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The Internationalization Of The South African Telecommunications Sector

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THE INTERNATIONALIZATION OF THE SOUTH AFRICAN TELECOMMUNICATIONS SECTOR

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1. Introduction

South Africa's telecommunications sector is the largest in Africa by important measures, including number of fixed lines, number of cellular subscribers, technological capability, equipment design, manufacturing capabilities, financial revenues, investment and data service users. There has also been substantial and increasing international participation alongside the linked processes of privatization and liberalization. This is consistent with interpretations of globalisation, which hold that there is a range of gains from wider and deeper internationalization of economic activity. I intend to investigate the extent and nature of internationalization in the South African telecommunications sector, determine its contribution to the growth of the sector as well as the degree to which such resource flows are supported by government policies. This paper will examine the impact that cross border telecommunication investment has on the SA telecommunications sector as well as on the economy as a whole.

After an outline of issues from the globalization and telecommunications literature, three key issues will be examined.

First, the extent of foreign involvement in the South African telecommunication sector will be reviewed, covering the provisions of capital, skills and technology in the supply of fixed-line and mobile telephone services. I will examine the magnitude of foreign investments over the 1990s and the extent to which they have been supportive of national goals.

Second, the changing nature of activities of South African telecommunications firms in foreign markets will be assessed. This will include an overview of the increasing internationalisation of South African firms, the main factors driving these trends, and discussion of the implications for their domestic operations.

Third, I will discuss the effect internationalisation has had on the development of the South African economy.

2. Globalisation and telecommunications – some key concerns

Telecommunications is a sector which has been greatly affected by globalisation, and it is an important technology enabling globalisation. This is true for South Africa as in other countries. One of the explicit goals of privatization was to attract foreign ownership which would bring with it skills and technology. The opening up of the telecommunications sector more broadly has involved foreign firms in mobile telephone provision (in partnership with local companies), in value-added network services such as data transmission and in the sale of telecommunications equipment. This is then consistent with greater openness, international competition and integration all bringing capital, skills and technology.

There are different dimensions to the increased internationalization of economic activity. It is useful to be more specific about them if we are to analyse the implications of internationalisation in telecommunications. Although globalisation

and liberalization are often conflated, it is important to separate processes which are driven by technological forces, company strategies, and government policy choices. In this section we briefly outline some of the issues in understanding the relationships between these processes. We then highlight some points from international experiences.

Technology and globalisation

It is possible to distinguish between the global exploitation of technology, global technological collaboration and the global generation of technology (Archibugi and Michie, 1997). Each of these has distinct dynamics. Arguably, the globalisation position outlined above, and the liberalization pursued by many developing countries, has been concerned largely with ensuring the global exploitation of technology. Maintaining barriers to the flow of goods and capital means missing out on the ongoing technological improvements generated by leading firms in advanced economies. On the other hand, international openness means greater awareness and access to information flows.

Technological information cannot necessarily be easily traded, as the information asymmetry between a buyer and seller means it is difficult for the buyer to price the product without actually being in possession of it. Internalising such market failures and related transaction costs across borders is thus one of the foundations for multinational corporations. Through foreign direct investment the firm is therefore able to maintain control of its technological capabilities while a country benefits from the application of the technology in its own economy. There is little doubt that the spread of information technologies has been accompanied by the rise of telecommunications companies to being among the world's largest multinationals.[1]

While ownership and internationalization allows greater control over technology, FDI may also be motivated by a desire to exploit market power based on factors such as size, as well as technological capabilities. In relatively oligopolistic markets, market share can bring with it large profits, especially in a dramatically growing market such as telecommunications. In understanding globalisation and telecommunications it is therefore important to sort out the different effects of exploitation of technology. It is also necessary to distinguish these patterns from the collaboration and generation of technology. As technology advances, previous discoveries become more standardized and fall in price. With prices falling, returns to companies therefore come from penetrating new markets, such as in developing countries. From the purchaser's point of view it becomes increasingly possible to access the technologies through contractual arrangements such as technology licensing agreements, rather than necessarily foreign direct investment. Similar factors may apply in the area of skills. While foreign companies may inject skills as part of taking an ownership stake, such skills may also be sought in other ways and a country could explore various alternatives.

[1] According to *Business Week* 9 July 2001, the largest 20 global companies by market capitalization include Vodafone, Verizon Communications, SBC Communications, and Nokia. The largest emerging market company is China Mobile, with Telmex, China Unicom and Chunghwa Telecom (of Taiwan) also in the top 10.

The dynamism that is associated with the rapid spread of new services and products (even where the services themselves, such as mobile telephony, may no longer be 'cutting edge' in terms of technology) is undoubtedly spurred by competition. It is important to distinguish the dynamic competitive pressures which new entrants may bring to a market from the benefits from attracting FDI in itself. It is clearly possible to have foreign ownership in a market with little competition.

Critics of globalisation have further pointed to the continued concentration of companies' activities within geographical regions (commonly identified as the triad of North America, Europe and East Asia), rather than being truly global in reach. They also point to the possible negative impacts of FDI on a host economy. These include the repatriation of profits, and the possible driving out of local firms. The relatively small number of companies accounting for global production in many sectors suggests that these profit transfers may be considerable. It is also common for multinationals to maintain their high value activities and development of productive capabilities such as research and development in their home country or region, meaning little technology transfer may actually take place.

In our analysis of the internationalization of the South African telecommunications sector we attempt to sort out these factors, difficult as this is, in order to understand the motivations driving internationalization and its impacts on the domestic economy.

Economic policies

While there is clearly a link between liberalization and the increased mobility of capital and goods, the link between realising the gains from openness and liberalization has been hotly contested. For example, it is increasingly apparent that FDI is most attracted to economies and markets which are already growing (and where there may still be many state controls), rather than FDI being the spark to ignite that growth. Similarly the market failures related to many aspects of the adoption and spread of technology suggests an ongoing, although perhaps different, role for the state. Increased and targeted support for education and training, infrastructure expenditures, and research and development are all factors, which will facilitate the gains from technology.

This has been emphasized by a recent study which, although finding a rising gap in information and communication technology (ICT) between the rich and poor countries of the world, did <u>not</u> find a link between the use of ICTs and economic growth (Rodriguez and Wilson, 2000). Clearly the relationships and causality are more complex. While access to ICTs contributes to growth it is not sufficient, and causality would also be expected to run from growth to use of ICTs. Several cross-country studies of growth have highlighted the importance of investment in infrastructure and equipment such as transport, electricity and telecommunications for growth (Easterly and Rebelo, 1993; De Long and Summers, 1993; Temple, 1998)

International experience

Broadly, countries in Africa and Latin America have tended to privatize previously state-owned telecommunications enterprises through the sale of a significant portion

of equity to a multinational telecommunications company, often of US or European origin. In comparison, some countries in Asia, such as Malaysia have maintained a greater degree of public control, through sale of smaller portions of equity and by selling to many local investors rather than one (or two) large foreign entities.

Larger foreign shareholders clearly have a significant degree of leverage due both to their size and the influence that their decisions have for business confidence in a country. For example, in both Mexico and Argentina privatized firms have successfully renegotiated contracts and regulations in their favour (Abdala, 2000; Gonzalez, et al., 1998). Foreign ownership has also coincided with significant concessions to the incumbent in terms of ease of entry, interconnection and other regulations. Increased competitive pressures have therefore not accompanied FDI in telecommunications. Several African countries have followed a similar road with reforms emphasising the attraction of FDI. In contrast, China has followed a policy of staged liberalization and competition, while maintaining state-ownership of the major incumbents. It introduced domestic and foreign competition in the equipment market in 1982 to ensure that the network development utilised advanced technologies (Lyytinen and Gao, 2000). In addition, it allowed state firms to compete with each other.

Lastly, it should be noted that liberalization is not the same as competition. In fixed line services, the incumbent has remained dominant in almost all countries (especially when international calls are excluded), including one of the first to privatize, the UK. Even in mobile telecommunications, one commentator has recently noted that oligopolistic behavior is the norm and that 'the mobile sector has not been disciplined by strong competitive forces within the sector' (Melody, 2001).

3. The South African telecom landscape

Overview of the South African telecommunications sector

With increasing need to liberalize the sector and make it more efficient, the government put in place a partial privatization programme and enacted the Telecommunications Act of 1996. First, Telkom was given a period of exclusivity until May 2002, when a second national operator (SNO) was to be licenced.[2] A technical, infrastructure and managerial partnership was anticipated amongst state run parastatals Eskom, Transnet and Sentech. It appears as if Transnet and Eskom's capabilities will be included in the new operator. The government is also considering licensing a third national operator (TNO) by 2005 if the benefits of privatization are achieved, amongst which is the raising of funds for the state treasury.

The aim of the exclusivity period for the fixed-line operator was to allow for the costs associated with the roll-out of telephone services to historically-disadvantaged communities, to provide time for Telkom's restructuring prior to the introduction of

[2] This could be extended for an additional year of exclusivity if Telkom performs exceedingly well, achieving approximately 90% of their five-year total line target in the first four years of the licence. Despite having reached 90% of almost all of the targets Telkom has not applied for an additional year.

competition, and as an incentive for the Strategic Equity Partners being sought. Telephone services have increased with almost one and a half million new lines being installed since 1997, although high numbers of disconnections due to non-payment must be set off against the roll-out targets achieved (Makhaya and Roberts, 2001). The network is now digitized and services such as the time for installation and fault remedying have improved greatly. However, the latest household survey data indicate that the majority of African urban households remain without a telephone (including a cell phone) and less than 10% of rural households have a telephone (Makhaya and Roberts, 2001).

The number of cellular telephones has increased at a much faster rate and exceeded fixed lines in 2000. Two cellular operators have held licences – Mobile Telephone Network (MTN) and Vodacom Group. As part of their licence conditions, they were expected to meet black empowerment, universal service and the roll out of technology targets. A third operator, Cell-C, is presently setting up its operations to commence in December 2001.

Apart from Telkom, MTN and Vodacom who supply the public with fixed-line and mobile phone services, this sector also comprises private network operators. Transnet and Eskom each have their own networks and capabilities and will participate in the SNO. Orbicon and Sentech are signal distributors. Iridium, Globalstar, Teledesic, South African Regional Communications Satellite and international Gateway stations are satellite operators. Autopage, Paging Plus and Radiospoor perform various services, and FleetCall, One-2-One and Q-Trunk are mobile radio operators. There are several data service suppliers including Swiftnet and WBS, as well as many internet service providers. Equipment suppliers include Siemens SA, ATC, AAT, Aberdare as public fixed line infrastructure suppliers and Motorola, Nokia, Ericson SA and Siemens SA as cellular network equipment suppliers[3].

We now briefly examine the ownership and operations of Telkom, MTN and Vodacom, and highlight changes that have taken place over the last five years in their activities, market share and performance.

Telkom

Telkom SA was created in 1991 from the former South African Post and Telecommunications. Until May 1997, when a 30% stake was sold to Thintana Communications, it was a wholly state-owned enterprise operating in the domestic market. Thintana Communications is 60% owned by the Texas based SBC Communications and Telekom Malaysia (40%), which also has broad representation in many privatized networks around the world including Malawi, Guinea and Ghana on the African continent. Apart from the size of its bid, Thintana Communications won the bid as a strategic equity partner due to its experience in running networks in environments similar to that of Telkom SA. Despite only having a 30% stake, Thintana has operational control under a shareholder agreement signed with government. Surprisingly, profits have fallen since the partial privatization of Telkom, despite strong revenue growth and large reductions in staff. This appears to

[3] For an extended analysis of the contribution of each of the listed companies to the growth of the South African telecommunications sector as well as their activities, see the BMI Tech Handbook, 1999.

be due to the large once-off costs associated with retrenchments and higher depreciation associated with the major investment in the network (Makhaya and Roberts, 2001). Both of these suggest that the underlying profitability of Telkom is strong.

Government plans to sell at least an additional 10% of its interest valued at R1.18 billion before the end of 2001. In addition to raising revenue, this sale is also aimed at furthering the interests of black economic empowerment groups.

Technology, skills and management

Thintana Communications, Telkom South Africa's strategic equity partner, having wide exposure in highly competitive environments was expected to bring in the desired expertise (managerial, technical and marketing) as well as technology. This has formed part of the upgrading of telecommunications infrastructure and services, including digitization, technologies such as digital enhanced cordless telecommunications (DECT) and moving to packet-switching technologies. Reductions in staff have accompanied the technological upgrading, such that the number of lines per employee have risen from 75 in 1997 to 112 in 2000 (Telkom Annual Report 2000).

Linked to the upgrading of technology have been progressive moves by Telkom into the higher value market for services provision, especially to the business market. These include installation of higher speed ISDN lines, voice-related services such as call waiting, as well as data transfer facilities.

Operations

The company's core business is the provision of fixed-line telephony services where it operates as a monopoly. In broad terms, its main products include public phones, small business products like Jupiter, Octophone and Disa plan system, Customer Premises Equipment (CPE) single line products like Teldem, Bureau meters, transmission testers, large business products, text services, non-voice/data, voice and transmission services, and international networks. It is strong in value-added network services such as data transfer and multimedia, as well as other data services and also acts as an Internet service provider. This means that it competes directly with other companies providing these services who rely on Telkom for line capacity.

Telkom also has a 50% holding in the country's largest mobile operator, Vodacom whose revenue rose by 45% in the year ending 31 March 2001, contributing an impressive 16% of the total Telkom group revenue. Overall, the Telkom group's operational revenue increased by 15% in the last financial year, to R32.0 billion.

Vodacom SA

Vodacom SA is 50% owned by Telkom, 31.5% by the UK based Vodafone Group, 13.5% by Venfin and 5% by Hosken Consolidated Investments, a black empowerment investment group. It is the larger of the two mobile operators and has grown rapidly in terms of subscribers, revenues and profits. It is estimated to have

approximately 5 million subscribers, which amounts to approximately 60% of the mobile phone market in South Africa. It has recorded strong growth and now has total revenues of more than R12 billion.

A blend of local and foreign shareholders has brought capital, technical and managerial ability as well as products that better serve the interest of their clients. The 31.5% stake held by the UK based Vodafone group, the largest telecommunication company in the world presents a scenario of advanced technological processes, strategy development and implementation drawn from its experience around the world. Vodafone has interests in mobile networks in 29 countries across five continents (including in Egypt and Kenya) and has approximately 93 million customers worldwide.

Vodacom's coverage is achieved using the most advanced digital technology. The Vodacom Group SA uses a GSM 900 technology network. Some of the services they offer are voice, mobile fax, mobile data, callback, voice mail message, Vodacom 147, Vodacom contract packages, as well as operating an Internet Service Provider, Yebo!net. Yebo!net offers access to the South African market at local Telkom rates and is the second largest ISP in Africa. Vodacom have been seeking authorization from the Independent Communications Authority (ICASA) to operate a GSM 1800 capacity. Their major equipment suppliers are Siemens, Alcatel and Motorola.

On the African continent, Vodacom operates in South Africa, Tanzania and Lesotho. In Tanzania, Vodacom Tanzania Ltd had its operational licence in December 1999 with Caspian Construction and Planetal Communications (Tanzanian based investors) owning 35% of the company's shares and Vodacom Group, 65%. Vodacom and its partners enjoy a monopoly over mobile phone services in Lesotho, with their only competitors being the fixed-line operator. In both Lesotho and Tanzania, Vodacom has been capable of doubling their investments and service targets in their first year of operation – an indication of favourable market conditions and effective strategies by the company. Vodacom Tanzania is today the biggest of all four cellular networks in the country. In Lesotho, a joint venture agreement with the Lesotho Telecommunications Corporation to build and operate a cellular network saw growth in its first year of operation far exceeding its target.[4] This network started operations in May 1996.

Vodacom has a roaming agreement with almost all countries in the world having a touristic or business link with their customers. This makes it possible for Vodacom SA customers to use their handsets on other networks or their sim cards in handsets that are not GSM.[5] Lastly, Vodacom alone handles about 10% of Africa's traffic volume.

[4] See the Vodacom web page www.vodacom.co.za.

[5] As a result of the roaming agreement signed between Vodacom and Iridium, a satellite system, Vodacom users in possession of Iridium satellite handsets can use their Vodacom sim cards in the handsets.

Mobile Telephone Network (MTN)

MTN is 72.1% owned by the Johannesburg Stock Exchange listed company M-Cell, 23% by Transnet and 4.9% by black empowerment groupings. It runs a GSM 900 technology in its mobile telephone network and has a market share (in the South African mobile market) of approximately 40% today. The only foreign ownership in the company was a 30% stake held by Cable and Wireless, which was subsequently sold to SBC Communications of the US, and then to M-Cell in August 1998. As 62.5% owner of M-Cell, black empowerment grouping Johnnic is the largest shareholder in MTN. Government did play a role in MTN through the 24.1% shareholding which was held by the parastatal, Transnet.

With an aggressive African expansion strategy, MTN in just seven years now operates as a leading cellular network in six African countries: South Africa, Cameroon, Swaziland, Uganda, Rwanda and Nigeria. This has involved the construction of operational stations and fixed investment currently valued in excess of R6 billion. As a result, the revenues of its parent company M-Cell have grown more than five-fold in the last two years.

MTN is holder of one of the two cellular licenses in Cameroon. It is 100% owner of CAMTEL Mobile, a previously owned state telecommunications company. In Uganda, it has more than 80 000 subscribers, while in just over 18 months in Rwanda, RwandaCell has achieved a market standing of over 19 000 subscribers. In Nigeria, projected as the best potential market on the continent, MTN was issued one of the four cellular licenses.

As with Vodacom, MTN uses GSM 900 technology in all of its African investments, although they have been planning to move to GSM 1800.

4. Analysis of international participation in South African telecommunications

There are clearly high levels of international participation in South Africa's telecommunications sector from the suppliers of equipment through the operation of the network to various value-added services. In this section we discuss different aspects of this internationalization, and the role of government policies.

The South African government adopted the relatively common path of selling a portion of Telkom to a foreign investor – a strategic equity partner who will directly bring technology, skills and managerial talent to the company. Along with attracting FDI, access to technology was seen as a major motivation for selling to a foreign telecommunications company. A company such as SBC has major ongoing research and development efforts in developing network architecture, systems and software technology. The importance of foreign ownership to the South African government was reflected in the agreement of a monopoly period for Telkom to make the sale more attractive and add to the incentives to invest in the network. This contrasts with the approaches taken in some other countries of maintaining state control over the

network operator, although some of the shares may be in private hands, and relying on licenses in order to access technologies.

The growth and globalisation of the telecommunications sector has also seen the proliferation of equipment suppliers in South Africa such as ATC, Siemens SA, AAT and Aberdare as public fixed-line infrastructure suppliers and Nokia, Ericcson SA, Motorolla, Siemens SA and Alcatel as cellular network infrastructure suppliers. Most of these are foreign though for licensing concerns or strategic reasons most of their products/equipments are manufactured or assembled here.

The driving force of multinationals such as the participants in Thintana Communications is clearly the maximization of returns from their technological capabilities, and hence their expansion into new markets such as South Africa. There is no doubt that the international participation has been part of the technological upgrading of telecommunications services. The question then is whether other approaches (than the Strategic Equity Partner) may also have reaped the benefits of international technological capabilities. In particular, while the monopoly period increased the value of an ownership stake in Telkom and encouraged higher levels of investment and technological upgrading at the same time, it has perhaps slowed internationalization in value-added network services. This is because the monopoly has meant higher prices (even although subject to regulation) and obstacles on the use of line capacity imposed by Telkom.[6]

It is widely perceived that liberalization comes with greater efficiencies, products and services marketed over fixed or cellular networks. Low levels of service extension in countries such as South Africa also represent potential markets. However, the potentially lucrative markets are not in extending services to those without telephones, but in increasing the range of services supplied to higher-income households and the corporate sector. Multinational companies with a range of such services are in a good position to do this, particularly through operation of the network. But, many of these areas are such that smaller and local companies can also develop their capabilities to supply products, conditional on access to the telephone network in place (and its upgrading in terms of bandwidth and digitization). The benefits from internationalization will be enhanced if the area of value-added network services is easy to enter for both local and international companies, ensuring competition and choice.

The perceptions of the shortcomings of state-owned enterprises in terms of skills and technological capabilities provide a rationale for a foreign strategic equity partner. In Telkom's case, this was done through a sale of a minority stake of 30%, which brought in R5.58 billion to the South African economy. This was not only a source of revenue to the government; the purchase of that stake was tied to commitments to install new telephone lines, and digitization of the network. R4.5 billion of the payment made by Thintana was allocated for infrastructure expansion, development and modernization. But, the perceived weaknesses of the state-owned incumbent should not necessarily be translated into a presumption in favour of foreign

[6] For example, Telkom has sought to restrict the operations of international companies such as AT&T and Cable and Wireless, as well as domestic firms, by refusing to supply extra band-width enabling them to provide networking services (*Business Day*, 22 June 2001)

ownership. The success of many South African related firms in the information technology sector demonstrates the potential. This cannot be realized if a dominant company in the network provision is allowed to pursue an aggressive campaign for market share in the market for services.

Technology in today's information age is a major pre-requisite for firms' success. But, monopolistic tendencies will inhibit the ability to use telecommunications as a technology of internationalization.

5. Analysis of international activities of South African telecom firms

MTN, Vodacom and Eskom Enterprises are key South African telecom investors contesting for a share of the African telecommunications pie. With liberalization being embraced by industrialized countries, many follower nations have adopted similar paths for their various economies. National policies and goals have therefore been linked to the desire to achieve the benefits of the global economy through more liberally oriented strategies – a wind blowing over the whole of Africa since the early 1990's. This has opened opportunities for other South African companies to acquire interests in these emerging markets, thus raising several questions: Do foreign operations yield desired returns to outward-investing South African companies? Are these translated into job creation, universal service target achievements and the growth of the sector? This part of the paper presents a brief summary of who is involved in which market and why; the type of services offered and how does this kind of participation (in the host country) affect the South African telecom sector? This is very much a preliminary discussion; much further work remains to be done on these issues.

Differing approaches have been adopted by South African companies, with MTN being the most aggressive outward investor. It has won licenses to operate fixed-line or mobile services in the following countries: Ghana, Uganda, Rwanda, Cameroon, Swaziland and Nigeria (Table 1).

MTN South Africa is 50% owner of the MTN Uganda Group, 100% owner of Camtel Mobile in Cameroon, 70% owner of MTN Nigeria Ltd, and has stakes in both MTN Rwanda Cell and MTN Swaziland. To cite some of the major successes made by MTN SA in its international operations, MTN Uganda is the most used cellular network in that country. Its initial investment programme amounted to $75 million and the license (for fixed and mobile) also committed the company to a minimum rollout of 89000 subscriber lines over a period of five years. Having implanted itself as the market leader in that country through the introduction of advanced telecom technologies and aggressive marketing, Uganda's teledensity has more than trebled from 0.27% to 0.87% - now closer to the African average of 0.98%. There has also been a significant improvement in service delivery, tariffs have dropped by 70%, and the cost of getting connected has dropped from $2500 in 1995 to just $110, including the cost of handsets. In addition to this, Uganda enjoys the lowest international calling rates in Africa. MTN telephone numbers are also automatically used as email addresses of the sort mtnnumber@mtnconnect.co.ug so that ordinary users without

access to a personal computer can communicate cheaply around the world or send and receive short messages as long as 160 words on their handsets.[7]

Table 1. MTN's international operations

Country	Partners	Competitors	Est subscribers
Uganda (mobile/fixed) (50% stake) commenced Oct 98	Telia of Sweden Rwanda Tristar Uganda's Investo	Detecon	82 000
Cameroon (mobile) (100% stake) commenced early 00	Broad Band telecoms	Mobitel	6 000
Nigeria (mobile) (70% stake) commenced Aug 01	Chief Victor Odili Tumde Folawiyo Mallam Ahmed Dasuki Gbenga Oyehode Col (Rtd) Muhammed Sani Bello	Econet – led Group CIL	In start-up phase
Rwanda (mobile) (31% stake) commenced Dec 98	-	-	10 000
Swaziland (mobile) (30% stake) commenced Dec 98	-	-	10 000

Winning one of the three cellular licenses in Nigeria was a major victory to the MTN group who see the Nigerian market as having the best potential market on the continent, with estimated subscribers in excess of nine million by 2010. It is thus so far the most widely represented South African telecom firm on the continent.

Despite having a major international owner in the form of Vodafone, Vodacom's strategy has been less aggressive. In the mid-1990s it favoured the purchase of a portion of an incumbent operator. This was partly due to a shareholder agreement which limited it to investments only in the South African Development Community countries (SADC). This explains why its earlier investments were only made in Lesotho and Tanzania (Table 2). This policy has now been relaxed, though their expansion strategy is now focused on making investments in countries having a history, geographical landscape and economic conditions similar to South Africa.[8]

Table 2. Vodacom's international operations

Country	Partners	Competitors	Est. Subscribers
Tanzania (mobile / fixed) (51% stake) Commenced Dec 99	Caspian Construction Planetal Communications	Mobitel Zantel Tritel TTCL (Cellnet)	52 000
Lesotho (mobile) (88% stake) Commenced May 96		Lesotho Telecom (Eskom/Econet)	14 500

[7] For details on how MTN transformed the Uganda telecom sector, look for Michael Wakazi's contribution in the East African (Nairobi), Opinion – December 10, 2000.
[8] Telephonic interview with Olga Williams, PR Manager – Corporate Affairs, Vodacom.

In Tanzania, Vodacom Group holds a 65% stake in the Vodacom Tanzania Ltd consortium. In Lesotho, it was the sole supplier of cellular services with the government's fixed-line monopoly being their closest competitors. Vodacom is the technology and market leader in both markets. It currently has an eye fixed on the Namibia telecom sector.

Another major South African contestant on the continent is Eskom Enterprises – a subsidiary of the country's main electricity company – Eskom SA (Table 3). Interestingly it has partnered with Econet of Zimbabwe in this strategy. It has keenly contested with MTN in new markets, for example in the bidding for the sale of a 49% stake in Telkom Kenya. Eskom Enterprises was part of the Mount Kenya Communications consortium that won the bid alongside Econet of Zimbabwe and Saslctel International of Canada.

Table 3. Eskom's international operations

Country	Partners	Competitors
Kenya (fixed)	Econet -Zimbabwe Saslctel -Canada	
Lesotho (fixed, mobile and satellite)	Econet Mauritius telecom	

A key question to ask at this stage is which factors give South African investors an upper hand in bids over other African, American, Indian, European and Asian contestants. Factors commonly evaluated in bid proposals include:

- Readiness to pay a higher license fee
- A promise to generate employment growth in the sector
- The presentation of better technology transfer package
- Rollout targets being larger than those of competitors
- Price projections that are competitive
- A declared intention to expand the coverage of fixed or cellular phone facilities to rural and other remote areas.
- Promoting the general interest of consumers.
- Experience in running telecom networks on the African continent.

Clearly South African companies are able to offer competitive packages on these terms. Some losses have been incurred also. For instance, a consortium led by one of MTN's archrivals on the international scene, Detecon won the bid for a 51% stake in Ugandan Telecommunications Ltd – the incumbent fixed line operator. In Tanzania, South African MTN was among four companies earmarked by the Tanzanian Sector Reform Commission to buy the 35% stake in state run Tanzanian Telecommunications Ltd – the country's fixed line monopoly. The license was again won by Detecon/MSI a German and Dutch consortium in June 2000. Detecon's 13-country operational experience on the African continent gave them the edge.

While Telkom SA has not made major international investments, they are part of regional initiatives. Examples are the Regional Telecommunications Restructuring Project (RTR) of the Southern African Development Community and the COMTEL project of the Common market for Eastern and Southern Africa (COMESA). RTR

was established to ensure that SADC member states realize the economic and social benefits of a modern information infrastructure and harness the necessary resources, both financial and technical to develop it. COMTEL was established in early 1998 to promote the establishment of a regional telecommunications network that will facilitate and increase trade relations among the 21 member states and 385 million people of the regional body.

As more and more networks are liberalized on the continent, the South African telecommunications network will continue to be a key player alongside major contestants like Econet of Zimbabwe, Detecon of Germany and others.

6. Some conclusions: internationalization and the South African telecommunications sector

Liberalization and internationalization of the South African telecommunications sector has seen:

- Large inflows of foreign capital. Nigeria and South Africa account for more than 70% of FDI into Africa and telecommunications are a major sector in this.
- Inflows of technology as a result of technology based license agreements or direct participation into local firms via capital ownership.
- The introduction of the most recent technology leads to the provision of better services at more competitive prices.
- Jobs too are created in the process.
- Faster roll out of networks to achieve universal service objectives.
- Better managerial and technical skills that have helped to improve the operations of local companies.
- Offshore investments exploit the advantage of extremely under-serviced markets. South African offshore investments take with them advanced technology, managerial potential, and capital and also creates jobs. The two main benefits in this regard are that key positions are occupied by South Africans and profits are repatriated home, thus earning foreign revenue for the country.

The different experiences regarding internationalization, however, suggest the need to unpick the impact of FDI in terms of technological capabilities from its motivations, including market power. The success of MTN in entering telecommunications markets despite a major multinational telecommunications company as a shareholder suggests that technological, as well as organizational, capabilities can be built by drawing on licensing arrangements and learning from international experience. By comparison, the experience with Telkom indicates that a major foreign shareholder will have significant leverage, which it will use to maximize returns at the expense of broader telecommunications development. While services in South African have undoubtedly improved, compared to the mid 1990s, it is not clear that the rate of change could not have been more rapid under alternative approaches. Specifically, the exertion of market power by Telkom with regard to the providers of value-added

services has to an extent inhibited the potential gains from internationalization at the level of the use of telecommunications.

In telecommunications in Africa more broadly, it is clear that there are a relatively small number of groupings which are contesting for the markets being opened up. More work needs to be done to understand the processes underway and how best to realize the potential that telecommunications offers for economic development.

References

African Telecom Think Tank, "World telecom body set on reform path again", June 28, 1999.

AllAfrica.com, "GSM Operators set to capture Africa's largest market", August 8, 2001.

AllAfrica.com, "Telecommunications Company privatised", March 5, 2001.

Archibugi, D. and J. Michie (1997b) (eds.) *Technology, globalisation and economic performance* Cambridge: Cambridge University Press

Atubra, W. H., Frempong, G. K (2001) "Liberalization of Telecoms: the Ghanaian experience" *Telecommunications Policy* 25 (2001), 197-210.

BMI Tech Handbook 1999: Republic of South Africa.

Choi, S., Lee, M., and Chung, G. (2001), "Competition in Korean mobile telecommunications market: business strategy and regulatory", *Telecommunications Policy*, 25(2001), 125-138.

Department of Communications, "A Green paper on electronic commerce for South Africa, November, 2000.

Easterly, W. and Rebelo, S. (1993). Fiscal policy and economic growth. Journal of Monetary Economics, 32, 417-458

EMC World Cellular database, "Vodacom sitting on the top of Mount Kilimanjaro", April 2,2001.

Gonzalez, A.E, Gupta, A. and Deshpande, S. (1998), telecommunications in Mexico. Telecommunications policy, 22 (4/5), 341-357.

Financial Gazette (Harare), "Econet-led Group wins Lesotho Bid, Firm Eyes on Cameroon Deal", August 24, 2000.

Henkel, V. (2000), "South African Wireless Telecoms: The dawning of the competitive era", UBS Warburg, Global Equity Research.

Internal Finance Corporation (Washington D.C), "Uganda privatizes Telecommunication utility with IFC help", Feb 25, 2000.

ITWEB (Johannesburg), "Mountain Comms wins major share in Telecom Lesotho",November 10, 2000.

ITWEB (Johannesburg), "Mountain Comms wins major share in Telecom Lesotho", November 10, 2000.

Lyytinen, K. and Gao, P. (2000), "Transformation of China's telecommunications sector: a macro perspective", *Telecommunications Policy*, 24 (2000), 719-730.

Makhaya, G. and Roberts, S. (2001), "Telecommunications in developing countries: reflections from the South African experience", mimeo.

Melody, B. (2001) *Telecommunications Policy*

New Vision (Kampala), "MTN enters Nigeria market", February 20, 2001.

New Vision (Kampala), "MTN is best investor", December 11, 2000.

Onwumechili, C (2001), "Dream or reality: providing universal access to basic telecommunications in Nigeria?' *Telecommunications Policy*, 25 (2001), 219-23.

Panafrican News Agency, "Multinationals scramble for Africa's telephony market", March 23, 1999.

Panafrican News Agency, "MTN poised to win bid for stake in Telcom Kenya", August 17, 2000.

Panafrican News Agency, "ADB Approves 9 Billion CFA Loan Guarantee for Telecommunication Company", December 13, 2000.

Panafrican News Agency, "Rush for stake in Telecommunication Network", January 5, 2000

Panafrican News Agency, "Telecommunications Company privatized", March 5, 2001.

SAITIS Baseline studies, "Executive summary: A survey of the IT industry and related jobs and skills in South Africa", January 2001.

Telkom (2000). Annual Report. Pretoria, South Africa.

Temple, J. (1998), Equipment investment and the Solow model. Oxford Economic Papers, 0, 39-62.

The East African (Nairobi), "Three Firms to fight it out for Telcom Kenya", August 18, 2000.

The East African (Nairobi), "MTN modernized Uganda's phone Network", December10, 2000.

The Monitor (Kampala), "Musumba clarifies on MTN", October 11, 2000.

The Supervisor (Maseru), "Telecom Lesotho sale final", November 7, 2000.

This Day (Lagos), "Foreign Telecommunication firms storm country for exhibition" June 28, 2001.

This Day (Lagos), "GSM: MTN launches network today", August 8, 2001.

This Day (Lagos), "We are out for digital revolution", October 16, 2000.

This Day (Lagos), "As Digital Mobile license bid gets underway…Licensee fee hits $150m", January 18, 2001.

This Day (Lagos), "47 foreign Telecom firms storm country for exhibition", June 28, 2001.

This Day (Lagos), "47 foreign Telecom firms storm country for exhibition", June 28, 2001.

The Post Express (Lagos), "Globalization and the need for reform in the Telecom sector", November 23, 2000.

The Post Express (Lagos), "Globalization and the need for reform in the Telecom sector", November 23, 2000.

The Supervisor (Maseru), "Telecom Lesotho sale final", November 7, 2000.

TOMRIC News Agency (Dar es Salaam), "MTN to examine plan to privatize Telecommunication Industry", April 24, 2001.

TOMRIC News Agency (Dar es Salaam), "Private Investor to take over National Telecommunications company", September 27, 2000.

TOMRIC News Agency (Dar es Salaam), "Private investor to take over National Telecommunications Company", September 27, 2000

Vanguard (Lagos), "Nitel floats 49% stake", May 17, 2001.

Wilson, E.J. and Rodriguez, F. (2001), Are poor countries losing the information revolution?" *Telecommunications Policy*, 24 (2000), 795-802.