent of new technologies such as WiMAX and broadband. The question that remains however is whether Telkom's earnings would have been quite as large had it not operated in a protected environment. Rose (2005) believes "It would take even more effort not to make money where you are the only operator in an ocean of demand".

5.2 Critical Success Factors

If partial deregulation of the South African telecommunications industry is to work effectively and assist in bringing the objectives of the deregulation to the fore, then Neotel cannot work in isolation against Telkom. Regulatory help will be needed to ensure that Neotel can work affectively and can compete fairly against the incumbent.

Lynch (2000) believes that there are five critical success factors that need to be considered before any decision-making regarding an organisations' strategy can be made.

Sustainability – Any path chosen needs to be studied for its longevity. In an industry like telecommunications for example, decisions can have immediate as well as long term ramifications regarding incomes and expenditures. For example: In South Africa over the

last two to three years Telkom/ SAIX has been aggressively trying to sign large corporate companies to five year contracts so as to hold onto market share when the SNO is able to offer services. Many IT directors saw the immediate savings offered (which were often substantial) and signed the contracts. However, the explosion of broadband was imminent, and this offered a cheaper much faster option at a fraction of the cost. Those that had signed the contracts were unable to take advantage of this new technology, and Telkom had stringent buy-out clauses in the contracts which precluded being able to break or buy out the contracts.

Effective process development – Talking about strategy is easy. Deciding on a particular strategy less so, but the inherent problem with strategy comes when implementation is needed. If effective processes are not in place to support a strategy or a strategy change, then the decision of which strategy to employ is a moot point. For example: When Internet Solutions decided to sell iBurst services, it had not yet modified the Customer Relationship Management (CRM) package to handle the new service. The CRM package, Siebel, manages all customer purchases, provides for double checking of the sales peoples' numbers (and therefore commission), allows the customer to view statistics and allows the support desk to support the customer by seeing the purchases made, as well as the technical contacts. The result was that sales people were unable to claim commission, support desks were unable to support a product they couldn't see as a 'live' (or active) purchase and IS was unable to reliably keep track of the number of items sold, and therefore could neither reliably check the clients billing, nor their own from iBurst.

Offer competitive advantage – The secret to competitive advantage is innovation. If one company can offer something that is not easy to replicate, then they have a competitive advantage over their peers. However, it must be said that technological and process competitive advantage is rarely sustainable as other companies imitate both. It is here that the constant innovation must be employed. Michael Dell of Dell Computers believes that Research and Development (R & D) is less important to a company than ingenuity and a culture of accountability (Stewart: 2005).

An area that has proven to be very effective in terms of competitive advantage for Internet Solutions is their people. The company has an exceptionally strong culture and 'newbies' (new staff members) sometimes feel like they are almost indoctrinated into the company with the mantra of "love what you do and do what you love". That said, the incredible passion that drives staff to work the long hours and weekends, the honesty and integrity that are inherent in all staff, as well as the ability to deliver on all promises made to clients, makes it a formidable opponent in a sales cycle. Internet Solutions staff are highly regarded in the industry and in Kwa-Zulu Natal (KZN) alone four out of the five sales people in the team have been headhunted by other telecommunications companies (such as MTN and Verizon) and have not moved despite the offer of increased basic earnings.

Exploit linkages between the organisation and the environment – No man is an island, or in this case no company, and what this translates to is a number of companies that are linked to any one organization. The word exploit has many negative connotations but what Lynch (2000) is trying to say is that relationships give leverage that can be used to the benefit of all companies instead of one organization using the others to further their own ends. When ICASA granted Internet Solutions a temporary WiMAX license, IS were suddenly in a position to offer Internet access and broadband type services to socially disadvantaged communities like Orange Farm in Gauteng, one of many that went onto the backbone. Though these services normally carry a fee, the terms of the test license precluded IS from charging for this last mile access, and they took a position that they would offer the Internet breakout portion of the line for free. This was a strategic move, as they knew that if ICASA tried to revoke the license at the end of the test period, they could plead on behalf of their newly connected Under Serviced Area License clients (USALS) to extend the license period, if not grant a full license. Orange Farm residents benefited by having an IT centre developed in their area where they could go to learn skills, as well as gain access to the Internet.

Vision – Coats (2005) believes firmly that you should pay someone to 'look out of the window'. To clarify he doesn't mean one should be paying exorbitant salaries to CEO's

to do nothing, what he means is that looking out of the company and into the world of business provides perspective. It allows companies to see what markets are doing and create the big dreams for the company. These big dreams are what drive the company to achieve greatness. Google, arguably one of the most profitable content providers in the telecommunications environment in the world, had a vision to become a place that people love to work. They created an environment that has led to great people fighting over the opportunity to work there. One of the programmes they run allows their staff to own a 'pet project' during work time. A certain amount of time a week is allocated for them to go and research or continue with a project which does not have to be company focused and is at very little risk to the company. It allows the staff to stretch themselves and (not all altruistic) should they come across something they feel will benefit the company they are encouraged to bring it forward and present it to the relative team.

Although not strategies within themselves, the above five guidelines are a litmus test for a strategy that an organizational leader wants to implement.

5.3 Lessons Learned

In Chapter 4 an examination was undertaken of the deregulated markets of sample countries in South America, India and the United Kingdom. Every environment is different and as such deregulation in each environment will have different complications and outcomes. Below is an outcome analysis of each country examined.

5.3.1 Panama

Panama is a prime example of an environment that does not follow the expected outcome of a deregulated market. As previously discussed, deregulation can lead to increased unemployment but in the case of Panama, Dell opened a call centre increasing employment in the region. Call and data connectivity costs decreased as was expected

and tax and legal concessions made it an attractive investment opportunity for overseas investors.

South Africa would do well to make similar legal and tax concessions for investors in the South African telecommunications environment as an incentive to invest in both software and infrastructure. This investment will translate into increased employment and a more attractive environment for other investors.

5.3.2 Columbia

Liberalisation of the telecommunications market began in the late 1980's but it was only in 1994 that competitors began to appear. This delay between legislative deregulation and affective deregulation of the market appears to be a common trait of every environment though the delay times differ.

South Africa experienced a delay between announcing that there would be a Second Network operator and the announcement of who that operator would be. There has also been an 18 month delay between the announcement of the SNO and their ability to offer services. This once again has South African businesses unsure of the immediate future with regard to telecommunications as they wait with anticipation to see when the SNO's services will be available.

Columbia is similar to South Africa in that cash as opposed to credit cards is the predominant medium for transactions and this limits the ability of a large percentage of the population to transact on the internet. In South Africa Electronic cash (E-Cash) can be purchased or earned on a once off or ongoing basis and this will to a large extent alleviate the issue of having to own a credit card, but education of the population will have to take place so as to ensure that this medium begins to be recognised as offering a safe alternative to purchasing with credit cards on the internet.

5.3.3 Bolivia

There are many similarities between Bolivia and South Africa one of which is the challenge of laying terrestrial infrastructure, in Bolivia because of the mountainous terrain and in South Africa because of the distances and size of the country. For both environments this has boded well for the mobile markets and expansion has been rapid.

When the new competitors were finally able to do business in Bolivia they found that though the incumbent provider allowed them to use the infrastructure (they had been ordered to do so by government) the cost and quality of the service affectively nullified their ability to compete. This meant that they had to look outside of Bolivia for carriers of their telecommunication services.

If South Africa looks to the situation in Bolivia ICASA has illustrated proof of what can happen should the cost of using the incumbent provider's infrastructure not be regulated. South Africa needs to learn from that environment and step in to ensure that interconnects and costs for infrastructure provision are not set so high as to prevent Neotel providing an effectively competitive environment.

5.3.4 Brazil

Brazil experienced a phased approach to deregulation where the majority of the competitors in the market had at some point been part of the incumbent provider. This phased approach meant that disruption to the market was minimal. Post deregulation the country has experienced strong development of the telecommunications industry.

South Africa appears to be following a similar path with regard to deregulation as the introduction of the Second Network Operator paves the way for a possible Third Network Operator.

In addition the developmental boom that was experienced after deregulation may also be experienced in South Africa and the government should ensure that a plan is in place for those that may be interested in investing in South Africa due to the deregulation of the environment. That plan should encompass investment options, advantages of investing in South Africa, South Africa's expansion plans for industry, agriculture, social services, telecommunications and other environments and opportunities that may exist for investors in those sectors.

5.3.5 Chile

The final South American country is Chile who adopted an approach of deregulation of the entire market all at one time. This translated into chaos with the bottom of the market falling and competitors rapidly entering the market then dissolving.

South Africa has already illustrated their unwillingness to adopt this kind of deregulation path luckily, as the country can ill-afford the kind of market crash that was experienced by Chile when a price war began. However South Africa can look to Chile to see what might have happened had South Africa chosen this path instead of the more moderate path of partial deregulation. One of the outcomes of the price war was that many of the smaller operators were forced to consolidate and only five major players remained. It is possible that larger participants in the telecommunications environment in SA could look to Chile's experience of consolidation to see what kind of organisations merged so that they could develop a blueprint of the kind of smaller companies that might ultimately present a threat to their market and develop plans to possible buy-out those companies.

5.3.6 India

India is seen internationally as a hub for call centre's as well as for software development. However this only happened once the environment has been deregulated and companies were able to get bandwidth as well as switch telephone calls at a

competitive rate. This deregulation process took a substantial amount of time in India just as it had in other countries.

As most of those call centre's use Voice over Internet Protocol (VOIP) fast, guaranteed bandwidth is a pre-requisite in order for the environment to thrive. Similarly the development of large database driven software also uses a substantial amount of bandwidth. South Africa is viewed as an equally attractive environment for call centre's as South African accents are easy for foreigners to understand and our labour is comparatively cheap (compared to places like the United Kingdom and the USA). The main disadvantage to placing a call centre in South Africa is the cost of bandwidth. Many of these call centre's need to access databases and product information on servers housed overseas and the cost of international bandwidth can be prohibitive.

South Africa should follow a policy of aggressively pursuing the lucrative call centre market and ensuring that the environment in South Africa is more attractive than that in India. With the introduction of the SNO and hopefully more competitive pricing some inway into this will be made, however if the government wants to attract a large amount of investment they will need to ensure that the SNO is a true competitor to Telkom and not just another option for the same service at the same price.

5.3.7 United Kingdom

The UK experienced substantial delays in the early period of deregulation. The opportunity cost for the Second Network operator (Mercury) was never calculated but it translated into consumers paying the same unnecessarily high costs for their services when they could have possibly purchased them cheaper. South Africa needs to be very aware of the reality that this could happen here as Neotel gets ready to offer services. ICASA needs to ensure that Neotel action their deliverables (as laid out in their license requirements) on time or face severe penalties.

In the case of the United Kingdom it was the fact that local loop access had not been granted to Mercury that held back the SNO. This limited their ability to compete with the incumbent. In SA, Telkom is required to allow Neotel local loop access however the regulator has not stipulated what the cost of that local loop access should be. Should the cost prove to be high, Neotel will be unable to set their call costs at rates that are competitive and will lose their inherent worth as a competitor. The regulator has to guard against this happening by ensuring that the cost of access to the local loop is deemed reasonable.

5.4 Telkom and Neotel

The Telkom website (*Telkom LTD 2006*) cites their vision to “be a leading customer and employee centered ICT solutions service provider”, and their values to be:

- We are proud and passionate about who we are and what we do.
- We act with honesty and integrity.
- We promote an entrepreneurial and innovative mindset.
- We treasure diversity.
- We are performance driven.

According to ex Telkom chief executive officer in 2003, Sizwe Nxasana, due to privatisation Telkom has become an organisation that delivers on its commitments. He stated, “I also think we have awoken to the challenges that competition will bring and have worked ourselves into position where we can compete effectively and efficiently,” (Nxasana: 2003). In 2006 this statement can be seen as ironic in an environment where it can take up to twelve weeks to get a diginet line installed, and up to eight weeks to get an ADSL connection installed, whereas in the United Kingdom 71% of homes and business are already connected to the ADL network and it therefore takes a matter of days to get the ADSL service ready to operate (Unauthored; Broadbandchecker :2003)

He further stated, “The real challenge is going to be ensuring growth in the future, especially since this will have to take place against the backdrop of competitors entering the market and our operation as a listed entity”. Nxasana (2003) favoured deregulation of the industry, as he believed it would serve as a catalyst in sharpening Telkom’s investment potential. Telkom has aimed to transform into an integrated communications group that provides services across the full spectrum of digital communications to its consumers and has undertaken extensive investment in technology so as to aid in ensuring it has quality networks. This has been possible because it has been partially privatised, and can now afford to make these upgrades.

The Telkom of today is a very different organisation to the one of yesteryear. Any state owned organization that has privatised has had to undergo tremendous change. There is generally a change of leadership with the inherent state of flux that creates, and companies not used to change may take longer to settle down to equilibrium once more, and re-focus on moving forward into the future. Privatisation also creates a new accountability. Shareholders now want to know what the company is doing, where the money is going and that the leadership is leading the company into a positive future. Shareholders can exert a large amount of pressure on an organization not used to answering to anyone, and this pressure within the company is not something Neotel will have to ‘acclimatise’ to. Being a new organisation has its advantages as Neotel will have no historical issues with which to contend.

Neotel has no list of values nor does it have an official vision section on their internet home page, but they do categorically state in their Strategic Intent section that they “aim to reduce the cost of doing business by enhancing the operational efficiencies of companies through the optimal use of advanced communications technologies and to extend these benefits into the second economy”.

As we have seen in the Telkom section above there is very often a wide gap between intent and delivery and it remains to be seen whether Neotel can deliver on its aims within the time limits imposed by the conditions of their license.

5.4.1 Customer Service

In December 2005, Synovate completed a customer satisfaction survey and concluded that Telkom only had a 70% satisfaction rate. Bearing in mind that this only gives satisfied clients and not absolutely delighted ones (as you need to do in order to retain a client in a competitive environment). To put this in perspective municipalities – traditionally the home of consumer angst- received a higher rating than Telkom. (Rose: 2005). Granted this was in December 2005, and the SNO and its competition is only really a reality that needs to be faced now, 12 months later. One would think that Telkom would have invoked a serious customer service drive prior to the metaphorical horse leaving the barn.

The SERVQUAL (please see Figure 5.3.1.1) or Service Quality model developed by Parasuraman (1985) aims to identify the perceived quality Gaps. The developer proposes that “the perceived quality is dependent on the size and positive or negative direction of Gap 5. In turn, Gap 5 can be managed by the decomposition of Gaps 1-4” (Fleisher & Bensoussan: 2003). The developer of the model goes on to say that customer purchase behaviour is most often predicted by previous pre- and post-sale experience and ten other factors can then be used to close the Gaps.

- | | |
|---|-------------------|
| 1. Reliability | 2. Responsiveness |
| 3. Competence | 4. Access |
| 5. Courtesy | 6. Communication |
| 7. Credibility | 8. Security |
| 9. Understanding the customer | |
| 10. Tangibles (evidence of the service) | |

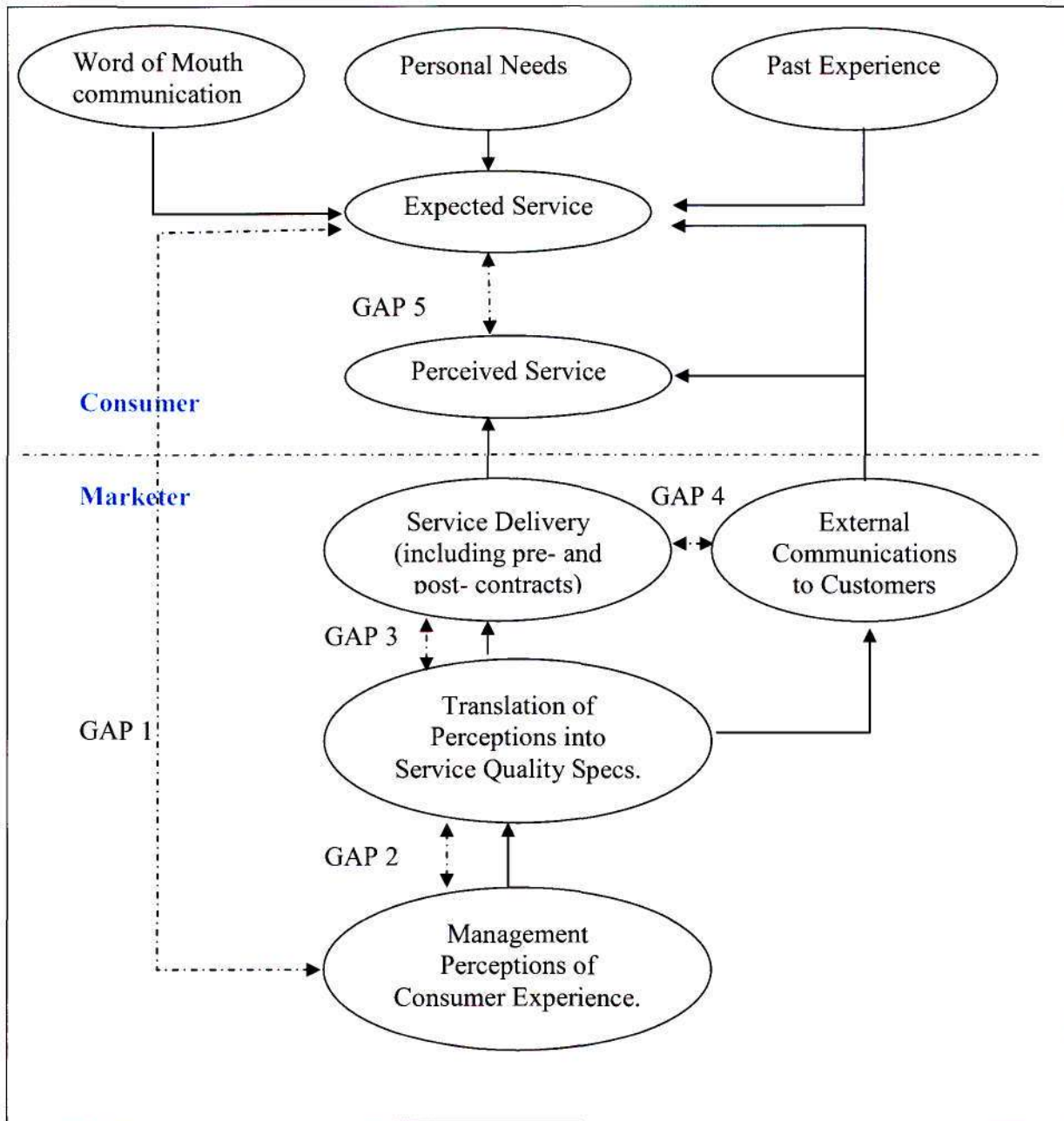


Figure 5.1: Service Quality Model. (Parasuraman: 1985)

As most South Africans have experienced at some time, the customer service from Telkom generally leaves a lot to be desired, and as Figure 5.1 illustrates consumers will expect the kind of service from Telkom that they have always received. This translates into a number of unhappy clients wanting to experience a much better service level from the Second Network operator. This will encompass service areas such as:

- Telephone installation - lead time reduction.
- ADSL/ ISDN/ Diginet installation - lead time reduction.
- Guarantees on uptime of data services.
- Faster response to both data and voice 'line downs'.
- Increased telephonic support, including less waiting time on calls.
- Increased civility and communication skills from telephonic staff.
- Ease of access to services in previously disadvantaged areas.

The recent improvement in Telkom's services with regard to both installation times as well as staff training (to ensure better communication), may have come too late for some. It has certainly come too late to prevent Neotel from leveraging off the perceived lack of customer orientation and lackadaisical attitude of Telkom.

5.4.2 Pricing and Interconnections

These two seemingly different aspects are in fact interdependent. Papi Molotsane, current chief executive, commented in February 2006 that Telkom is expecting to lose between 15% and 20% of its market share when the SNO becomes active in the market (Mochiko:2006). He goes on to say that Telkom is looking at other revenue streams as "A loss of revenue should not bring a decline in profitability". This could be a frightening indicator of the revenue Telkom is expecting to generate through the provision of inter-connect agreements, as in terms of legislation, Telkom is "obliged by the regulator to make its infrastructure available" (Mochiko: 2006).

The Business Leadership SA group believes that "the inter-connection rate would play a major role in determining the SNO's call costs, and therefore the final price charged to consumers". It continues with the obvious statement that "this clearly gives the incumbent operator such as Telkom an opportunity to disadvantage its competitor by setting high interconnection charges". At this juncture two points must be raised.

The first of these points is the necessity of inter-connections. The SNO will begin their business with no customers of their own in South Africa. (Through VSNL they will have inter-connections with countries overseas and they will need to carry that traffic into South Africa and distribute it to the relevant client). Should that end client be a user of the SNO on their network, they will have no problem taking the traffic to them. However should Neotel need to carry traffic to a Telkom client (and vice-versa) there has to be a commercial agreement in place, laying out the cost and service levels, for Telkom to accept that call and direct it across their network to the end user. As the Neotel client base increases and more clients begin to make calls, the need for the interconnection agreement will grow. As the incumbent provider holds the majority of the users, they will be in a position of strength when they enter into negotiations to switch traffic. This means that they can effectively set the price so high that the cost for a Neotel client to place a call to a Telkom client through the Neotel network has to be set so high as to make it prohibitive. The only bargaining chip that Neotel holds, is that the government has a vested interest in ensuring the success of the deregulation process and as such they can expect help from ICASA should the need arise.

The second point is related to the first in that it is the explanation of another interconnection debacle, that of Internet Solutions and the Telkom ATM network. ADSL connections in South Africa can only be provided using the Telkom ATM network. (Please see Figure 5.2 for a depiction of the infrastructure. Bacher: 2005). The only Internet Service Provider that had access into the ATM network was SAIX (TelkomInternet), and this meant that any and all traffic destined for another ISP had to pass through the ATM cloud, into SAIX, and only then into the destination ISP where it could break out into the Internet (through a peering link between SAIX and the various ISP's). In 2004, Internet Solutions wanted to get access into the ATM network so that they could offer IS ADSL services to clients without the traffic having to go through congested peering links. Telkom refused to allow IS to terminate into the ATM network and IS chose to go the legal route so as to force Telkom to allow IS to get an IPC (IP Connect) to carry ADSL onto the IS backbone. The competition board forced Telkom to

allow Internet Solutions to have an IPC but, and most importantly, they did not recommend a rate that Telkom would have to charge Internet Solutions.

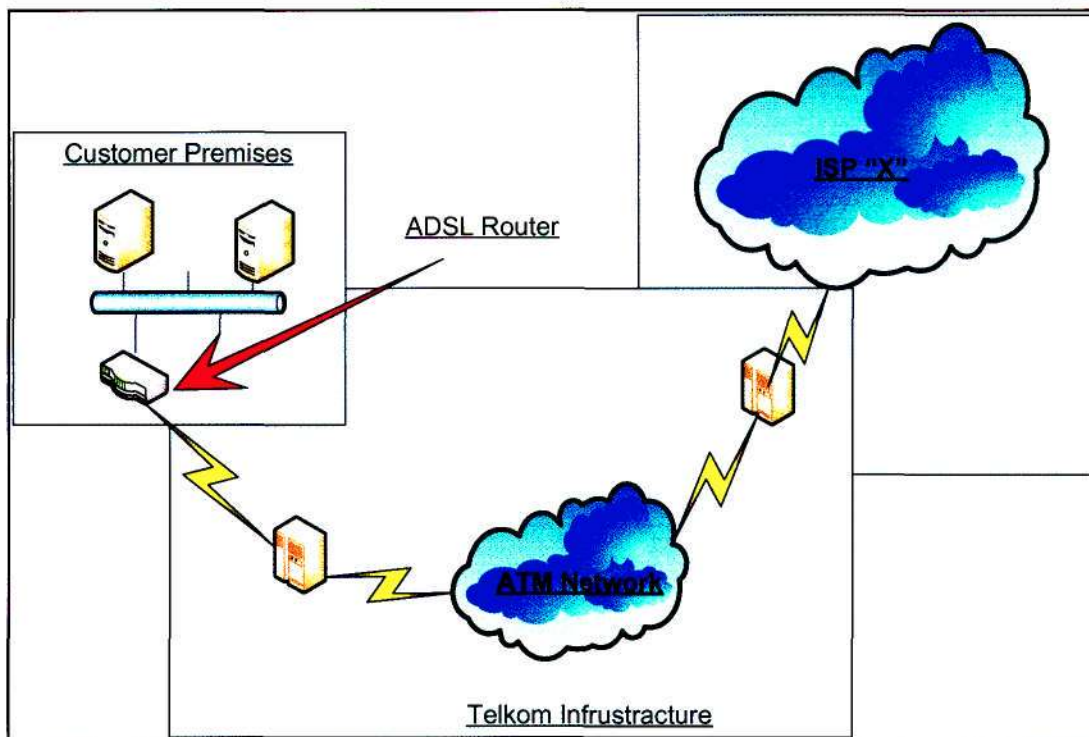


Figure 5.2: ADSL Architecture illustration (Bacher: 2005)

Ultimately Telkom provided the connection, but charged standard retail rates for substantial sized links that would, if provided to a SAIX client, in all probability have been heavily discounted. This in turn meant that IS had to set their ADSL pricing at such a rate that they could hope to recover costs, but SAIX had already set the benchmark when they provided the service before IS had connectivity, so IS had to try and match that pricing or the provision of the service would become academic as clients would find the prices too high. Ultimately it meant that for every 3Gig ADSL service that was provided IS took a loss of R2, just to stay in the market (Martins: 2006).

From the above two examples we can see that Neotel will face serious negotiation when the time to set the interconnection price is upon them, as Telkom is being forced to allow

the interconnections and as illustrated in the disagreement with Internet Solutions, they will obey the letter, if not the spirit, of the law.

Another point to consider is that Neotel will begin trading with a substantial debt. It was announced on Wednesday the 13th of December 2006 (Mochiko: 2006) that Neotel had been awarded an R2 billion loan from various parties to help build its infrastructure. In the same report, Neotel estimated that they would need about R8.5bn made up of 60% debt and 40% equity to finance the building of its network over the next five years. This massive debt will erode any shareholder profits they may generate in the first few years of operation.

In spite of high interconnect fees and operating debt, they will however be forced to offer competitive pricing if they want to get a foot in the telecommunications door.

5.4.3 Technology and Staff

Due to convergence as well as packetisation (the ability to manage the network on a packet by packet basis), faster internet speeds in South Africa and across the world, Next Generation Networks (NGN) are moving towards becoming the de facto standard and to this end, Telkom is currently employing an IP based NGN across South Africa. This network will be capable of carrying Voice over IP, data, video and television services. In December 2006 it was reported that Telkom had announced in Hong Kong, that they were planning on large infrastructure investments of up to R18 billion over the next three years, and in fact in April 2006 Telkom announced a R30 billion investment to carry the IPTV and IP based voice networks that Telkom are planning (Mochiko and Bloomberg: 2006). However one question remains and that is who will maintain these very expensive networks that are being deployed? The current skill set at Telkom is largely based on telephony, many of which are legacy systems that the engineers have been maintaining for years. The new switch to IP based networks, with the problems inherent to those kinds of networks requires not only a mindset shift but also a skills shift. No longer will technicians be required, but engineers.

The international connectivity of the SNO provides for technology rich, and up to date access, to the outside world. VOIP, broadband and other value added services have been running successfully through the VSNL network for years and this experience in technology that is only becoming a reality in South Africa now, will provide competitive advantage for the SNO.

Neotel will, to a large extent, be prepared with regard to IP skilled staff. Leveraging off internationally based staff (through VSNL) who have been providing support to Next Generation Networks for the last few years there is a large amount of information that local staff can gain from dealing with their international counterparts. Adherence to international standards will also ensure that those South Africans employed learn about the standards that will be adopted and in this way knowledge will be shared.

In addition Neotel will have the advantage of not having to deal with state legacy red tape. Telkom is a vast corporation bound by processes and procedures. The SNO will have the advantage of being a little more flexible around customer services and processes. What the SNO will lack however is the 'brick and mortar' presence that Telkom already has in place. With head office in Tshwane and numerous satellite offices around the country, Telkom has a physical presence which will elude the SNO for some time.

Telkom is examining WiMAX technologies as an option to fixed line last mile services. Neotel will be able to leverage off the existing Municipal Area Networks which will aid in their distribution plans for their services, through the Eskom and Transtel networks.

5.5 Potential effects of deregulation in South Africa

In chapter 2 the theories on deregulation and its effect on markets was discussed. Below is a brief discussion on whether or not those theories will hold true for the deregulation environment in South Africa. Although segregated into headings all of the affects listed

below are inter-related. For example a healthy macroeconomic environment will have a large impact on the social environment as well as the technological environment so none of these environments can be viewed as a silo.

5.5.1 Macroeconomic effects

One of the primary results of the partial deregulation of the telecommunications environment in South Africa will be an increase in direct foreign investment. This can be illustrated by the investment already made by some of Neotel's partners VSNL and Communitel (specifically Gateway Communications and Premier Contracts Agency LLC). As Neotel begin to offer services at a competitive rate to Telkom, more and more international companies will look to South Africa as an affordable alternative to India (for call centre's and software development) and other countries. This increase in Direct Foreign Investment may not occur immediately, indeed, it will, in all likelihood, take between 5 and 7 years before the affects are noticeable in the market.

An increase in Direct Foreign Investment can improve the overall fiscal position of the country. As more money enters the market in South Africa there is more money available for consumer consumption and/ or investment. This can drive demand for new and improved services which in turn creates supply and drives South Africa up the supply and demand curve. As the pressure increases for both Telkom and Neotel to be more competitive and try to stay ahead of each other, they will be forced to become more efficient and cost effective in the drive to keep costs low so that margins are increased.

There is often a fear that partial or complete deregulation of a market can destabilise that particular market but in the case of the partial deregulation of the South African telecommunications environment, that seems unlikely. With only two competitors in the market the prices will in all likelihood drop to a certain extent, but it is predicted that those prices will stabilise without any damage being incurred to either competitor. It may force the issue of having to lower prices but no lasting damage to either competitor is foreseen.

5.5.2 Technological affects

Along with the investment of international companies in South Africa comes a certain desire to ensure that the investment (particularly in networks and services) is secure. In the case of technology that often means that skilled personnel will travel to a new environment to oversee installation and training of new staff. In this way knowledge is shared and the South African workforce is improved.

Additionally along with international investment comes a certain expectation that services will be maintained on an international level. New technologies will need to be explored, learned and introduced to the market and this has a positive impact on both the macroeconomic environment (faster and more cost efficient ways of producing and selling may be found) as well as the social environment (as quality of life is improved through new products and people learning to interact through different mediums). Along with other possible technological developments new ways of accessing the internet may be developed as South Africans gain more exposure to international trends. South Africans are by nature an innovative nation (South African's invented the Kreepy Krauly, The CAT Scan machine, Pratleys Putty and other useful items) and increasing exposure to new technology and products will only aid to foster this inventive nature.

5.5.3 Sociological affects

Deregulation in any market has implications for the greater society in which it operates. South Africans frequently lament the bad service received from Telkom, even after Telkom embarked on its customer service drive. One of the hopes for the outcome of deregulation is that customer service levels will improve. There is no doubt that Neotel will have an advantage over Telkom in terms of service as they will not have to overcome the historical perception of below average service. That said having a competitor able to offer similar if not identical services will highlight the need within Telkom to improve service levels as there will be no incentive to purchase services from Telkom if

competitors can match the client's requirements and give an improved customer experience.

Should Neotel commit to certain Service Level Agreements (for example on ADSL services), as Telkom has refused to do that will also inspire consumer confidence and increase Small Business Enterprises as well as big business incentive to invest in this technology rather than utilize the more expensive but guaranteed diginet services.

Unemployment is often seen as an unavoidable fact of deregulation. Telkom has had to lay off workers many of whom have taken early retirement and in fact some of those that were laid off were hired back as contractors. Neotel will also be hiring both telephony trained staff as well as staff who have traditionally been working with data and networks. In the greater South African environment the affect of having partial deregulation will be positive as investment is attracted to South Africa and more companies seek to open branches within the region. More companies and more investment in South Africa will lead to more employment and a better quality of life.

5.6 Regulatory Recommendations

There is a grave concern among the players in the telecommunications industry that ICASA is in fact not strong enough to enforce their policies and procrastinates when required to make possibly contentious decisions. As part of a Christmas special an article appeared with the title; "A wishlist for ICASA" (*A wishlist for ICASA: 2006*). Essentially this was a list of 'wishes' that top competitors in SA would ask from ICASA. A popular theme was that ICASA grant faster licensing of new players, as well as clarity around license and regulations issues. Another theme which came up fairly often was the fair allocation of spectrum to players.

A major concern is that in previously deregulated and partially deregulated markets, growth of domestic market share for the new service provider has historically been

worryingly slow, as experienced in England and India. This is attributable in large part to two issues, namely Local Loop Access and Inter-connects.

The importance of inter-connects has been underlined above. Access to reasonable pricing for the SNO is absolutely vital for the successful penetration of the domestic market and ultimately the attainment of the goals as set out in the PSTS license (Public Switched Telecommunication Service) Rollout Targets. According to these goals, Neotel has to make its services available to 50% of the population in major cities within five years, and available to 80% of the population in ten years. Without cost effective and timeous access to the local loop as well as cost effective interconnects the SNO has little chance of attaining these targets.

To this end the following recommendations would be made;

1. ICASA, as the regulatory body in South Africa, needs to take a firmer stance on aiding in the setting of interconnection fees between Telkom and Neotel. Cognisance of the investment made by Telkom since privatisation needs to be taken into account, as well as an understanding gained of the foundation of the infrastructure that was laid when Telkom was a state owned entity. These should be the guidelines that the body takes into account when it sets the statutory interconnection fees between the two parties.
2. ICASA needs to take a firm stand with regard to the provision of local loop access, as well as anti-competitive behaviour. In Britain, punitive laws were put in place to prevent below the line anti-competitive behaviour occurring. British Telecom (BT – the incumbent provider) were found to be delaying the process of installing Cable and Wireless' clients lines, while their clients lines went in timeously. To prevent these kind of tactics, penalties were introduced by the regulatory body fining BT for late installation of lines (be they data or telephony lines). ICASA would do well to introduce a similar penalty system in South Africa to prevent Neotel experiencing the same kind of delays Cable and Wireless did in the 1980's.

3. One of the final issues that may arise is that of price fixing. As we have seen with the South African cellular providers, who offer similar prices for their SMS and voice calls, price fixing is very easy to do when there are only a few players in the market. Again the reliance from a market perspective will be on ICASA's ability to effectively watch-dog the situation. Should there be signs of collusion ICASA should immediately enforce material penalties.

5.7 Conclusion

As South Africa's importance on the international stage grows, so does the need for faster, more reliable Internet and telephonic access to the outside world. An attractive economic environment means that international companies are looking to South Africa with its' workforce of skilled and semi-skilled workers and strong base infrastructure as a favourable environment within which to set up regional offices. South Africa particularly is seen as a favourable place within which to set up a head office if there is to be expansion into other African nations. The stable economy, political environment and sound (if currently expensive) infrastructure are not available in all African countries and South Africa often operates as the flagship of Africa.

The deregulation and partial privatisation of the South African Telecommunications environment has done much to bring South Africa up to speed with Western countries like the United Kingdom and the United States of America who have embraced the deregulation of their telecom environments.

As the implementation of international networks becomes more of a reality with the increase in globalisation, it is vital that South Africa has the network infrastructure required to keep up with international standards, as well as the vast amount of electronic communication.

In addition the natural result of the introduction of a competitor into the market should be a reduction in prices for the consumer and business client, as well as increased innovation which will lead to a world class competitive environment.

Lynch (2000) recommends four key factors for success for competitors (such as Neotel) into recently deregulated markets;

- a. Counteract threats quickly – whether they originate from the internal environment (Telkom) or from international companies and changing technology. A quick, decisive action needs to be taken to minimize the risk.
- b. Investment of Capital funds – these funds need to be invested in technology to ensure that services and solutions are up to date and cutting edge.
- c. Reduce fixed cost base – The reduction of operating expenses (or in the case of a new operator, the maintaining of a low fixed cost base), is vital to ensuring the profitability of the organization.
- d. Increase use of the services – Telephony and IP based services rely on a heavy flow of traffic to sustain them. Stimulation of the market through marketing and innovation in services and technology are both exceptionally important.

South Africa has been on the cusp of a competitive telecommunications environment for so long that the market virtually dismissed the idea. When the SNO was finally announced in December 2005, and then number portability became a reality, as well as a number of WiMAX licenses being issued, the market finally began to have faith that ICASA would ensure the effective implementation of Neotel. In order to keep Telkom from pursuing unfair practices, ICASA is going to have to implement some strong measures so as to ensure that the Second Network Operator is able to meet Telkom on equal footing and doesn't end up as a technologically advanced but hamstrung white elephant.

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APPENDIX 1: NOMENCLATURE

3G	Third Generation GSM, Third Generation of mobile communications technology
ADSL	Asymmetric Digital Subscriber Line
APN	Access Point Node
ATM	Asynchronous Transfer Mode
BT	British Telecom
COS	Class of Service
EDGE	Enhanced Data GSM Environment
GB	Gigabytes (unit of measurement)
GPRS	General Packet Radio Service
GSM	Global System for Mobile Communications
GSS	Granular Statistics
ICASA	Independent Communications Authority of South Africa
IP	Internet Protocol
IPLC	International Private Leased Circuits
IPTV	Internet Protocol Television
IS	Internet Solutions (Subsidiary of Dimension Data)
ISDN	Integrated Services Digital Network
ISP	Internet Service Provider
KB	Kilobytes
LAN	Local Area Network
MB	Megabyte
MPLS	Multi Protocol Label Switching
NGN	Next Generation Network
NPLC	National Private Leased Circuits
POP	Point of Presence
PSTS	Public Switched Telecommunications Services

SAIX	South African Internet Exchange (Telkom Internet access arm)
SNO	Second Network Operator
VANS	Value Added Network Services
VOIP	Voice over Internet Protocol
VPN	Virtual Private Network
VSAT	Very Small Aperture Terminal
WAN	Wide Area network
WiMAX	Worldwide Interoperability for Microwave Access
WWW	World Wide Web



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19 FEBRUARY 2007

MRS. P TITE (201504937)
GRADUATE SCHOOL OF BUSINESS

Dear Mrs. Tite

ETHICAL CLEARANCE APPROVAL NUMBER: HSS/0016/07M

I wish to confirm that ethical clearance has been granted for the following project:

"Deregulation of the telecommunications environment"

Yours faithfully

.....
MS. PHUMELELE XIMBA
RESEARCH OFFICE

cc: Faculty Officer (Christel Haddon)
cc: Supervisor (Khandija Kharsany)