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# Telecommunications Policies for Sub-Saharan Africa

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# Telecommunications Policies for Sub-Saharan Africa

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*The World Bank*  
*Washington, D.C.*

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# Contents

**Foreword v**

**Abstract vi**

**Executive Summary vii**

**Acknowledgements xii**

**Acronyms and Abbreviations xiii**

**1. Telecommunications in Sub-Saharan Africa Today 1**

Introduction: Telecommunications and Development 1

Sector Performance 1

Sector Reform in Progress 4

Political Context of Reform 6

Conclusions 11

**2. A Policy Agenda for Sub-Saharan Africa 13**

Approaches to Sector Reform 13

Incumbent Strategies 19

Entrant Strategies 24

Key Policy Issues 31

Policy Criteria 35

**3. Strategies for Attracting Private Investment 37**

Sub-Saharan African Telecom Investment Requirements 37

Financial Implications of Sector Reform 39

Internal Financing Options 42

External Financing Options 44

Investor Interest in Sub-Saharan Africa 48

Valuation of Investment Opportunities 52

Conclusions 53

**4. Establishing a Regulatory Framework 55**

Overview of Regulatory Reform 55

Regulation in Sub-Saharan Africa 63

Further Options for Reform in Sub-Saharan Africa 66

Licensing Issues 68

Principles of Interconnection Arrangements 69

**Endnotes 71**



## Foreword

Throughout the world, governments have taken measures to reform the telecommunications sector. The case for pursuing reform, in the countries of Sub-Saharan Africa (SSA) as elsewhere, is founded on the growing importance of information infrastructures in the world economy. In SSA countries, this case is reinforced by the relatively poor service provided to date by state-owned network operators.

In its activities in the sector, the World Bank has given priority to the support of reform measures. The main purpose of the Bank in commissioning this study has been to consider how the Bank's global strategy for the telecommunications sector can be applied in SSA countries. The study has reviewed international experience with restructuring and has made a detailed examination of reforms in progress in a cross section of SSA countries (Benin, Ghana, Mozambique, Tanzania, and Uganda).

From the review of the international experience, the report identifies three distinct types of reform strategy which combine different market structures: incumbent strategy, competitive entry strategy and complementary entry strategy. The classification of reform strategies is then developed as the framework for application in SSA countries. It is accepted that there is no single blueprint for reform that will fit all of the countries. Strategies can be combined in a variety of ways.

Richard Stern  
Director of Industry and Energy Department  
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## **Abstract**

The need for telecommunications sector reforms is now widely recognized in Sub-Saharan Africa. A growing number of countries are at some stage of designing or implementing reforms that seek to attract private investment and open the markets to some degree of competition. This report assesses the performance of the sector, identifies strategies of sector reform that are applicable in the region's circumstances, reviews reform underway as of 1995 in five countries, offers some suggestions on appropriate regulatory regimes, and discusses the prospects for attracting private sector financing.



## Executive Summary

In Sub-Saharan Africa (SSA), the telecommunications sector is predominantly state-owned and has yet to show the benefits from the transformation in patterns of ownership, market structure, and provision of service that is taking place throughout the world. Nonetheless, although lagging behind what has been achieved elsewhere, the telecommunications sector in many SSA countries is performing relatively well compared with other sectors also dominated by state-owned enterprises. How can the reform of telecommunications be accomplished most effectively in SSA countries so as to improve access in the region to both basic services and the new world of information technology?

Telecommunications markets in SSA countries, although relatively small, do have considerable potential. Revenues per main telephone line are high and unmet demand is substantial. Accordingly, current problems with supply of services appear to be remediable through improved policies giving a greater role to the private sector in the financing and management of telecommunications networks and services.

Global experience with reform of telecommunications has already established the major parameters of the policy changes required to secure greater private sector participation. For SSA countries, the critical requirement is to address the concerns of investors, who to date have shown less interest in this region than in others. Accordingly, the following policy changes are recommended:

- Governments establish a clear strategy for reform of the sector, based on structuring profitable investment opportunities.
- Liberalisation be treated as vital so as to maximise investment opportunities and generate incentives to meet demand and improve efficiency.
- Regulation be refocussed on providing an enabling environment that serves to contain risk.

The need for telecommunications sector reform is widely recognised by SSA governments, and most have already embarked on reform programmes. These programmes tend to be modelled on continental European precedents, which emphasise gradual commercialisation by existing management and the transfer of responsibility for regulation to a government agency. Such reforms may in due course yield significant benefits in terms of improved performance, but as yet evidence is meagre.

The relatively slow pace of reform in SSA countries is due mainly to the absence of a consensus on the benefits that can be secured. Business interests do not press strongly for change; residential users fear loss of cross-subsidy; management and staff tend to fear loss of status and jobs. More generally, in SSA countries, government control of public services is linked with independence and nation-building. Privatisation is widely associated with loss of sovereignty. These attitudes are changing, but slowly.

No SSA country has yet successfully opened its domestic telephony market to competitive entry, and privatisation efforts have generally been limited to giving minority stakes to operators from former colonial countries. In the absence of specific examples of radical reform, it is impossible to draw a strong conclusion that rapid change is preferable to more gradual processes. But the analysis of conditions in SSA telecommunications, as well as the fruits of international experience, point clearly in that direction.

## **Sector Performance in Sub-Saharan Africa**

The study focusses on two principal dimensions of sector performance:

- Market performance: how well services are provided to users
- Operational performance: how well the incumbent operator is doing, measured by financial and technical criteria

The record of performance in SSA countries has shown some surprising results. Market performance has been poor, but there is evidence of substantial ability and willingness by customers to pay for services which were not available. That is, demand was not being met. The technical quality of services remains poor, but some aspects of financial performance were encouraging. Revenues per line are high by world standards, and the telecommunications sectors of SSA countries have the potential to be profitable.

The main reason for poor performance is the inefficient use of resources. For example, current financial results are adversely affected by widespread failure to collect a significant proportion of accrued revenues as well as by relatively high capital and financing costs. Policy discussion concerning telecommunications in SSA countries tends to be dominated by the need for investment in expanded and modernised telephone networks. Yet this study has found that incumbent operators generally have access to adequate funds for investment. Expansion and modernisation are critical issues because available resources are not being efficiently used to meet the demand for services.

In part, the inefficient use of investment resources is attributable to constraints imposed by the form of financing available. Incumbents rely heavily on long-term debt in foreign currencies, which often leaves them vulnerable to exchange losses. Much of the debt is tied to the purchase of the products of a particular company or country, increasing the cost of assets acquired. Investment packages offered by donor countries are also often excessive or unbalanced. The effects of these well-known problems, however, could be mitigated by competent financial management; for example, greater use could be made of debt raised in domestic currencies. Many of the distortions in investment programmes could be avoided by improved planning.

National operators tend to be weak in these and other aspects of the commercial management of their businesses. Most are still strongly marked by their public sector heritage. Running profitable services that are in great demand without commercial disciplines or sufficient material reward inevitably fosters corrupt practices. The rapid commercialisation of the sector is most likely to improve performance and to mitigate corruption. But the incentives for management and staff to embrace change are typically inadequate.

## **Strategies for Reform**

The concern of this report is to identify strategies of sector reform applicable in SSA circumstances. It is accepted that no single blueprint for reform will fit all these countries. Policies of commercialisation, liberalisation, and privatisation can be combined in a variety of ways.

From the review of international experience, the report identifies three distinct types of reform strategy which combine different market structures with varying approaches to the ownership and control of the national operator:

- Incumbent strategy
- Entry strategies
  - Competitive
  - Complementary

This classification of reform strategies is then developed as the framework for application in SSA countries.

The aim of the incumbent strategy is to convert the national operator into a commercial business. In the French version, as developed in the 1980s, the operator is given access to private capital in the form of long-term loans without changing its ownership, market structure, or service obligation. The government regulates the incumbent through a performance contract setting out precise objectives for management while preserving government control over prices and service standards.

An incumbent strategy is likely to result in privatisation. The long-term goal of the successful pursuit of an incumbent strategy is to create a strong business that can be privatised, yielding substantial proceeds for government. Alternatively, if commercialisation is delayed, strategic investors may be brought in to accelerate the process.

The aim of the entry strategy is to improve sector performance by authorising others to provide service. For most SSA countries, the greatest gains in efficiency are likely to be produced by entry into switched voice telephony. There are two options:

With competitive entry, one or more entrants are authorised to provide voice telephony services in competition with the incumbent (as in Japan, New Zealand, and the United Kingdom). By exposing the principal business of the incumbent to competition, pressure to commercialise is maximised.

With complementary entry, the primary aim is to encourage investment in infrastructure, especially local networks and new services. Entry is coordinated with the incumbent's activities, for example, by franchising aspects of network operation (as is occurring widely in countries of Central and Eastern Europe) or focussing on new services, for example, cellular radio.

In practice, sector policies do tend to give priority at any time either to an incumbent or an entry strategy. For example, in Europe, Southeast Asia, and Latin America, privatisation of the incumbent has generally preceded serious efforts to open up the telephone services market to competition. Governments may, of course, adopt aspects of both incumbent and entry strategies. A mix of strategies may be preferred, for example, because services other than switched voice telephony provided over a fixed network, such as cellular mobile radio, call for a different approach.

## **Application in Sub-Saharan Africa**

In Sub-Saharan Africa, economic and political constraints reduce a government's freedom to make policy choices. Moreover, the domestic conditions that might allow the quick success of a government-led reform initiative rarely exist. The key step in initiating reform is for the government to announce that it is open to offers. The first offers received from commercial interests are unlikely to be satisfactory but should help concentrate attention on what is politically desirable and what is economically feasible. The policy dialogue which must precede reform can then have a strong, practical basis.

With so much activity in the telecommunications sector worldwide, the commercial opportunities in SSA countries need to be exceptionally attractive to overcome the perceived drawbacks of the region. National markets in the region are relatively small, and the costs and risks of entry are relatively high. For these reasons, investors tend to prefer opportunities that require a low initial level of commitment of capital and offer a rapid return on investment. Investment in cellular networks meets these criteria, but in fixed telephone networks, it usually does not.

Five country studies were undertaken, and reform processes already under way—in Benin, Ghana, Mozambique, Tanzania, and Uganda—were examined in the light of the strategic options identified above; we also considered the extent to which the reforms being proposed and implemented were the ones most likely to improve sector performance.

The reforms under way can be described in terms of the three generic reform strategies. In Mozambique and Tanzania, incumbent strategies were being pursued without as yet an explicit commitment to privatisation. In Uganda, privatisation had been proposed as the principal means of commercialising the sector; the government has subsequently decided to offer a second fixed network operating licence as well. In Benin, planned developments fit the description of a complementary entry strategy. In Ghana, the government is seeking a more rapid rate of network expansion than Ghana Telecom has been able to achieve and has announced that competitive entry will be permitted; the government is also looking for a strategic investor in Ghana Telecom.

In reviewing the appropriateness of these strategies, the most important policy criteria were found to be:

- The size and rate of growth of the market; for example, entry is appropriate in Ghana, where the growth in demand has exceeded the incumbent's capacity to supply
- The policy preferences in the individual country; for example, the strong degree of commitment to a privatisation programme in Uganda tilts the balance in favour of an incumbent strategy in that country
- The scale of investment required to meet demand; for example, in Tanzania, the investment required probably exceeds the managerial capacity of the incumbent
- The capabilities of incumbent management; for example, in Ghana, the evident inadequacies of management are likely to hinder an incumbent strategy

In general in SSA countries, incumbents are small in relation to the potential market and tend to be poorly managed, so economic gains from improving their performance are correspondingly small in comparison with promoting entry. Competitive entry will be most appropriate if the potential market is large, irrespective of the market share of the incumbent, and will be easier to accomplish if demand is growing rapidly. Complementary entry may be more appropriate if the market is growing only slowly or where the main unmet demand is for efficient provision of basic telephone service.

Incumbent strategies are also likely to succeed only if a rapid privatisation is accomplished which brings in commercial management from the outside. In countries where privatisation is not politically practical at least for the time being, complementary entry options are recommended as a means to promote more rapid change.

## **Regulatory Reform**

International experience with sector restructuring suggests that the prospects of success are much greater if regulatory reform is consistent with the policy choices that governments have made. The style and substance of the regulation require changes as reform proceeds. Several SSA countries have undertaken regulatory reform in a relative policy vacuum and in advance of substantive restructuring of operations; in consequence, the reforms seem overcomplicated and are likely to prove ineffective in promoting improvements in sector performance.

If an incumbent strategy is being pursued, the key task is the regulation of the national operator and its performance. So long as the national operator remains government-owned, a regulatory body specific to the telecommunications sector will need to conform to national norms for the supervision of state-owned enterprises (SOEs). At privatisation, the licence or concession contract can become the key regulatory document.

Licensing policy is also central to the implementation of entry strategies. It is possible to design a minimal regulatory framework on the basis of a carefully designed licensing scheme and well-drafted licences. The task of monitoring licensees can then be undertaken by a small staff, supplemented by external advisers as required.

As a rule, regulation of telecommunications networks in SSA countries is best undertaken from within the ministry with policy responsibility for the sector. The market in SSA countries is insufficiently large or sophisticated to justify a more complex division of responsibilities, and resources for regulation are scarce. To ensure independent input into regulation, the full-time head of regulation could be appointed from outside the civil service, or systematic use made of independent advisers.

## **External Financing**

Whichever strategy is pursued, sector policy needs to focus on private sector solutions to external financing requirements. Hitherto, national operators have relied extensively on loan finance arranged via government from international financial institutions (IFIs) or bilaterally. Private sector (commercial) loans are available for telecommunications in SSA countries, provided terms are carefully designed and strict financial disciplines imposed.

Strategic investors are unlikely to be willing to make large equity investments in SSA networks. An equity proportion in investment finance as low as 10 percent is feasible, however, in a well-designed financial package. Investors will expect governments to be committed to these financial arrangements.

## Acknowledgements

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## Acronyms and Abbreviations

BOT	build-operate-transfer
BTC	Botswana Telecommunications Corporation
CITELCOM	Côte d'Ivoire Telecommunications
CPRM	The Marconi Company of Portugal
FCR	France Cable et Radio
GDP	gross domestic product
GNP	gross national product
GPT	Ghana Posts and Telecommunications Corporation
GSM	Global System for Mobile Communications or Groupe Spécial Mobile
IFI	international financial institution
IMF	International Monetary Fund
INCM	National Institute of Communications, Mozambique
KPN	Royal Dutch PTT
MOU	memorandum of understanding
MTC	Ministry of Transport and Communications
OPT	Office of Posts and Telecommunications, Benin
PTO	public telecommunications operator
PTT	post, telephone, and telegraph administration
SONATEL	National Telecommunications Company, Senegal
SSA	Sub-Saharan Africa
STELMAD	Madagascan Telecommunications Company
SUDATEL	Sudan Telecommunications
RSA	Republic of South Africa
TTCL	Tanzania Telecommunications Company Limited
TDM	Telecommunications of Mozambique
UPTC	Uganda Posts and Telecommunications Corporation

Note: In the text, 1 billion means 1,000 million.





# 1

## **Telecommunications in Sub-Saharan Africa Today**

Telecommunications is a strategically important, but relatively neglected, sector in Sub-Saharan Africa. Its growing importance is due to:

- The general trend for economic activity throughout the world to become more communications intensive
- The specific ability of telecommunications to enable producers to overcome difficulties of distance from and access to regional and world markets
- The sustained decline in costs of provision of services under the impact of technological change.

### **Introduction: Telecommunications and Development**

Telecommunications infrastructure lies at the heart of the information economy. Countries lacking modern telecommunications infrastructure cannot compete effectively in the global economy.

In the economies of SSA countries, the telecommunications sector is underrepresented, even when measured in relation to gross domestic product (GDP). Awareness of the economic payoffs from successful reform strategies is growing. For countries in SSA with an average per capita income of around \$350, the economic and financial returns from expansion in telecommunications are substantial and well documented. Economic studies for the International Telecommunication Union (ITU) indicate that each new telephone line added in the region contributes approximately \$4,500 to gross national product (GNP)—a far higher contribution than in developed markets.

In the decade since the 1985 Maitland Report, "The Missing Link," a concerted effort has been made by the World Bank, the ITU, and others to bring to the attention of policymakers the importance of improving telecommunications services for development in SSA. Although wide recognition of the fact has been achieved, the practical results have been meagre. The reasons for this are that the sector combines relatively complex technology with, in most SSA countries, highly traditional modes of organisation. In consequence, the management of change in the sector is difficult, on political, economic, and financial levels.

### **Sector Performance**

SSA countries are characterised by relatively low standards of living and widespread poverty. Their economies have typically displayed low rates of growth of GDP; many have also experienced inflation and other forms of macroeconomic disruption. Assessment of the performance and prospects of the telecommunications sector must take these factors into account.

In this study, we define sector performance as having two principal dimensions:

1. Market performance, that is, how well services are provided to customers. This covers provision of switched voice telephony in both urban and rural areas as well as the provision of new services.
2. Operator performance, that is, how well the incumbent itself is performing, measured by financial and technical criteria.

The five countries studied in detail showed poor performance by every incumbent operator on many of the market and operational dimensions. The key aspects of poor performance are:

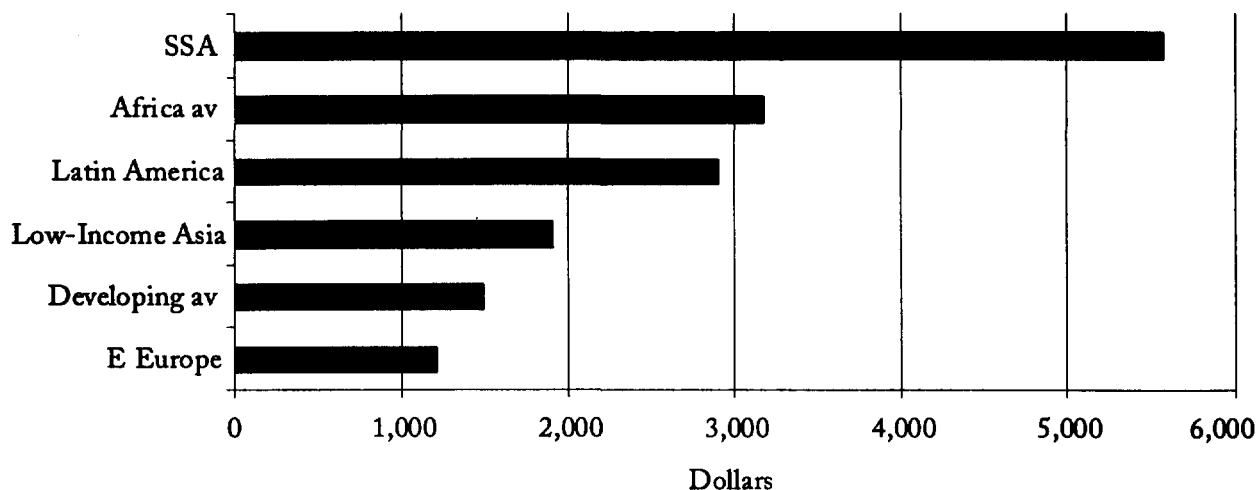
- Large unmet demand for telephone service
- Poor technical and operational quality of service
- Low profitability
- Absence of new services such as cellular mobile radio and access to data networks.

Poor performance could not be attributed to the characteristics of the market in these countries. Rather, there is substantial evidence of the ability and willingness of customers to pay for services that are not being adequately provided.<sup>1</sup> Several reasons can be adduced in support of this finding.

First, public telecommunications networks in SSA countries are generally not extensive; service is highly concentrated in capital cities and other urban areas and on business and government customers. Unmet demand has a similar distribution. That is, the failure to meet demand is not attributable to the high cost of connecting customers in remote and rural areas. It is principally customers in urban areas who could easily be reached who are on waiting lists. Indeed, only lip service is paid to ideas of public service and universal access; these ideas are not taken seriously in practice. Large parts of the rural areas of the continent are scarcely supplied at all. Consequently, network operators do not bear the cost of large cross-subsidies.

Second, revenues per main telephone line are well above world averages: \$1,225 compared to international average of \$735—substantially higher than lines in, for example, Central and Eastern Europe. Operating costs are not unusually high. Low profitability appears to result mainly from poor financial management, in particular a failure to collect a proportion of accrued revenue; relatively high costs; and poor implementation of investment.

*Figure 1-1: Investment Cost Per New Line Added (in dollars)*



Source: ITU 1992.

Third, SSA has had the highest investment cost per line of any region: \$5,600 compared to the average for developing countries of \$1,500 (see figure 1-1).<sup>2</sup> While the causes of this large difference in capital costs are disputed, the perception that the modest growth achieved in the region has come at a very high price is generally accepted.

Part of the higher costs per line arises from methods of financing investment. Most SSA countries, financing their investment programmes through loans backed by sovereign guarantee, have typically based their choice of credit on the financing terms offered. This has encouraged lenders to offer cheap lending terms on overpriced equipment. For a fifteen-year loan, the difference between \$5,600 and \$1,500 would equate to about an additional 26 percent a year financing cost.

Fourth, the rate of growth of network capacity is below average. The growth in networks in SSA over the period 1983–92 was 6.8 percent a year, compared to over 10 percent a year in other areas of the world.

In addition to the unbusinesslike management of existing operations, poor sector performance can also be attributed to:

- The inefficient use of investment resources

The conventional view has been that SSA countries suffer from a lack of investment. The country studies found that access to capital was more than adequate, but that poor use was made of resources acquired. The main problems were with the planning of investment programmes, relatively high cost of procurement, and delays in implementation. A recurrent characteristic of SSA telephone networks is excessive exchange and long-distance transmission capacity and inadequate local networks.

- Unreasonable constraints on private sector participation in the provision of services

With incumbent operations so small and concentrated, the potential market that could be served by the private sector is substantial. Securing access to any part of it, however, is likely to prove costly for a private investor because of legal and political barriers, even where there is an apparent willingness to consider entry.

- Weak policy direction

The telecommunications sector's performance has generally not been poor relative to that of other parastatal organisations and, with a few exceptions, operations have been profitable. In consequence, the sector has not been given priority in restructuring programmes. As discussed in chapter 4, restructuring of the sector has tended to proceed slowly, with an emphasis on regulatory reforms which at best are only indirectly connected with measures to improve performance.

- Corruption

Although only anecdotal evidence is available, it appears obvious that—in some countries—corrupt practices underlie much of the high cost of investment and failure to collect revenues. In large measure, tolerance of corrupt practices may be the response to inadequate pay and a lack of legitimate incentives for management and staff.

**Box 1-1**

**Reasons for Poor Telecommunications Development**

1. Lack of investment
2. Foreign exchange scarcity
3. Investment inefficiencies
4. Poor management incentives
5. Inadequate private sector involvement
6. Insufficient regional development

*Source: ITU, World Telecommunication Development Report 1994, p. 79.*

This explanation of poor sector performance as due primarily to inefficient management of operations and available resources differs significantly from the reasons offered in the ITU's World Telecommunication Development Report (see box 1-1). In particular, the ITU has emphasised constraints on access to investment funds. There may be a natural reluctance to criticise the performance of incumbent operators, but the perception of a general shortage of investment and of finance is at odds with our findings. This issue is taken up in chapter 3.

## **Sector Reform in Progress**

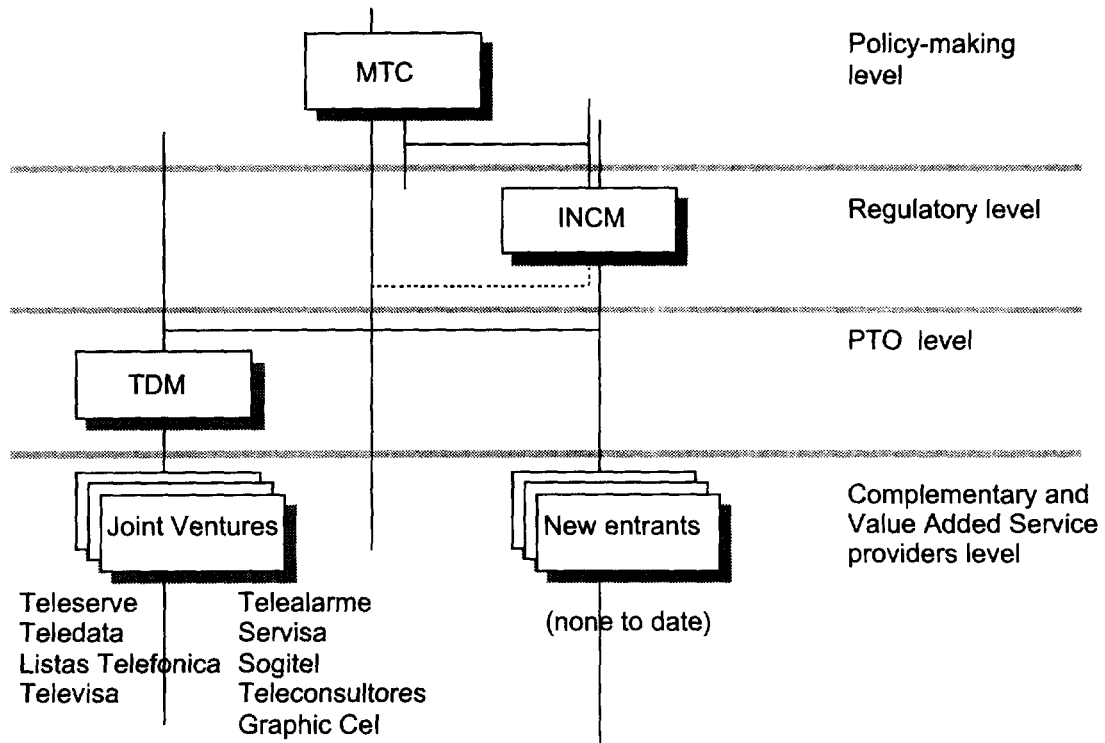
By comparison with other parts of the world, the structure of the telecommunications sector in SSA has tended to be remarkably uniform. Without exception, the sector of each SSA country was organised on the principle of national operating entities having responsibility for providing uniform telephone service throughout the country. In a few cases, international links were the responsibility of a separate entity. Government ownership of operating entities was and remains the norm,<sup>3</sup> with the exceptions being examples of the continuation or effective renewal of colonial links.

Even so, reform is now in progress in very many SSA countries; some examples are given in this section. Best practice in the modernisation of the sector is widely perceived among SSA countries to contain the following elements:

- Separation of regulation from operations under a new law
- Separation of posts from telecommunications
- Commercialisation of incumbent operators
- Statutory monopoly in public switched fixed telephone services
- Joint ventures by the incumbent in other services
- Open entry into equipment supply and value-added services

The sector reforms undertaken in **Mozambique** provide an example of this approach (see figure 1-2). The sector ministry, Ministry of Transport and Communications (MTC), determines policy and directly supervises the incumbent operator, Telecommunications of Mozambique (TDM), which has a statutory monopoly for voice telephony and telex. TDM's services other than voice telephony and telex are now organised as separate subsidiaries. A regulatory body, the National Institute of Communications, Mozambique (INCM), has recently been established to be responsible for the licensing and

Figure 1-2: The Organisation of the Telecommunications Sector in Mozambique



Source: Mozambique Telecommunications and Development Management: Report to the Conference, April 1994.

management of the radio spectrum. The reforms in Mozambique correspond closely to the consensus view of continental European governments.

Reform in Senegal has taken a similar course to date. SONATEL was formed in 1985, combining international and domestic operations, after separating the latter from posts. Under a performance contract with the sector ministry, SONATEL secured managerial autonomy on commercial terms, forgoing previous exemptions from taxation. Provision of new services is being organised through a series of joint ventures.

The Senegal example has influenced several other West African countries, such as Benin. Implementation of the reforms in Benin, however, has been delayed by disagreements, for example, over the change in employment status of the staff of the Office of Posts and Telecommunications (OPT) from the civil service.

In Nigeria, telecommunications operations were corporatised in 1985 with the formation of Nigeria Telecommunications Limited (Nitel). Despite the introduction of commercial management practices and higher tariffs comparable with international levels, Nitel is still far from achieving financial self-sufficiency. Private ownership of up to 40 percent of Nitel was initially one of the objectives in setting up the company, but the government subsequently reversed this decision. Instead, sector reform has concentrated on developing a regulatory framework. The Nigerian Communications Commission (NCC) was created in 1992 to supervise the sector. NCC has since issued many provisional licences for services other than fixed voice telephony, for example, cellular mobile radio and data communications. The Nigerian precedent of regulatory reform has been influential for several other SSA countries, such as Tanzania and Zambia.

**Tanzania** has also established a new regulatory body, Tanzania Communications Commission (TCC), with licensing responsibilities even though licensing policy is not yet determined in detail. Developments are now further advanced in Tanzania than in Nigeria. The national operator, Tanzania Telecommunications Company Limited (TTCL), has been separated from posts and corporatised; the government has not announced plans for privatisation or liberalisation, although a number of options are under consideration. A memorandum of understanding (MOU) between the government and TTCL has been put in place which acts as a form of performance contract for the corporation. As part of this, an attempt was made to introduce a price-cap control on telephone tariffs, but its use has been suspended by the government.

In **Ghana**, similar moves to establish a regulatory body, National Communications Authority (NCA), and to divide the incumbent operator, Ghana Posts and Telecommunications (GPT), into separate postal and telecommunications companies, have been delayed. The government has nonetheless ensured the licensing of several cellular mobile operators and is considering simultaneously issuing a second fixed network licence and attracting a strategic investor into Ghana Telecom.

In **Botswana**, Botswana Telecommunications Corporation (BTC) has become extensively commercialised, with the assistance of Cable & Wireless under a management contract. The government did not renew this contract when it expired in 1995, taking the view that BTC can continue to develop on its own.

In contrast, in **Madagascar**, the management contract with France Cable et Radio (FCR) is explicitly intended to prepare the national operator, STELMAD, for privatisation. Formerly separate, international and domestic operations are being combined, and a new regulatory framework established. The strategic partner of the new operator is to be chosen by a competitive bidding procedure.

FCR had a similar position in **Guinea**, assisting Sotelgui with a management contract in preparing for privatisation. The privatisation process provided for a competitive tender for the majority of shares in Sotelgui, with Telekom Malaysia being finally selected as the strategic investor.

In **Côte d'Ivoire**, an early decision to privatise CITELCOM was taken, but after four years of consideration of modalities, the process appears still to be effectively stalled because of lack of agreement at the policy level. In the meantime, three cellular mobile radio licences have been issued to foreign operators.

In **Uganda**, as well, the government made a rapid decision to privatise the telecommunications business of the incumbent, Uganda Posts and Telecommunications Corporation (UPTC), but was subsequently engaged in lengthy discussions to determine the method and timing. At the time of writing, expressions of interest in this business, to be called Uganda Telecom, are being sought from strategic investors.

**Eritrea** is a new country, having recently separated from Ethiopia. To initiate direct international communications rapidly, the government has licensed a joint venture, under which international traffic is routed from two satellite gateways in Eritrea via an exchange located in New York.

These are examples of considerable activity but few concrete accomplishments. It is evident that the implementation of successful programmes of sector reform in SSA is subject to a number of constraints, some political, some economic.

The new regime in **South Africa** has delayed plans to privatise Telkom SA and to license new entrants into long-distance services in order to build a consensus around plans to improve access to services for the black majority and to improve methods of regulation (see box 1-2).

## **Political Context of Reform**

In industrial countries, the impetus for telecommunications sector reform typically has come from the highest levels of government. The reasons that reform has gained such importance include:

**Box 1-2**

### **Telecommunications Sector Reform in South Africa**

The context for sector reform in South Africa is significantly different from that in other SSA countries. The government perceives two main priorities: to ensure the provision of basic telephone service in areas previously neglected, and to make available a full range of modern services to support the reintegration of the country into the world economy. How these objectives can best be achieved has been the subject of an extended policy debate, to which a broad range of interests have been encouraged to contribute. A consensus now seems to have been achieved on many issues and is reflected in the government's "White Paper on Telecommunications Policy" (General Notice 291 of 1996, *Government Gazette*, Pretoria, 13 March 1996). The main agreed elements of policy are:

- To give Telkom a five-year period of exclusivity on switched voice telephone services in return for a commitment to an agreed investment programme
- To transfer regulatory functions to a new authority within the government
- To introduce a framework of licences for all services, to be the basis for phasing in liberalisation in future
- To establish a Universal Service Agency to ensure access to basic telecommunications services.

In cellular mobile radio services, two licences have already been granted to operate national GSM (Global System for Mobile Communications) networks (one to a consortium involving Telkom), with coverage obligations and commitments to provide community access to telephone service in townships.

Although no consensus has been achieved on the future ownership of Telkom, the government has indicated that it intends to seek a strategic partner to acquire a minority stake.

- Pressure from customers for more and better services
- General moves to liberalise and privatise economic activities
- Attempts to resolve intractable problems for the public sector in financing infrastructure investment
- Especially in Europe, implementation of an intergovernmental agenda of opening up national markets.

In SSA, similarly, high-level government involvement has been necessary to initiate reform in telecom as in other sectors. In many countries, external agencies such as the International Monetary Fund (IMF) have been instrumental in drawing to the attention of governments the possibility and importance of reform. Openness to reform in SSA does not seem closely related to the nature of the government, whether democratic or not, or to the degree of political stability. For example, the countries studied in detail display a considerable variety of types of political circumstances. In Ghana, sector reform has been under discussion but was effectively stalled for several years, despite comparative political stability and a regime which is pursuing a reasonably successful economic liberalisation programme. In Uganda, a relatively strong government with popular support and committed to economic reform

proposed the rapid privatisation of the incumbent operator, but even so, has found the formulation and implementation of specific policy measures difficult. Tanzania, which has also enjoyed an extended period of stability, has gone furthest in achieving broad agreement on and implementing a programme of reform, albeit limited in scope.

Rapid political transition might appear to create opportunities to accelerate the reform process. But neither in Mozambique, a country undergoing transition from civil war to democracy, nor in Benin, where the transition is from dictatorship to democracy, were such opportunities in evidence. Rather, the prevailing view in both countries appears to be that the sector has been doing relatively well, at least compared to other state enterprises, and so could safely be left to look after itself for the time being while more pressing matters were attended to.

In the field of telecommunications, privatisation has yet to play a major role in Sub-Saharan Africa. Even though the ITU's 1990 Harare Declaration contained a commitment to increase private sector participation in the sector (see box 1-3), most governments have been reluctant to put this policy into practice. Only six SSA governments have announced plans to privatise their national operators,<sup>4</sup> although several others are believed to be considering such a move. Only one country, Guinea, has implemented such a policy. In Congo, Ghana, and Uganda, a privatisation process is currently under way. In each case, the intention is to sell a majority or minority stake to a strategic investor.

In short, almost all governments, whether authoritarian or democratic, favour reform, usually as part of a wider programme of structural adjustment and public enterprise reform. All types of regimes, however, face evident difficulties in translating this willingness into sustained action. In this section, the main sources of difficulty are examined, and steps to tackle them suggested.

### ***Lack of Consensus***

Building a consensus is one means of dealing with the difficulties in formulating a reform strategy, but virtually no SSA country enjoys a national consensus for reform in the telecommunications sector. First, the sector has largely been self-regulating, and managers are, as ever, opposed to restructuring that will reduce their control, influence, or status. To some degree, their reluctance can be overcome by linking reform to the availability of investment finance. Where this linkage has been made by international financial institutions, such as the World Bank, faced by a reluctant operator, the outcome to date has often been formal rather than substantive change (for example, Nigeria). Second, the staff of national operators and trade unions representing them are instinctively opposed to reforms that are likely to result in a reduction in employment in the incumbent. Third, residential and rural users fear that reform will mean price rises and the withdrawal of services. Pressure from large corporate users, particularly from multinationals, which provide the impetus for most developing countries to upgrade their telecommunications systems, is also not as strong in SSA, which has a relatively low representation of large companies. More generally, most users perceive telecommunications as a public service for which state ownership and service obligations are appropriate.

Demonstrating the social welfare gains which have resulted from reforms elsewhere is one important element in securing political support. Creating a consensus for reform will require a number of associated policies which improve on the limited opportunities for investors in SSA and ensure that the benefits are spread throughout the population. A narrowly focussed policy, isolating the sale of telecommunications assets from macroeconomic policy or general industrial reform, is unlikely to succeed.

Where political interaction could be observed in action during the course of the study, as in Uganda and Swaziland, the coalition of forces opposed to reform mainly included the groups listed above. Proponents of reform may be fewer in number but are, as a rule, better placed, whether in government or in the private sector.



Box 1-3

### **The Harare Declaration**

Resolution ATDC-90/RES2 (the Harare Declaration) made four recommendations to African governments:

1. Create an appropriate investment climate by, among other measures:
  - i. Providing adequate status and structure for telecommunications organizations...
  - ii. Providing guarantees to investors against expropriation...
  - iii. Liberalisation of control over some aspects of telecommunications service provision to allow private participation, for example, value-added services; ...
2. Introduce commercial practices in telecommunications operations.
3. Organise training programmes on management techniques . . .
4. Widen their possibilities for financing to include options like equity participation from the domestic market and raising of funds through the issue of domestic bonds..."

In summary, governments may be strong enough to push through reforms despite resistance; if they feel the need to build a consensus first, as in Tanzania, then the process is likely to be gradual.

### ***Universal Service***

The service obligations of telephone companies reflect fundamental attitudes that the reform process is not likely to change. The principal expectations are that all parts of the country will be connected to the national network and that all residential users will have access to the same service and be charged a uniform and low tariff. The policies that give effect to these expectations are usually expressed as the provision of universal service. Reform is widely perceived as putting these elements of public service at risk. In practice, however, the application of ideas of universal service in SSA is very limited. First, the extension of the public telecommunications network throughout the national territory remains an aspiration for most SSA countries. Second, the proportion of the population that is directly connected to the national network remains very low. Third, the demand and cost characteristics of distinct customer groups (business, residential; urban, rural) are so different that it is unlikely that their demands can best be met by offering a uniform service at uniform tariffs. Accordingly, sector policies in SSA are not really constrained by the need to preserve universal service ideals, although careful political efforts may be required to demonstrate this reality (this important issue is considered further in chapter 2).

### ***Fear of Foreign Control***

A gradual shift in attitudes to state ownership is taking place in SSA, but at the present time in many countries, private ownership of public services is equated with a return to foreign control. Participation by a strategic investor in the running of a telephone company does, of course, have this character. Suspicion of the motives and consequences of foreign control remains strong. These fears can be allayed by promoting the involvement of the domestic private sector and by having visibly effective

mechanisms of regulatory control. At privatisation, special controls, such as the “golden shares” deployed by the U.K. government, can be put in place to protect against unforeseen threats to the national interest.

For governments, telecommunications infrastructure forms part of the security structure of the country; foreign control is bound to be a sensitive matter for military and intelligence interests. Experience with privatisation has shown that requirements for domestic surveillance, for secure government communications, and for priority in emergencies can all be satisfactorily met under private, foreign management control of infrastructure and services.

### ***Staff Concerns***

The opposition of management and staff of incumbent operators to reform is likely to take one of two forms:

- Both management and staff fear a loss of jobs.
- Public sector employees may also fear loss of their status and privileges with commercialisation and privatisation.

These concerns can be met—either by providing guarantees of continued employment or of privileges such as housing, access to health services, and especially, pensions; or by providing relatively generous severance payments. Which option is pursued will depend mainly on the future prospects of the business: if growth is expected to be rapid, then staff currently surplus to requirements can probably be productively employed. In most SSA countries, however, redundancy seems an unavoidable corollary of effective reform. The experience of Tanzania indicates that staff numbers can be reduced without conflict if compensation is perceived to be adequate. Given the weak finances of some operators, the cost may have to be borne by the government.

### ***Economic Constraints***

The macroeconomic instability of many SSA countries has had a number of adverse effects on the sector. Of these, perhaps the most important has been the impact of currency devaluations on the cost of long-term loan obligations. Few national operators have been able to accumulate reserves or make sufficient provisions to maintain profitability following devaluation. Conversely, tariff controls have not been sufficiently sensitive to this source of unexpected increase in costs. In those SSA countries with endemic inflation, prices that can be charged have often been held down in real terms by government. In recent years, this difficulty has been significantly eased and, as noted, tariff levels in the sector are now generally adequate.

Nonetheless, many operators remain in a weak financial position because of the accumulated effects of past macroeconomic policies. This inheritance is compounded by the fact that almost all continue to rely on debt finance for investment, and so remain at risk from future adverse economic events. These factors reduce their attractiveness to potential investors. Accordingly, while governments would naturally welcome securing substantial proceeds from the sale of telecommunications assets, few state-owned operators in SSA are perceived to have a significant net worth.

### ***Business Environment***

The commercialisation of state-owned enterprises has generally not proceeded very far in SSA. Most still operate in a civil-service-like manner, with functions organised within hierarchical and poorly coordinated departments, and the provision of services organised along geographical lines corresponding

with administrative divisions in the country. The provision of technical assistance in the form of consultancy and training has generally been unsuccessful in imparting a good understanding of how a commercial business would operate. Operators recruit very few managers with private sector experience.

The willingness of the private sector to invest in telecommunications in SSA countries is limited by these political and economic constraints. The recent pattern of involvement, and of proposed investment, has been for relatively small initial capital commitments. Favoured types of investment have included:

- Cellular radio services, usually limited to the capital city and environs
- Participation in international services
- Offshore optical-fibre cable projects (Alcatel, AT&T's Africa One, FLAG).

France Cable et Radio (FCR) has been the most active participant, taking an ownership stake in operators in ten countries. As this example indicates, the pattern for private sector participation very much reflects relationships from the colonial era. The main business interest appears to be to preserve control of international traffic flows.

## **Conclusions**

The main conclusion that the study has drawn from the review of telecommunications in SSA countries is that, while governments widely recognise the need for sector reform, their success to date in implementing reform has been limited. Much greater emphasis is needed on devising strategies that can be implemented quickly to accelerate the development of the sector.

Current efforts at restructuring by SSA governments and operators are making slow progress and largely fail to address the real reasons for poor performance. Where governments have clarified their policy intentions, implementation has been delayed. Most managements of incumbent operators have not run their businesses successfully, yet as a rule, have been left in charge of sector reform and allowed to determine the pace of change. They have little incentive to mend their ways. Sources of commercial expertise and experience in the country outside the incumbent have not been tapped and usually are positively discouraged from participating in the development of infrastructure and services.

The potential private sector response may be weaker in SSA countries than has been experienced elsewhere in the world. To accelerate the pace of change, innovative methods of reform, of sector organisation, and of investment finance should be looked at to see what promise of a greater developmental impact they offer.



# 2

## A Policy Agenda for Sub-Saharan Africa

This chapter develops a telecommunications policy agenda for SSA countries. First, an overview of the reform process in the telecommunications sector is set out; then, alternative strategies of reform are identified. Within this framework, the key policy issues are examined and conclusions drawn.

The overriding aim of reform is to improve the performance of the sector: the availability, quality, and price of services provided to customers as well as the cost efficiency with which they are provided. Pursuit of this aim generally involves increasing the role for market forces, separating day-to-day management of telecommunications operations from government, and introducing increasingly explicit forms of regulatory control.

### Approaches to Sector Reform

The main elements of the reform of the telecommunications sector are:

- Commercialisation: distancing management of operations from government and the attendant bureaucracy to become more businesslike
- Liberalisation: increasing the role of market forces in the provision of public services by moving from monopoly towards open entry
- Privatisation: increasing the scope for private sector participation in ownership and control of infrastructure.

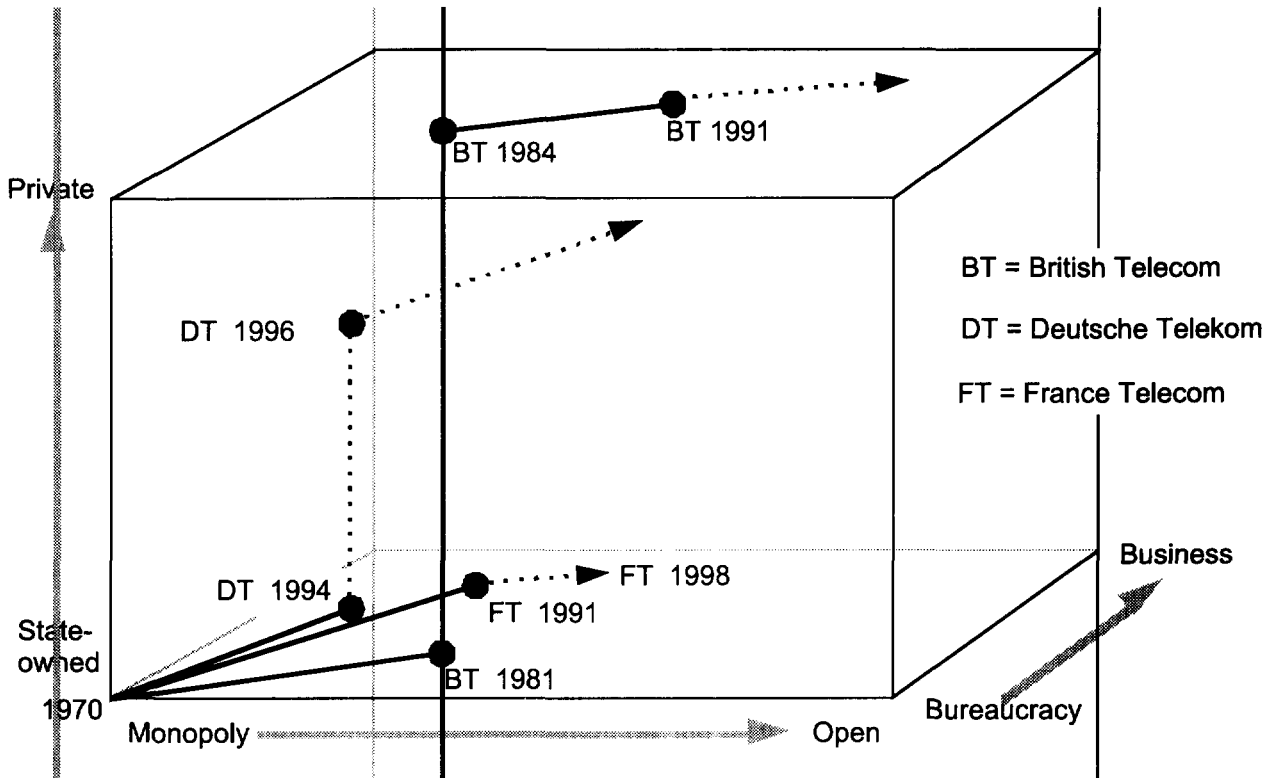
Regulatory reform proceeds in parallel to these processes and is contingent upon the terms of restructuring in each country.

International experience indicates that the elements of the reform process may be combined in a variety of different ways. For example, the United Kingdom initiated market entry and the privatisation of the incumbent operator at a relatively early stage, thereby intensifying pressures on BT (formerly British Telecom) to become more commercial and more efficient. New regulatory arrangements were put in place to facilitate and reinforce these policies. In France and in Germany, as in most other European countries, the strategies being followed concentrate on commercialisation of the telephony business, with liberalisation and regulatory reform being related mainly to new and ancillary services. The incumbent operator has been allowed to undertake internal reforms at its own pace, with the boundaries of its monopoly carefully redrawn before it is fully exposed to market forces and the disciplines of private capital markets. Opening up the main voice telephony market to competition and the privatisation of the incumbent operator have been deferred.

Figure 2–1 illustrates the different paths to reform being taken in the United Kingdom, France, and Germany. Implicit in the construction of the figure, of course, is that the end result of the reform process will be much the same in all three countries.

This reflects in part the consensus view that the future of telecommunications lies with private, commercial provision of services under relatively liberal regulatory arrangements. In part, it also reflects the specific common aims of the telecommunications policy of the European Union (EU). Formally, the

Figure 2-1: Reform Strategies of Major PTO's in Western Europe



EU has focussed on the gradual liberalisation of international services between member states and the standardisation of regulatory processes to eliminate barriers to entry at the national level. The responses by member states to this policy have tended to include plans to extend liberalisation moves to domestic as well as international services and to privatise incumbent operators.<sup>5</sup>

In most Western European countries, the top management of the businesses has been left in place to accomplish commercialisation as they see fit. This factor probably goes much of the way to explain the long time that restructuring has taken so far in these countries. It is not a necessary condition of reform, however, that commercialisation precede either the opening of the market or privatisation. In New Zealand and in several Latin American countries, reform has been associated with an influx of new strategic investors with managers who have strong commercial incentives. That is, privatisation has been the instrument for achieving commercialisation more rapidly than would otherwise have been the case. In several countries in addition to the United Kingdom, such as Japan and Korea, opening the voice telephony market has occurred prior to, or at the same time as, privatisation. In short, a variety of strategies incorporating the main elements of the reform process has been followed and appear to work.

### Reform Strategies

From the review of international experience, we have identified three distinct types of reform strategy which combine different market structures with varying approaches to the ownership and control of the operator. The three strategies are:

- Incumbent strategy

- Competitive entry strategy
- Complementary entry strategy

This classification of reform strategies serves as the framework for application in SSA countries. In practice, of course, sector policies involve a mix of these strategies.

The distinctive characteristics of the three reform strategies are summarised as follows.

#### INCUMBENT STRATEGIES

The main aim of incumbent strategies is to convert the operator into a commercial business. Emphasis is placed on investment in new technology and improvements in commercial and operational management while continuing the national monopoly in the provision of public fixed telephone services. That is, these strategies continue to rely, first and foremost, on the incumbent as the agent for improved sector performance. In industrial economies, where the market for voice telephony is close to being saturated, the main economic benefits from reform must necessarily come from improved performance by the incumbent. In developing countries, particularly such as those in SSA where market demand is far from being satisfied, the economic case for focussing exclusively on improvement in the performance of the incumbent is much weaker.

France provides the best example of consistent pursuit of an incumbent strategy. Since about 1975, France Télécom has been permitted to raise funds for investment from the private capital market without government restraint, but its management has retained a close relationship with government. The government has regulated the incumbent through a performance contract that sets out precise objectives for management while preserving government control over prices and service standards.<sup>6</sup> Market forces have been introduced to a limited extent with competition in nonbasic services and the attempt by France Télécom to emulate new services and tariffs developed elsewhere.

Although usually not part of the initial intention, the outcome of successful implementation of an incumbent strategy is to create a “national champion” that can be privatised, yielding substantial proceeds for government. At privatisation, though rarely before, the incumbent’s monopoly of fixed voice telephony may be relaxed. For example, in Germany an initial public offer of a 25 percent share of Deutsche Telekom has been set for 1996. Having sustained a firm monopoly policy for fixed services hitherto, the German government has now announced its willingness to license providers of innovative services within the domain of DT’s monopoly. It is further expected that several entrants will be licensed to provide fixed voice telephony services as part of the preparation for the initial public offering of shares.

Alternatively, governments may resort to privatisation because the process of commercialising the incumbent is moving too slowly or has run into difficulty. For example, an important part of the background to the privatisation of BT in the United Kingdom was that the government had lost confidence in the ability of its management to implement the digitalisation programme efficiently.

In summary, there are three main variants of an incumbent strategy:

1. A programme of commercialisation initially without commitment to privatise, although this may turn out to be the end result (for example, France)
2. Commercialisation explicitly designed as a preparation for privatisation (for example, Germany)
3. Privatisation in order to induce or accelerate commercialisation (for example, United Kingdom)

As noted in section D of chapter 1, the first variant has become accepted as the norm for SSA countries. Our conclusion is that, in general, conditions in SSA are sufficiently different to make this

variant the least likely of the three to produce rapid or sustained improvements in incumbent performance. Rather, given the slow pace of internal reforms by incumbents, the third variant, involving early privatisation, seems a more promising approach. An incumbent strategy relies on the determination of government officials and of managers of state-owned enterprises to carry through reforms. In many SSA countries, the commitment to reform has been shown to be limited; lack of determination is in large measure due to the constraints on public service. Greater scope for private sector participation is therefore necessary at an early stage to accelerate and sustain the reform process.

#### ENTRANT STRATEGIES

Two distinct approaches to promoting entry into the telecommunications market—competitive and complementary—are sometimes employed at the same time in different segments of the market. With competitive entry, one or more competitors are authorised for voice telephony services. By exposing the principal business of the incumbent to competition and hence to comparisons, external pressure to commercialise is maximised. Under certain conditions, rivalry can also be expected to induce more rapid investment in expanding and modernising infrastructure. With complementary entry, the primary aim is to encourage investment in infrastructure, especially local networks and new services, where the incumbent is subject to constraints or lacks experience.

**Competitive entry.** In principle, competition with the incumbent puts downward pressure on prices, promoting greater cost efficiency and more sensitivity to the needs of customers. The combined efforts of incumbent and new entrants are likely to result in an increased rate of investment and more rapid innovation. Implicitly, the response of the incumbent to the threat or arrival of competition will include accelerated commercialisation.

As already noted, the dynamic benefits from competition are likely to be greater in developing countries, where the primary aim is to extend the coverage of networks and access to services. Yet competitive entry strategies have been more commonly followed in industrial countries, where sector reforms are undertaken in a context in which the penetration rate for basic services is already high. Current examples of competitive entry in developing countries are few (except in cellular radio—see below) and generally too recent to provide evidence of impact. One example is in Russia, where several dozen entrants have been licensed in Moscow and St. Petersburg and compete to provide a high standard of communications for Western companies and others able and willing to pay in foreign currency. Other recent examples include South Korea, Philippines, and Malaysia.

In developing countries, incumbents have usually been able to argue that permitting competition would adversely affect development. Specifically, new entrants would serve the most profitable customers and the loss of profits would reduce the incumbent's ability to sustain operations or finance network expansion. Whatever the general merits of this proposition,<sup>7</sup> SSA incumbents do not rely on cross-subsidy. As noted, most have difficulty meeting current demand and are expanding their networks relatively slowly.<sup>8</sup>

**Complementary entry.** Complementary entry occurs through the granting of exclusive rights over particular markets to different network operators or service providers. The monopoly of the incumbent operator is curtailed but not directly challenged. The scale of unmet demand in most SSA countries, especially away from the capital and outside basic telephone service, suggests considerable scope for complementary entry. The underlying aim of conferring a limited monopoly on entrants would be to encourage investment, although effects on final service provision may vary. In basic network services the approach is often adopted to encourage the development of local networks or facilities not previously provided by the incumbent, or which the incumbent has experienced difficulty in providing.



New operators interconnect with the national operator and so (in an operational sense) become extensions of the existing public switched telephone network (PSTN).

Complementary entry is being promoted in several Central and Eastern European (CEE) countries as a method of limiting monopoly as well as modernising and extending fixed networks (for example, in Hungary). The history of sector reform in Hungary illustrates an uneasy vacillation between incumbent and complementary entry strategies, with the outcome being a compromise between the two (see box 2-1).

Complementary entry may be achieved by divestiture. It may also be a transition to competitive entry. In South Korea, for example, in the early 1980s the government divested data communications and cellular mobile radio services from the Korean Telecommunications Authority (KTA). DACOM (the data communications company) and Korea Mobile Telephone Co. (KMT) were set up as separate companies which were also government-owned and were granted a monopoly in their respective markets. In 1991, the boundary between the markets served by KTA and DACOM was removed. In 1994, a second cellular radio operator was licensed to compete with KMT, which was also privatised.

Complementary entry in voice telephony services, both fixed and mobile, requires the cooperation of the incumbent to secure adequate interconnection arrangements. Where the regulatory authority is relatively weak, the entrant may prefer to enter into a joint venture with the incumbent in order to ensure interconnection. The risk here is that the main practical effect of entry is reinforcing or extending the incumbent's monopoly. Some of the joint ventures entered into by TDM, the incumbent operator in Mozambique, appear to have the aim of ensuring dominance in potentially competitive segments of the market. To forestall such an outcome, the government may need to promulgate some rules regarding complementary entry and the formation of joint ventures for new services, for example, in cellular radio.

In industrial countries, entry strategies are intended to apply external pressure on the incumbent to improve its performance by authorising others to provide service. In developing countries, the main aim of promoting entry is to accelerate investment and to extend the provision of service to more local areas. This difference in expected economic benefit may have significant implications for the design of licensing policy.

**Cellular mobile radio.** Complementary entry is also widely adopted to encourage investments in new services or technologies. Then competition may exist only at the point at which the franchise is awarded, through a bidding or tendering process. The critical issues are how this process is implemented and how the potential value of the franchise is determined and distributed between the winning bidder, government, and customers. Further consideration must then be given to the regulation of the newly created monopolist. Governments have tended to refrain from detailed regulation of cellular mobile radio services, in the interest of promoting rapid deployment of the service.

Early licensing of cellular radio networks usually conferred exclusive markets on operators, although a few countries (the United States and United Kingdom) set up limited competitive structures from the outset. Once the commercial success of cellular radio was established, and further stimulated by the advent of digital technology, a second and often a third competitor has been licensed in most industrial country markets. A competitive licensing process is particularly important in cellular radio as this sector is undergoing the change from analogue to digital technology that fixed networks experienced ten years ago. At this point, the relative costs and benefits of the alternative digital mobile radio technologies that are available remain uncertain. In particular, there are numerous standards for the air interface (which defines the connection between the customer's equipment and the network). Since fixed network operators in developing countries are often not in a position themselves to evaluate the alternatives, a competitive bidding process helps to generate the information needed for a policy decision. It may well be appropriate to allow competing technologies to enter the marketplace to see which offers better service to users. This approach of licensing several network operators deploying different

Box 2-1

### **Incumbent and Entry Strategies in Hungary**

Initial steps in sector reform were focussed on the formation of Matav as the national operator, separating it from posts and broadcasting, and on financing the modernisation of the long-distance and international networks (an incumbent strategy). Investment in local networks, especially outside Budapest, was not considered a priority. In a few areas where there was unmet demand for telephone service, enterprises and individuals took the initiative to secure local network licences from the government in the absence of a modern sector law or settled licensing policy. Several licences were granted subject to having Matav as a minority partner and taking over its assets in the area (complementary entry). These entrants were not successful, mainly because local tariff revenues were low and revenue shares from interconnection with Matav did not adequately compensate. After an extended debate on sector policy, the government sought strategic investors in Matav with a prospectus that emphasised investment in local networks.<sup>9</sup> To accomplish the government's goal of privatisation, it was necessary to rationalise the existing entry policy. Matav was assigned 29 local exchange areas, including Budapest, while the remaining 25 local exchange areas were offered to Matav and others on equal terms. Eleven of the offered areas were taken up by independent operators, leaving Matav with a total of 43 of the 54 local areas. To date, both Matav and the independent local network operators appear to be meeting their investment targets.

technologies has been adopted in several Asian countries, for example, Indonesia, Malaysia, and Philippines.

A critical policy issue is whether to allow the incumbent operator for fixed services to offer cellular radio services as well. Several policy considerations are relevant. The operator will almost certainly want to participate but may be motivated to shut others out. If competitive provision of cellular services is feasible from the outset, then excluding the fixed operator may be appropriate. If only one entrant is being sought for the time being, then, in order for competitive bidding to be transparent, the incumbent should not enter into a joint venture until a policy choice has been made. Cellular services require interconnection with the fixed telephone networks; with relatively weak regulatory institutions, this may be easier in practice if the incumbent is a participant. Investors may indicate a preference for a joint venture as a means of facilitating entry and reducing risk. The incumbent's lack of experience in cellular services is not sufficient reason for excluding it from the market; it may be possible to require that it act as the junior partner in a joint venture.

### ***Applicability in Sub-Saharan Africa***

The incumbent/entry framework was applied to the reform process in several SSA countries. Ongoing reform efforts were found to fit the categories set up quite well, although naturally, reality is rather more complex. In Mozambique and Tanzania, incumbent strategies are being pursued; in Benin, developments best fit the description of a complementary entry strategy. In Ghana and Uganda, the combining of types of strategies is most evident. In Ghana, the government has announced that competitive entry will be permitted, but at the same time it hopes to attract a strategic investor into Ghana Telecom. In Uganda, the government first preferred an incumbent strategy based on rapid privatisation, but has since decided to combine privatisation of the incumbent operator with the

simultaneous creation of an opportunity for competitive entry. By offering both opportunities, the government is, in effect, inviting potential investors to determine fundamental policy choices.

In general, the incumbent strategies being followed were not likely to produce the greatest benefits for users without significant modification. Incumbents are small in relation to the potential market, so economic gains from improving their performance are correspondingly small by comparison with promoting entry. The countries with incumbent strategies were also found to be progressing too slowly to be likely to succeed in accelerating development of the sector. Slow progress was due largely to the limited capabilities of management and their lack of commitment and incentives, as well as the ineffectiveness of regulatory authorities. In Uganda, these problems had already been recognised by the government, which wanted a rapid privatisation that would bring in commercial management from the outside. This seemed the best approach, if it could be accomplished. In Tanzania, where privatisation is not politically practical at least for the time being, complementary entry options were recommended as a means to more rapid change.

Where mixed strategies combining both entry and privatisation are being pursued, as in Ghana and Uganda, it is moot whether this represents the fine tuning of a reform strategy to secure maximum benefits from reform, or rather, the inability of governments to make decisive policy choices and carry them through. Although privatisation is usually accompanied by the announced abandonment of monopoly, few countries have yet been able simultaneously to privatise and to promote competitive entry. Typically, where the priority is given to privatisation, entry has been postponed for a period of years, to allow time for the incumbent to adjust and to offer stability in the telecommunications market for investors. In SSA countries, where the economic and financial constraints on policy choice tend to be more intense, it may be doubted whether relatively complex strategies are likely to be successfully implemented.

## **Incumbent Strategies**

In this section, the components of incumbent strategies are examined in more detail. The discussion emphasizes issues relevant for SSA countries.

### ***Commercialisation***

Commercialisation has been shown to be a demanding agenda for operators in industrial countries. Even among those already privatised, few have yet achieved all that could be expected in adopting commercial ways of doing business and responding well to demands for new services. In SSA, the commercial environment is poorer, and both external pressures and internal incentives for commercialisation are weaker. Moreover, it appears that the methods available for promoting a commercial approach to managing telephone companies are not being effectively deployed. These conclusions point towards structural changes as necessary in the sector. In this chapter, the main options are reviewed before considering privatisation.

### **SEPARATION OF POSTS FROM TELECOMMUNICATIONS**

The separation of posts from telecommunications has been widely taken up in SSA as a preliminary step in sector reform. There are many reasons for separating posts from telecommunications:

- Differences in the markets served and in the techniques employed mean that separate management teams will achieve better focus on their tasks.

- Cross-subsidies between the two services can be identified more clearly, and as a consequence, managed better.
- The telecommunications business, standing alone, may be better placed to attract private sector capital and management.

Where implemented in SSA, the separation of posts has usually been found to be relatively straightforward and uncontroversial. Usually a clean break has been preferred, with new companies being founded, rather than creating a holding company (as in Holland) or divesting telecommunications (the option chosen in United Kingdom and New Zealand).

Postal services can expect a proportionately greater benefit from separation, since in combined operations the concerns of the telecommunications side tend to have a greater priority for management and for investment.

In particular, the problem of loss-making postal services tends to diminish or even disappear once postal operations are exposed to independent management. The benefits of separation for posts may not be apparent in advance of the event; for this reason, some governments (for example, Tanzania) prefer to keep posts as a state budget organisation or statutory corporation rather than a limited company so that a channel for subsidy is kept open.

For the telecommunications business, being separated from posts does not appear to be significant.<sup>10</sup> Two exceptions to this may be noted. In Tanzania, the refounding of the telecommunications business provided an opportunity to review staffing levels; this looks likely to produce a major gain in efficiency. In contrast, in Ghana, GPT management has used alleged difficulties in implementing postal separation as a means of indefinitely delaying sector reform.

#### CORPORATISATION

Corporatisation—meaning the change in the incumbent's legal status from an enterprise with specific statutory authorisation to one regulated by the Companies Act (or equivalent commercial code)—is a key step in the commercialisation process because it can secure autonomy for an operator, permit standard commercial financial disciplines to be applied, and enable performance to be more easily compared with that of other companies. It also facilitates recruitment of senior staff in, for example, finance, legal, and personnel areas from the private sector.

This study has found, however, that the benefits expected from the corporatisation of state-owned operators in industrial countries have generally not been fully realised in SSA. There are several explanations:

- The incumbent has been allowed to maintain its statutory privileges (for example, in Tanzania).
- The government has retained special controls over operational matters (for example, in Mozambique, where staffing levels and remuneration require ministerial approval).
- The Companies Act or commercial code is not taken seriously as a business discipline because it is out of date (for example, in Ghana, the code, written in 1965, has never been updated).

These examples illustrate the limited significance of formal changes in status and the practical difficulties in securing effective autonomy for state-owned enterprises in SSA. Reliance on external finance may well be a more effective means of enhancing the autonomy of operations. In Swaziland, for

example, improved financial reporting was associated with the first bond issue by Swaziland Posts and Telecommunications Corporation (SPTC), which remains a statutory enterprise.

#### PERFORMANCE CONTRACTS

Performance contracts have been used in several sectors as a means of reconciling the autonomy of state-owned enterprises in the operation of public services with policy direction by central government. Although a useful administrative device for clarifying objectives and assigning responsibilities, performance contracts have well-known limitations regarding incentives and enforcement.<sup>11</sup> Performance contracts are, of course, not contracts in any commercial or legal sense. The examples examined in detail in Benin and Mozambique tended also to reflect aspirations derived from medium-term corporate planning and to be remote from reality.

Much could be done to improve the effectiveness of performance contracts. An example would be to reduce the number of objectives presented to managers to a small set dealing with key issues, such as profitability, productivity, and the waiting list, and basing them around specific improvements on current performance. Performance contracts are, however, an inadequate substitute for the market disciplines and commercial incentives feasible in telecommunications.

#### CONCLUSIONS ON COMMERCIALISATION

A major theme of this report is that the greatest economic gains for SSA countries are likely to flow from the introduction of competent commercial management into the sector. Commercialisation of operating entities is an issue not only for state-owned enterprises. It is a priority in industrial countries in the relatively few cases where the incumbent operating entities were already under private ownership as well as in the great majority of cases where the national telecommunications network is still owned and controlled by the government. So, operating entities in SSA have two tasks: to absorb best practice in commercial management of telecommunications businesses and to learn how best to address their own markets. Operators are unlikely to accomplish both tasks fully on their own. Rapid commercialisation will entail some form of entry.

Incumbent managements are also likely to require continued assistance with the implementation of commercialisation within their own businesses. In general, this assistance should itself be designed so that the partners selected have appropriate incentives to improve performance. That is, the most effective form such assistance might take will be involvement in ownership and management of private businesses. But, in SSA countries where privatisation is not a feasible policy option, assistance with commercialisation could take a number of forms short of outright privatisation:

1. Appointment of directors from the private sector
2. Individual contracts for senior managers
3. Incentivised management contracts with foreign operators
4. Divestiture of ancillary operations

Which of these options is pursued may depend in part on whether the government intends to privatise in the near future. For example, a management contract involving a foreign operator may risk preempting the choice of strategic partner at privatisation, since the partner selected for the management contract will be in a favourable position compared to others.

On the other hand, Cable & Wireless's management contract with Botswana Telecommunications Corporation from 1979 to 1995 has produced significant improvements in performance and has

not led to privatisation. This experience was among the reasons that C&W is not pursuing this type of involvement further. In countries where nationalistic considerations block privatisation with a strategic investor, however, an incentivised management contract offered to domestic commercial interests may be the second-best option.

### ***Privatisation Options***

A number of options are, in principle, available for the privatisation of an incumbent (see box 2-2). Because experience has been limited, however, little is yet known about the practicalities of privatisation of incumbents in SSA countries. Equally important, it is not clear which forms of privatisation would be feasible in SSA, which companies would be interested, and on what terms. The clearest example to date is the concession contract granted to Telekom Malaysia to take over and operate Guiné Telecom. This commits Telekom Malaysia to investing in full digitalisation of the network within five years. We present our perspective on the key financial issues regarding privatisation in SSA countries in chapter 3.

A clarification of objectives by the government is the first step towards resolving what form privatisation should take. Major policy objectives which are commonly set for privatisation include:

1. Raising the level of customer service by increasing investment in the public network. This is the main aim of the privatisation programme in Latvia, Jordan, and Pakistan as well as in Latin America.
2. Improving efficiency through the introduction of stronger corporate governance and better commercial management of resources. Improved use of resources is also a key element in most of the Latin American privatisations.
3. Boosting government finance through sale of assets and levy of licence fees. Sales in New Zealand, Argentina, and Jamaica had the explicit objective of reducing national debt.
4. Promoting the domestic capital market and widening public share ownership: measures of so-called popular capitalism were a feature of privatisations in Malaysia, the United Kingdom, and Japan.

The main economic benefit from the privatisation of operators in SSA countries flows from the rapid introduction of experienced commercial management, able to respond more effectively to demands for services and to make better use of available resources. Other benefits of privatisation are to achieve a better balance of investment finance between equity and long-term debt and, typically, to stimulate regulatory reform. Although privatisation is usually accompanied by a commitment to invest, it appears not to be a necessary step to secure an adequate total level of capital investment in the sector. The flow of funds is already substantial; rather, the constraint is on the capacity of the sector to absorb capital effectively while under public sector control.

Because of the paramount importance of good commercial management, the preferred form of privatisation would normally be a private sale of the incumbent operator to a strategic investor. Many governments and operators in SSA clearly understand this strategy and its implications. This may explain why, in countries such as Uganda and Ghana that have embraced a privatisation policy, the Ministries of Finance are strongly in favour of the strategic investor option, while the boards of directors of the incumbents are resisting, fearing loss of control.

In Uganda, the approach originally favoured by the government was for a rapid sale, with a foreign operating company to acquire 100 percent of Uganda Telecom by paying full value for its assets;

**Box 2-2**

**Privatisation Options**

**Public offer for sale**

- To financial institutions, private investors, and employees
- Majority holding may be retained by government (as in Holland, Malaysia, Japan)

**Private sale to strategic investor**

- Usually to a consortium involving local interests
- The norm in Latin American and CEE countries
- In New Zealand, preliminary to public offer for sale

**Divestiture**

- Separates out discrete parts of a network or services
- A common option for local networks in CEE countries
- In South Korea has led to competitive entry

**Revenue sharing, for example, build-operate-transfer**

- Ownership may not ultimately be transferred
- An example is Shinawatra Group in Thailand

**Management contract**

- Usually introduced for short period only
- Foreign operators now interested only as prelude to share purchase, for example, C&W in Botswana, FCR in Madagascar

subsequently, the government has opted to retain a significant shareholding itself. Assuming interest among strategic investors, the dynamic benefits from the early introduction of a commercial operator probably outweigh any considerations of adding value to the business prior to sale. The retained shareholding would enable the government to secure some additional value through a later sale to domestic investors.

Rapid privatisation appears to be difficult to organise in SSA conditions. Partly, it takes time to secure public acceptance of control being passed to a foreign entity. Partly, there is reluctance to admit the full extent of the incumbent's operational and financial difficulties and for the government to accept the implications. These may include writing off debt, or its conversion to equity. The issue may be crystallised in the price to be asked for the business. Foreign investors may be tolerable only if they are seen to be paying full value for the business. But, as a result of attempts to conceal past mismanagement, the nominal value of the assets may exceed the commercial value of the business. Investors will be mainly concerned with the potential for future earnings and obligations and the risks associated with the investment necessary to unlock the earnings potential; these factors may suggest a lower valuation than the historical cost of assets in place. In addition, perception of substantial country risk means that, almost certainly, investors will wish to limit their exposure by deferring a substantial part of the purchase price for a period until gains from improved performance have begun to emerge. Such a mismatch between the perceptions of government and investors has already emerged in Uganda, where noncommercial investment priorities, bilateral financing, and insufficient planning and implementation have combined to reduce the economic value of the operator's assets.

Apart from the valuation issue, there is evident reluctance among private investors to make substantial financial commitments to public services in SSA countries. Devising feasible methods of privatisation may therefore often depend on minimising the initial capital injection required.<sup>12</sup> In the Uganda Country Study, it was recommended that the financial commitment of the strategic investor be minimised by:

1. Forming a consortium with domestic institutional and private investors
2. The government's retaining a substantial stake which can realise value through sale at a later date
3. Setting a fixed initial price for the sale, with competitive bidding on future levels of investment
4. Franchising of local networks to other operators.

These measures would also serve to reduce the perceived risks of the strategic investor. Offering a period of exclusivity to the new owners would appear to be a further essential element in risk reduction in SSA countries. The outcome of the mixed strategies being pursued in Ghana and Uganda, where the governments are seeking simultaneously to privatise the incumbent and to attract an entrant to mount a competitive challenge, will provide a test of the case for exclusivity in SSA conditions. The norm, largely established by experience in Latin America and Central Europe, is for liberalisation to be postponed for a five- to ten-year period. With only a limited initial commitment to be expected in SSA, the duration of any period of exclusivity would probably not need to exceed three to five years. Nor need exclusivity normally cover services other than international voice telephony.

Where a policy of rapid privatisation has been decided upon, a further practical benefit from agreeing upon a limited period of exclusivity is that the precise shape that liberalisation might take need not be spelled out in detail now. So the inevitable policy differences on what forms of entry are feasible and desirable should not become a source of delay in implementation. Nonetheless, careful definition of the regulatory framework is an essential condition of a successful privatisation. What this means primarily is clarity in policy priorities and the appropriateness of the conditions imposed under licence or contract. By such means, a mismatch in expectations among government, investors, and users can be avoided. As set out in more detail in chapter 4, an elaborate, formal regulatory regime in itself is likely to contribute little to the prospects for successful implementation of a privatisation programme. Investors have repeatedly shown their willingness to make commitments without having formal regulatory structures in place. Again, regulatory reform need not delay the process.

## **Entrant Strategies**

Competitive entry options are considered first. The forms of feasible competitive entry in SSA countries still largely remain to be determined in practice. The discussion is therefore inevitably based mainly on first principles and international experience.

### *Options for Competitive Entry*

In considering the options for competitive entry, the main issues are the expected benefits from entry—investing in new infrastructure, providing choice of services, and stimulating the incumbent—and the likely willingness of potential entrants.



## SECOND NATIONAL NETWORK

Authorising a second national network with limited service obligations is the most common way to initiate competition in fixed telephone services. Experience in industrial countries with this option (Australia, Republic of Korea, Sweden, United Kingdom) is that broadly based entry is attractive to the investor as it maximises the prospects of a commercial return on investment, but a large-scale commitment is unlikely until a secure market position has been obtained. Broadly based entry is also most likely to have a galvanising effect on the incumbent; this was an important consideration underlying the recommendation of a second network in the Country Study for Ghana.

However broad the scope offered to it, the entrant will rely in the early years on profits from international services supplied to business customers. Access to international revenues is therefore likely to be essential. Given the distortions in public telephone tariffs in almost all SSA, this issue is likely to be contentious, especially as entrants cannot be given equivalent service obligations to the incumbent.

Loss of international revenues by the incumbent could endanger its profitability and financing. Rapid tariff rebalancing to prevent this happening would require unacceptable price increases for existing residential customers.

To resolve this potential conflict in policy objectives, the entrant needs to be assured of access to international revenues while the incumbent needs greater freedom to adjust its tariffs over a period of years, at a rate which users can tolerate.<sup>13</sup> Ample precedents for regulatory rules to achieve a reasonable balance between the interests of the entrant and of the incumbent exist. For example, the entrant can be required to share existing international transmission facilities and agreements and to conform to "proportional return" rules, so that its cost base for international services is the same as the incumbent's. If additional protection is required, the incumbent's preexisting level of international traffic could be guaranteed for a period. Obviously, such rules may reduce the potential benefits from entry, and they need to be kept to a minimum.

## INTERNATIONAL SERVICES

Competitive entry confined to providing international services only could also confer significant development benefits if organised under the stringent conditions suggested above. An international services licence for a venture in which the government retained a substantial stake could realise considerable value for the government or generate profits for reinvestment in the sector. Interconnection charges paid to the incumbent operator provide a further means of ensuring that the benefits from competitive entry are shared out. This approach has been adopted in several Commonwealth of Independent States (CIS) countries, for example, Russia and Ukraine, where rapid currency depreciation has limited the interest of investors to opportunities that generate foreign currency.

One version of this strategy would link entry into international services with provision of cellular radio services. The additional merits of this linkage are that the cellular operator is not dependent on the incumbent for delivery of high-value international calls and can more rapidly recover the initial investment. The government of Tanzania offered a licence to Cable & Wireless on these terms in 1993, but the company ultimately decided not to accept, mainly because of the greater perceived country risk of the larger project. Instead, Millicom was licensed to provide cellular services only in the main city, Dar es Salaam.

Relaxing restrictions on the resale of international leased lines could also be an appropriate way to encourage entry. The reseller would provide revenues for the incumbent through leasing charges and interconnection charges. With a properly worked out charging arrangement, the incumbent need suffer no loss of profit. Meanwhile, the reseller would be able to offer an efficient, commercial service to business customers.

International cable, microwave, and satellite transmission facilities are already offered on a competitive basis.

For example, Africa One (AT&T), FLAG (Nynex), and a consortium led by Alcatel are competing to offer undersea optical-fibre connectivity. The promoters of these schemes are seeking the participation of incumbents in SSA. Current international traffic volumes on most routes to and from individual SSA countries, however, are more economically carried via satellite circuits. The promoters therefore face the task of aggregating traffic from a large group of countries to make their schemes viable.

#### LONG-DISTANCE SERVICES

In larger SSA countries, there are in principle several options for entry into long-distance services, but there are practical constraints on implementing them. Of these constraints, the high level of sunk costs in a long-distance transmission system is the most serious. In South Africa, subsidiaries of the railway and electricity supply companies have both proposed the construction of long-distance networks based on their existing infrastructure. Compared to most SSA countries, South Africa has relatively developed infrastructures and low risks for investors, so that what is feasible there may not work elsewhere.

The use of domestic satellites to provide public telephone services has the lowest entry cost but faces difficulties of integration with existing networks (these problems are resolvable, as has been shown in, for example, Mozambique, where TDM uses domestic satellite transmission for its interregional network). The use of satellites in conjunction with a cellular radio network may well be feasible and has been proposed by the operator in Ghana.

#### LOCAL NETWORKS

Competitive entry at the regional or local level may also be feasible in some SSA countries, for example, in business districts or in areas not being well served by the incumbent. Zanzibar Island is a practical instance where these options can be explored. A private sector proposal to the government of Tanzania to take over the existing business of Tanzania Telecommunications Company (TTCL) on Zanzibar Island appears to hinge on securing direct international access. In effect, the new entrant would constitute a regional network with exclusivity (that is, complementary rather than competitive entry). These requirements seem unlikely to be met, because they depend on the cooperation of TTCL. A more modest scheme with international access might be based upon a limited geographical area, such as the special economic zone being created on Zanzibar. This would begin to be competitive, in that the entrant would have to offer attractive terms to customers as an inducement to locate in the zone.

Alternatively, the bidder might be induced to forgo direct international access in return for reasonable interconnection terms. For example, the local network might be allowed to keep revenues received from customers and pay a fee per outgoing minute of use at a level that covered TTCL's costs of carrying international calls. In this way, the cross-subsidy between international and local networks would be retained within Zanzibar.

As these options illustrate, the prospects for competitive entry at the local and regional level will usually turn on the technical and commercial terms of interconnection that can be negotiated with the incumbent. Given the experience acquired with entry in industrial countries, defining interconnection terms should not in itself be a barrier to entry. Where the incumbent network is being inefficiently managed, however, it may be difficult for the entrant to secure sufficient access to the operator's facilities. In the absence of cooperation by the incumbent, the entrant will have to rely on the support and competence of the regulatory authority.

## CELLULAR RADIO NETWORKS

Cellular mobile radio services are more conducive to sustainable competition than fixed voice telephony because some customers are willing to pay higher sums for service and because the operator has a lower entry cost and a lower sunk cost in customer connections. There is evident willingness among strategic investors to offer cellular radio services in SSA countries, even without an assured monopoly. Other than in South Africa, Ghana, and Nigeria, competitive cellular radio networks are not yet operational in SSA.

Continued technical change provides an opportunity for licensing authorities to develop sequential strategies for promoting competition between cellular operators and between cellular and fixed networks. Movement by cellular operators into fixed services is likely to happen only cautiously in SSA, since it means forgoing the perceived advantage of low commitment. Cellular operators may well be interested in the opportunity to install and own long-distance transmission facilities and in broadening the range of services offered to business customers.

In markets where a cellular radio licence is a valuable asset, the government may be able to secure commitments from entrants to deploy radio technology in the provision of fixed network services. The GSM licences granted in South Africa to Vodacom and MTN obliged them to install public telephone lines in township areas (see box 2-3).

## PRIVATE NETWORKS

SSA countries have tended to follow European rather than North American precedents in restricting the connection of private networks to the public telephone network. The usual reason given is fear of loss of profitable long-distance traffic, but this rationale scarcely applies. With few exceptions, operators in SSA make profits almost solely on international services. Despite the restrictions imposed, private and state-owned companies have built up communications infrastructure, often on a national

### **Box 2-3**

#### **Fixed Service Obligations of RSA Cellular Operators**

The GSM cellular mobile radio licences granted to Vodacom and MTN by the government of South Africa in 1993 obliged the operators to install and operate 29,500 main telephone lines in underserved areas. Vodacom (a joint venture between Telekom SA, Vodafone of the United Kingdom, and Rembrandt) is required to install 22,000 lines and MTN (Cable & Wireless with local interests) 7,500 lines over a five-year period. Vodacom and MTN have developed a variety of PCO (pay phone and phone shop) franchises and financing packages for the Community Service Telephone Operators (CSTOs) who will provide the service. The objective of these packages is to minimise the cost of the subsidy the cellular operators will be required to make over the life of the scheme. That is, the CSTOs are being encouraged to be as commercial as possible in the way they run their franchises.

scale (railways, electricity) or in remote areas (mining companies). These facilities could be better utilised. This issue has come to the fore in the policy debate in South Africa, where one of the tasks of the new Universal Service Agency will be to ensure that Telkom cooperates with other infrastructure providers (such as Escom, the national electricity company) to ensure efficient access to services. But existing infrastructures could also provide the foundation for an alternative domestic telephone service. Such a possibility can most easily be opened up by removing current restrictions on private networks under

licence and by the drafting of appropriate interconnection rules. If only domestic in scope, it would usually be inappropriate to impose investment or service obligations on this type of entrant.

#### CONCLUSIONS ON COMPETITIVE ENTRY

The main conclusion is that governments should remove the statutory monopolies of incumbent operators and generally adopt open entry policies in the provision of telephone service, with only limited temporary exceptions if necessary to facilitate privatisation. In relation to international services, entry should be subject to carefully defined licensing provisions governing interconnection and international accounting arrangements.

#### *Complementary Entry*

Where telecommunications are so underdeveloped, as is the case in most SSA countries, the activities of many entrants can complement the efforts of incumbents to provide services to the public. That is, the combined activities of entrants and incumbents will often increase the size of the market, rather than be a contest for market shares. Conversely, the strategies described here for promoting complementary forms of entry will secure some of the benefits normally expected from competition.

#### DIVESTITURE

In a few countries, it may be appropriate to contemplate the divestiture of the national operator as a means of breaking up a monopoly while, at the same time, accelerating the commercialisation process or privatisation. For example, in Argentina, ENTEL was split into north and south divisions, before each was offered for sale to strategic investors.

In SSA, divestiture is likely to be a practical option where it is impossible to proceed with wholesale privatisation, whether because of domestic opposition or because of a lack of investor interest. These factors were prominent in Sudan, where the government separated the international network and a number of urban networks from Sudan Posts and Telecommunications Corporation (SPTC) and then handed responsibility for them over to a new, private company SUDATEL (see box 2-4). The intention was to create a new operator, with sound business prospects and unencumbered by the inefficiencies and service obligations of the incumbent, which could be attractive to private, including foreign, investors. In the event, the objective of attracting a strategic investor into SUDATEL has not yet been realised.

A strategy of separating out the most profitable parts of the network is bound to raise doubts concerning the impact on the financial position of the rump. Putting in place formal cross-subsidy provisions, perhaps as part of the interconnection arrangements between the two networks, would be a safeguard. But then the private investors would not have avoided the burden of paying for noncommercial services (which, in part at least, would be the objective of divestiture). If possible, SSA governments should tackle the problem directly by reducing the burden of service obligations to a minimum. If that is not feasible, then a better approach might be to use divestiture to break down the burden of service obligations to a more manageable size.

For Tanzania, two such options for divestiture were put forward as part of our detailed review of policy:

1. Regionalisation of the network, with each region taking over existing service obligations but free to make its own international arrangements
2. Retaining long-distance and international services in a company based in Dar es Salaam, but divesting zonal businesses

**Box 2-4**

**Complementary Entry in Sudan**

The government of Sudan intends to finance sector development primarily from private sources, and so sought to establish an attractive vehicle for commercial investment. It decided to separate the most profitable parts of SPTC's telecommunications business—international, long-distance, and city networks—into a new company, SUDATEL, which was to be privatised. Originally, the intention was for a strategic investor to acquire control (for example, Sprint, KPN), but when this fell through the government opted to sell shares to the public. SUDATEL has been given a fifteen-year exclusivity on international services and an opportunity to recruit from SPTC's staff. Although initially state-owned, SUDATEL was exempt from the normal forms of government supervision. As a private company, it is subject to license, SPTC's regulatory powers having been handed over to a new regulatory body, the National Telecommunications Council, headed by a senior civil servant and answerable to the minister of communication and tourism.

The regionalisation option might facilitate foreign investment into the more attractive parts of the sector (including the Zanzibar Island case referred to earlier). The latter option, concentrating business revenues in one company, would be closer to the Sudan precedent. But it might also be a means of attracting local business interest in investing in the sector at the zonal level.

**FRANCHISING**

The main form of complementary entry that arose out of the studies of individual SSA countries was the franchising of local networks. A range of franchising schemes was considered:

- Installing and maintaining outside plant, on behalf of national operators
- Handing over the operation of local exchange areas
- Extending the network into rural areas under concession contracts
- Running zonal or regional networks

The main benefit perceived to flow from the franchising of local networks is the introduction of private, and hence presumably more commercial, management into what has proved to be the most difficult area of service provision for state-owned enterprises.

The scale and complexity of franchises would depend mainly on the volume of unmet demand and the degree of interest shown by local businesses in the opportunities. For Uganda, we proposed a scheme for franchising local exchange areas (see box 2-5). A key feature of the scheme is that franchisees are responsible for billing and collection of revenues as well as for provision of exchange connections. In many areas, the franchisees would have ready access to existing local exchanges, as UPTC has substantial spare capacity. In other countries, franchising may include provision of local exchanges as well and hence would need to be on a larger scale than seemed sensible for Uganda. The overall share of revenues assignable to the franchisees would depend on the proportion of network investment and operations for which they assumed responsibility.

The introduction of franchises would require drafting relatively complex licences or concession contracts and could therefore be impeded by undeveloped or unclear regulatory arrangements or lack of cooperation by regional managers of the incumbent.

**Box 2-5**

**Franchising Local Networks**

In Uganda, delay in the connection of new lines to new and expanded exchanges has been a serious constraint on UPTC's ability to meet demand for telephone service. To overcome this, it is suggested that much greater reliance be placed on the use of independent contractors in local networks.

In many countries, operators already rely on independent contractors in various ways to construct civil works, to install outside plant, and to connect new customers to the network. The merits of such schemes are numerous. Project management can be improved by being placed on an arm's-length, commercial basis. Contracting companies are able to specialise and can ensure that best practice is spread to local networks in all parts of the country. If procured under competitive bidding, the services of contractors should also be cheaper than if the work is done in-house.

In Uganda, independent contractors might be given a permanent role in installation and maintenance of local networks. The scheme might work along the lines of a franchise, as follows:

1. Whenever a local exchange is expanded or modernised, bids would be invited from local firms for the work of connecting and maintaining lines to the exchange for its expected economic life (say ten years). Former UPTC staff would be encouraged to form groups to bid for these franchises.
2. Uganda Telecom would draw up a standard franchising contract. The terms of the franchise would stipulate that sufficient lines be installed in the area served by the exchange to satisfy demand. The lines must be installed within a set period from date of application by a new customer and maintained to a specified standard. In return, the franchisee would be entitled to an agreed share of revenue generated by each line. For example, the franchisee might be entitled to, and be responsible for collecting, all installation and rental charges and also receive a percentage of revenue from call charges.
3. The percentage of call revenue payable to the franchisee would vary from area to area according to the mix of customers and expected costs of local network construction and maintenance. This percentage might be the main criterion for selecting the franchisee from among qualified bidders.
4. The franchisee would take over and maintain any existing assets in the local network outside the exchange (outside plant) and existing customer connections.
5. At the end of the franchise period, or in the event of a franchise being terminated, all the assets in the local network would revert to Uganda Telecom in return for a payment equal to their remaining value as determined by an independent assessor.

## **Key Policy Issues**

This section discusses key policy issues likely to arise no matter which strategic approach to sector reform is adopted.

### ***Universal Service***

Universal service, the primary objective expected of the telecommunications sector, has fundamentally affected investment decisions, the organisation of operations, and tariff policies.<sup>14</sup> For SSA countries, it is necessary to review what, if any, version of the universal service objective is feasible.

Historically, the main ideas associated with universal service have been:

- Assured access to all existing users
- Provision of access to the national telephone network to all potential users
- Provision of service on standard terms and conditions
- Provision of service on affordable terms.

The first of these is the formulation of “universal service” developed by AT&T in its pioneer days, when the policy issue was network interconnection or integration. The experience of those days appears still to be relevant for developing countries: the absence of standardised interconnection arrangements had led operators such as AT&T to extend their networks rapidly in order to be able to offer their customers a larger number of people with whom they could be in contact. Rural as well as urban areas were extensively cabled. Once universal service in the sense of network interconnection was introduced, the commercial incentive to invest in network extension diminished significantly.

Universal service relatively recently acquired its now most common meaning of ensuring that as many households as possible are offered a telephone connection on standard terms. It was argued that a single, national organisation of telephone services, in short, a monopoly, was the best means of ensuring universal service in this sense. Although the emphasis on standard terms and conditions for telephone service helped restrain the exploitation of a monopoly position, it did not, in most countries, imply a conscious policy of cross-subsidy within telephone services. Holding prices down for services used by residential customers, who may be more price-sensitive than business customers, is often a sensible commercial strategy for expanding the network and its profitability. The emphasis on low rates for residences has been shown to have come to prominence only when traditional monopoly modes of organisation have come under threat from potential entrants.

The rationale for universal service has many aspects to it:

- The more people connected to the public network, the greater the value of a connection to all.
- The ability to communicate with all parts of a nation has a strategic value and may help promote unity.
- Uniform or “affordable” charges are a form of income redistribution.

Universal service has, however, tended to be an ideal more than a guide to performance. Until about 1980, failure to meet the demand for telephone services was almost universal. Probably only in the United States and Canada did people expect routinely to be connected to the national network on demand and for a reasonable charge.

Nowadays, few industrial countries have lengthy waiting lists for telephones. That is, basic demand for service has been met. With rising living standards, universal service (however defined) is within sight if not actually achieved. This change has come about primarily because sector performance has improved, enabling operators to fund expansion. The factors in improving performance have been technical—reduction in capital and operating costs with new technologies—and partly economic—strongly rising demand coupled with greater efficiency in managing telephone businesses. In many countries, governments have assisted by relaxing previous constraints on investment in public telephone networks and by initiating programmes of sector reform. In combination, these steps have resulted in virtually all industrial countries having at least an adequate supply of telephone services.

In SSA countries, the basic economic problem of meeting the demand for telephone service remains to be solved. Although normally taken for granted by professionals in the sector, the policy objective of universal service seems inappropriate in the circumstances prevailing in SSA.

- In low-income countries, providing universal service, as commonly understood, is impossible. The objective is too remote to be a practical guide for network managers. The Maitland Commission sought a practical reformulation of universal access, which implicitly placed emphasis on provision of public pay phones.<sup>15</sup> This idea has been taken up by a few SSA countries, such as South Africa, but is not being pursued with much enthusiasm by most governments or operators.
- Standard terms and conditions have much less merit when levels of penetration are so low.
- Where, as in most SSA countries, there are severe constraints on financing expansion, a cross-subsidy policy can make it more difficult to meet demand, because demand is stimulated while the ability to self-finance investment may be reduced.

In these countries, moreover, cross-subsidy seems to have arisen as much by accident as design, through selective intervention with attempts to keep pace with inflation and currency depreciation. Can the same agenda of reform measures be expected to secure universal service in SSA countries as it has done in industrial countries? Almost certainly, the answer must be no. Only a general and sustained rise in living standards will enable the great majority of the population to afford telephone service. If the policy objective is more modestly defined as meeting demand for telephone services, then restructuring may have a chance of success.

This policy objective, compared with the prevalent failing attempts at universal service, implies generally higher rates of investment. To generate funds internally, higher prices may need to be charged for services supplied; probably a greater differentiation in tariffs between services and customer groups is also implied. Within a cost-benefit framework, policies that implement some higher tariffs in the hope of improvements in the availability, quality, and variety of services in future require careful evaluation.

These expectations as to how an established operator is to meet demand for telephone service may be incorporated in an explicit agreement. At privatisation, an agreement is always made on the tariffs that can be charged. In several countries, the strategic investor is also given a specific investment target for a period of years based on an assessment of what is required to meet demand.

### ***Rural Services***

Governments normally consider the provision of services in rural areas within the framework of universal service policies.<sup>16</sup> That is, the problem is perceived to be how far to extend access to the national telephone network on standard terms. Cross-subsidy of rural areas is widely practised to achieve this, but



the scale and precise incidence are not well understood. In most industrial countries, the net cost of applying universal service principles in rural areas is quite small.

The position in SSA countries is quite different. Rural and remote areas in SSA countries are best characterised by low incomes and large but dispersed populations; thus revenues from telephone service are relatively low while costs of connecting customers to the national network are relatively high. In SSA countries, the scope for cross-subsidy of rural services is limited because, even if there is a substantial financial surplus from national telephone operations, the scale of operations is typically small and decisionmakers are rarely willing to devote scarce resources to services in rural areas. Certainly, the political influence of rural areas has usually been lower than that of urban areas. In consequence, investment in rural areas is given a low priority in almost all SSA countries.

Given the focus of this study on sector restructuring, the main issue is whether the operation of telephone networks in rural areas on a more commercial footing in practice improves access to services compared to the continuation of present policies. The commercial provision of service in rural areas would normally entail charging higher prices or offering a reduced quality of service, as well as accepting a lower level of network penetration. The question whether, if prices charged for connection in rural areas were allowed to rise, demand could be satisfied and an economic return secured on the investment, is rarely posed or answered.

There is an important technical dimension to the provision of service in rural areas. As the population to be served becomes more dispersed, it may become economically worthwhile for operators to shift customers' means of access to their telephone networks from cable connections to radio links. As the variety of radio technologies is increasing and their cost falling, the point at which such a change of technology should be considered is changing. Considerable interest is being focussed on the adaptation of technology used in cellular mobile radio services to provide low-cost access to fixed network services. Designs are only just becoming commercially available, however; the small scale of operations in most SSA countries limits their ability to implement and manage technically varied network solutions.

Given the ability and willingness to vary network design, the price premium necessary to balance demand and supply in rural areas can be reduced. Because of the constraints on incumbent operators, development and implementation of different network designs might be better entrusted to different businesses. In Africa, many large commercial enterprises are located in remote and rural areas and may be willing to offer to connect other users to the national network (as is already the case in the Copper Belt in Zambia). In this way, common in sectors already subject to competition, changes in the technical options available may induce significant restructuring. To facilitate such changes, the incumbent could be obliged to make available points of interconnection with the national network in all towns of a certain minimum size, so that terms of interconnection of independent networks can be standardised across the country.

In short, it is suggested that the policy challenge posed by the rural areas of SSA countries is to find out whether a commercial approach to the provision of services, unconstrained by ownership, pricing, and technical choices made mainly with a view to serving urban areas, can be made to work and, if so, under what conditions. The elaboration by the regulatory authorities of service standards and the technical conditions of operation are an essential prerequisite to implementing a commercial approach.

Improved commercial management of services in rural areas is a relatively neglected aspect of policy reforms in developing countries, yet the scope for action is potentially very wide. Rural customers may tolerate higher prices, or a reduction in the quality of service offered, particularly if it means that more people have access to service or that service is provided by a local business.

The profitable provision of services in rural areas may be feasible, but it is not going to be the first choice of strategic investors given the opportunity to enter the market. Domestic investors may be willing to, however. In Ghana, for example, the government is considering whether to license independent local networks in rural areas. These might be organised around existing private networks or even be

cooperatives. Apart from the practical issue of interconnection with the existing network, which is not working very well, the main constraint on this development is the continued uncertainty over the future of the incumbent and licensing policy. That is, before making a commitment to potentially risky investments, entrants must be able to determine the range of opportunities that will be available to them, so that they can evaluate their commercial prospects.

If rural areas are clearly unprofitable to serve, and so unattractive to independent operators, two types of policy response are possible:

- Improve management by the incumbent of rural operations, to minimise the scale of, or even eliminate, the loss.
- Formalise the cross-subsidy of rural services, so that continued losses in rural areas do not undermine managerial incentives.

These policies can be rationalised and applied systematically to incumbent operators, so that commercial principles can be extended throughout their business. If necessary, the burden of the cross-subsidy of rural areas can be shared with entrants, through interconnection arrangements or through contributions to a dedicated fund.

### *Tariffs*

The debate over telecommunications tariff policies in industrial countries over the last decade or so has had a strong emphasis on the protection of consumers from the abuse of monopoly power. In particular, the rival schemes of rate-of-return control and price caps have been evaluated primarily according to this criterion. In this intellectual contest, price caps have generally been acknowledged to be superior, because they can be designed not only to restrain profits to a reasonable level but also maintain incentives to be efficient.<sup>17</sup> Customers as well as owners benefit from the efficiency gains by the periodic recalibration of the price cap. In privatisations involving strategic investors, it is evident that the agreements regarding tariffs in particular have been of critical importance in determining the perceived value of the opportunities for private investors. Experience suggests that there is a general preference for rules that operate relatively automatically, without requiring approval or interpretation by the government or a regulatory body. Price caps are superior to rate-of-return controls in this respect as well.

These debates about the methodology of tariff control have, at first sight, little relevance for SSA.

First, the most important criterion by which to judge tariff policies in SSA countries is not how best to protect existing customers but how best to facilitate a rapid increase in the number of customers and the quality of service provided. Monopoly pricing to a degree which might be considered outrageous if practised by an operator in an industrial country could make sense in SSA if it generated substantial funds for investment.

Policymakers in developing countries must make a difficult economic and political judgement about the extent to which the accumulation of profits to finance investment is allowed, to the (temporary) disadvantage of existing customers.

Second, the economic circumstances of SSA countries often militate against finely tuned price controls. Conditions of rapid inflation, whether of domestic prices or of import prices through currency depreciation, render the precise calibration of either rate-of-return or price-cap controls impractical. In these circumstances, state-owned enterprises inevitably find it difficult to maintain prices in real terms.

Where domestic data or forecasts are unreliable, or when the government cannot be counted on to maintain formal price controls because of macroeconomic difficulties, tariff policies may be set by relation to international reference points. For example, in Argentina, the agreement made at privatisation enabled prices for international telephone calls to be set in dollar terms. Application of a similar

principle in Tanzania, without structural change, has helped to maintain an operational and financial balance in international services but has exacerbated disparities with the domestic tariff.

In addition to the overall level of telephone tariffs, the question of an appropriate structure of tariffs needs to be addressed. The key issue here is cross-subsidy of residential customers, ostensibly intended to support universal service objectives. In addition to the general arguments about the use of cross-subsidy to promote universal service, there are specific questions of how to develop practical price controls and to identify precisely who benefits from the rules that are applied. These questions are critical to the assessment of whether tariff policies are in fact contributing to sector policy objectives or not.

## **Policy Criteria**

The first task for governments is to formulate a strategy that will enable the telecommunications sector to meet policy objectives. What are the criteria that might be used to make this fundamental choice?

Our analysis identified three broad options: (a) incumbent strategy; (b) competitive entrant strategy; (c) complementary entrant strategy.

These are not necessarily exclusive options. Many industrial countries have adopted sector policies that combine both incumbent and entry strategies, but the emphasis has usually been placed on one or the other. For example, very few have attempted full liberalisation of switched voice telephony services while at the same time privatising the incumbent operator. Among SSA countries, Ghana and Uganda are offering simultaneously a stake in the incumbent and a second national operating licence. It is too soon to say what the outcome will be in each country, but it seems likely that one or the other opportunity will be proceeded with, not both. In any event, we treat them in this section as discrete in order to simplify the presentation of policy choices. In the table, we relate the strategic options to the four criteria we found to be key in SSA countries:

- The characteristics of the telecommunications market
- The general emphasis of public policy
- The relative success of the incumbent in meeting demand
- The financial and managerial resources available to the sector

Table 2-1 indicates which factor may help to determine policy choice in a particular country.

The general relationship of choice of strategy to market characteristics was discussed in section A above. The larger the market and the faster the rate of growth of the demand for services, the better the entry prospects. The market in most SSA countries tends to be relatively small and slow growing.

Countries differ in their policy priorities, and it is not possible in practice to isolate the telecommunications sector from national preferences or the influence of powerful interest groups. These priorities and interests may constrain the choice of strategy. The critical political issue for choice of strategy appears most often to be the attitude to public services: are affordable prices or efficient provision of service preferred? In many SSA countries, resistance to the privatisation of public services, based on an expectation that prices would rise, has still to be overcome. Among interest groups, the staff of the national operator tend to be the most prominent in resisting radical restructuring.

As noted, the performance of the incumbent is less important in considering competitive entry in SSA countries, where penetration rates tend to be around 1 percent of the population. It is, however, significant in the choice between attracting investment into the incumbent or into complementary entrants. The more successful the incumbent has been in meeting demand, the fewer the opportunities for franchising and related forms of complementary entry.

*Table 2-1: Factors to Help Determine Policy Choices*

	<i>Characteristics of the market</i>	<i>Emphasis of policy on public services</i>	<i>Percent of demand met by incumbent</i>	<i>Resources open to sector</i>
<i>Incumbent strategy</i>	Small, slow growing	Residential or rural cross-subsidy; protection of jobs	High	Operator has good access to funds and management
<i>Entrant Strategies</i>				
<i>1. Competitive</i>	Large, fast growing	Business sector, service innovation	High or low	Operator has poor management; good regulations
<i>2. Complementary</i>	Large, slow growing	Efficient delivery of basic service	Low	Scope for cost savings

With entry, a broader range of sources of finance can be tapped. Access to funds for investment has been found to be a less significant constraint on sector performance than the efficiency with which resources have been managed by government and the incumbent. Incumbent strategies depend on operators being able to secure good managers, whether from internal sources, elsewhere in the economy, or from strategic investors. Successful implementation of entry strategies depends upon relatively effective regulation, which itself depends on the ability of governments to attract and retain good and experienced staff to carry out regulatory functions.

To illustrate this analysis, we summarise the conclusions reached in relation to the five countries examined in detail as part of this study.

In **Benin**, the market is small and slow growing, and OPT has access to sufficient funds to supply almost all the demand for telephone service. Maintenance of the residential cross-subsidy is an important element of policy; serving rural areas has a low priority. We concluded in favour of an incumbent strategy but with accelerated commercialisation. Substantial modifications of existing policy were proposed to enhance the role of the private sector.

In **Ghana**, the market is significantly larger and faster growing, with a strong demand for new services from the business sector. Equally important, the incumbent, GPT, has resisted change, failing to expand the network or to manage it efficiently. These conditions pointed strongly towards an entry strategy. We recommended a mix of competitive and complementary opportunities at national, regional, and local levels.

In **Mozambique**, the market is relatively slow growing, but because of the legacy of war the percent of national demand met by TDM is relatively low. TDM has good access to funds and reasonably competent management; on the other hand, the regulatory system did not inspire confidence. So the risks of independent entry will remain very high. These factors underlay the recommendation that the incumbent strategy currently being pursued be reinforced by privatisation.

In **Tanzania**, the degree of demand satisfaction achieved by TTCL is relatively low. The greatest policy priority was assessed to be the efficient provision of basic service, but the investment required probably exceeds the managerial capacity of the incumbent. We recommended complementary entry at the regional level, if necessary through a programme of divestiture. Such a strategy would also enhance the future possibilities for privatisation.

In **Uganda**, the government is strongly committed to early privatisation of Uganda Telecom in order to improve its management of the national network. It is also in favour of extensive provision of service in remote areas as an element in binding the nation together after civil war, although it is not clear that the infrastructure in the north of the country can be operated profitably. These considerations point to an incumbent strategy, provided that a strategic investor can be attracted.<sup>18</sup>

# 3

## Strategies for Attracting Private Investment

To date, the telecommunications sector in SSA countries has relied for finance primarily on a range of public sector sources—in particular, bilateral loans from donor countries and multilateral loans with international financial institution involvement. In future, meeting the investment requirements to develop the SSA telecommunications sector will require a decisive shift towards private sources of finance. The opening up of telecommunications markets worldwide has meant that investors and private financial institutions are giving the sector much closer attention. In SSA, the trend in economic reform is to remove the controls on access to domestic and international capital which previously limited the financial instruments available (particularly to state-owned enterprises). The high level of indebtedness of SSA countries (88 percent of GNP in 1992) has limited the scope for provision of further financial guarantees by governments. Easier access to private finance in part justifies the partial withdrawal of public sector sources from telecommunications in favour of other sectors.

With the increased supply of private finance has come a greater sophistication in the assessment of new opportunities. SSA governments need to improve the relative attractiveness of the sector. This means going beyond the relaxation of public financial constraints on incumbents. Typically, investors will expect above-average returns to compensate for the generally higher risk of investing in SSA markets. Given the underdeveloped state of these markets, though, many investors will be motivated by the prospects of achieving significant capital growth. In this respect, investments will be more comparable with venture capital projects. For large strategic investors, however, capital growth may not be a sufficient attraction. Few SSA opportunities are of the necessary scale to affect the balance sheets of these corporations. For large investors, as well as for institutional funds, the scope for diversification may be the principal attraction of taking a position in SSA.

Of particular importance for governments in developing new financial strategies will be the decisions they make on ownership, market structure, and economic regulation—tariffs, interconnection, as well as service obligations. For incumbent operators, the main focus will be on their ability to satisfy the commercial criteria of lenders and investors. External assessments will be based on the quality of their investment proposals combined with market and country risk. For entrants, the availability of initial equity appears to be a critical factor.

Both incumbents and entrants have a clear need for corporate financing skills, not just to help with reengineering their balance sheets, but also to identify, and engage in a dialogue with financial markets about, new opportunities. Building this capability may help to secure increased investment even while the sector is undergoing restructuring, for example, through innovative project finance.

### Sub-Saharan African Telecom Investment Requirements

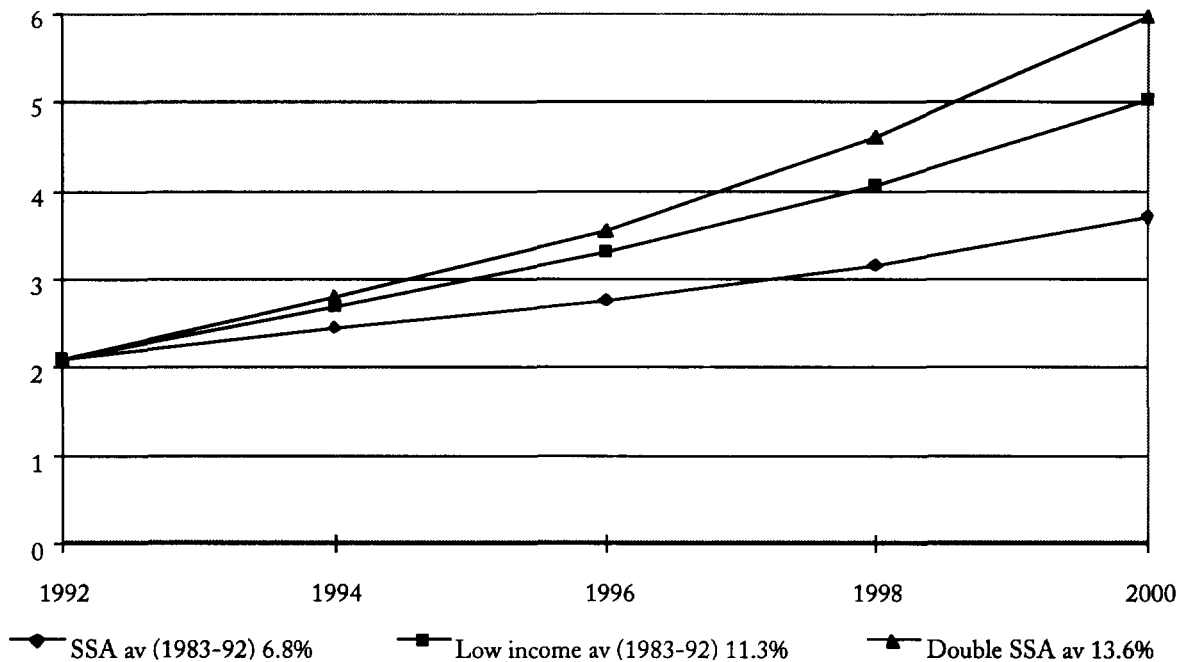
Financing arrangements in SSA need to be put in perspective. The likely investment requirements of the entire region up to the year 2000 are roughly equivalent in size to the Thailand build-operate-transfer (BOT) scheme which is to add 3 million lines in the country. To be effective for the SSA region, new financing arrangements should deliver relatively small financial packages at a low administrative cost. The creation of new financial institutions, purely to finance SSA telecommunications, is unlikely to be justified at this stage.

**Network Growth**

The ITU estimates that the SSA region will have to add over 6 million lines to meet demand for basic telecommunications services by the year 2000. This would require sustained expansion by the region in excess of 17 percent per year—a performance only a handful of countries have achieved over the past decade (for example, China, Turkey, and Gambia).

Many SSA countries lack the preconditions of a sound macroeconomic base and restructured telecommunications sector which favour a rapid acceleration in network growth. A more realistic expectation would be that the region's growth rate could reach the average for low-income countries: 11.3 percent a year (for 1983–92; source: ITU). This rate of growth would add almost 3 million lines by the year 2000, which for most SSA countries would satisfy demand from priority customers and result in a substantial reduction in residential waiting lists (see figure 3–1).

Figure 3-1: Projected Growth Rates of SSA Telecom



Source: ITU

**Investment Costs**

Unless investment costs are reduced from their present levels, even this rate of growth could be unsustainable. Restrictions on procurement under bilateral agreements and a lack of competition between vendors have contributed to an atmosphere where operators feel unable to control investment programmes and tied to a limited choice of equipment. Lack of transparency in procurement procedures has also permitted corruption, further boosting costs to users.

Inadequate implementation of investment programmes, caused by a lack of management capacity, has undoubtedly contributed to the high cost per line added in the SSA. Lack of management capacity would be a factor in decisions to invest in national operators whatever the underlying source of finance. As a point of comparison, commercial operators of new services such as cellular radio or satellite

services do not report substantially higher procurement costs in SSA compared to other emerging markets.

One factor, affecting most countries in the region, may continue to add a premium to equipment costs even in an efficient commercialised sector. The small size of SSA markets means that the economies of scale associated with bulk purchase of equipment are not readily available. This problem may not be easily overcome. Competitive operators, such as in the cellular radio market in Ghana, are reluctant to joint-source equipment for obvious reasons. Encouraging operators to club together for procurement may work for regional projects such as international links, but it is hard to see a practical basis for cooperation on national network development. The main criterion must be that operators have the commercial freedom to negotiate their own financing terms. This would tend to suggest that consortia formed to construct large-scale regional projects would be a better vehicle than schemes put together on the basis of intergovernmental agreement.

### ***Size of Investment Funding in Sub-Saharan Africa***

If operators are able to access commercial sources of finance instead of bilateral funds, then it should be possible to reduce the capital costs of networks substantially. Assuming that costs per line fall to the African average of under \$3,200 (*source: ITU for 1992*), then investment to be financed will total around \$9 billion by the year 2000.

On an annual basis this implies approximately double the current rate of telecommunications investment in the region. The ITU estimates that average investment over the period 1990–92 in the SSA region was \$800 million per year. This level of investment was equivalent to 3.7 percent of gross fixed capital formation—twice the proportion in developed markets and higher than in any other region. To maintain an even higher level of investment will require a steady transformation in the financial performance of the sector so as to permit greater self-investment and to be attractive to outside investors.

Based on experience in other markets, investment in customer premises equipment (CPE) and nonbasic services may add up to at least 15 percent to this total. The reasons for this are:

- The majority of SSA countries have liberalised CPE markets.
- Private network construction will also prove a strong niche market as companies are given greater freedom to meet their own communication needs.
- The mobile sector will be showing good growth by the end of the decade.

### **Financial Implications of Sector Reform**

The traditional organisation of the sector has meant that governments have been enmeshed in its financial affairs. Government policy measures, both macro and micro, continue to have a direct effect on financial flows in the sector. The more important measures include:

- Renegotiation or restructuring of lending arrangements
- Policy on accounts receivable, where the public sector is the main debtor
- Investment obligations
- Regulation of tariffs—key to revenue generation

*Table 3-1: Change in Financing Flows*

	<i>Traditional sector organisation and policy</i>	<i>Sector restructuring</i>		
<i>Ownership of national operator</i>	Government guarantee Telecom cash cow	Corporatisation Financial restructuring Commercial lending Bond issue	–	Privatisation Equity investment Market flotation Dividend policy
<i>Policy on market structure</i>	Subsidy of posts Cross-subsidy of uncommercial services	Postal separation Tariff rebalancing Competitive procurement	–	Liberalisation Early-stage equity Interconnection payments
<i>Regulation</i>	Public spending constraints	Redefinition of universal service Tariff controls	–	Licensing fees Taxes

- Taxes and duties—key to forecasting profitability
- Privatisation policy—scope for wider share ownership.

Table 3-1 illustrates the change in financing flows in line with our sector policy restructuring matrix (see chapter 2):

Rapid sector reform will shift the sourcing of investment funding to the private sector and cause operators to concentrate more closely on cost-of-capital decisions. Most SSA operators have relied almost exclusively on debt to finance their investment programmes, relying on a government guarantee to secure long-term lending from IFIs. The private sector is unlikely to lend on similar terms unless operators can demonstrate a commercially acceptable debt/equity position. Projects financed purely on debt suffer from a number of drawbacks:

- Debt provides inadequate financial discipline, since operators may have the capacity to meet debt repayments over the medium term, even if returns on a specific project have fallen well below the level expected or the level required to fund future investment.
- Debt finance tied to a specific project leaves the operator vulnerable to alterations in its financial performance; for example, if revenue generation is affected by poor collection or a limitation on tariff increases.
- The absence of equity stakeholders commonly leads to a lack of commercial disciplines on the business.

For new operators without a history of state support, building a robust capital structure will be an essential foundation for their business. Financial investors will find that liberalisation of telecom markets will broaden the range of investment opportunities available to them (see box 3-1).

With the commercialisation of sector finances, governments are generally not considering the funding of noncommercial service obligations from their budget.



**Box 3-1**

**Ghana provides a good example of how restructuring the telecom sector will create new financing opportunities.**

**Privatisation of the incumbent (Ghana Telecom)**

- Restructuring of the existing liabilities (in excess of \$250 million)
- Sale of a strategic stake linked to concession contract
- Strategic investor likely to seek co-financing
- Measures to broaden share ownership

**Entry of new operators**

- A second national operator will have investment obligations.
- Six mobile operators (cellular and paging) require financing in excess of \$10 million in 1995.
- Major new investments in private networks will be self-financed.

**Service obligations**

- Privately operated pay phone networks offer entry-level investment opportunities.
- Government is considering a fund to promote rural networks.

***Financing Constraints in Sub-Saharan Africa***

A common perception of SSA authorities is that policy reform is not sufficient to secure telecommunications development in SSA unless financing constraints are also addressed. Looking at the

**Box 3-2**

"Since 1987, the Ghana Posts and Telecommunications Corporation, has in association with the World Bank been engaged in a Second Telecommunications Project. Experience so far gained on the Project underscores the grave predicament of countries such as Ghana which must rely on soft loans and grants from bilateral sources to finance infrastructure development. Because such credit is tied, Ghana has the misfortune of having to procure vital equipment at high cost in spite of the competitive tendering process, simply because the goods must come from a particular country. [In the future] it is planned to involve private sector investors, both local and foreign, in a major effort to accelerate the expansion of the national telecommunications network. The key feature [of this strategy] will be equity rather than debt financing."

Mr E. K. Salia—Minister of  
Transport and  
Communications, Ghana ITU  
Ministerial  
Meeting, Kyoto, 22/9/94

growth in financing over the past few years, it is unlikely that development in SSA could be constrained by any shortage of funds. Long-term loans continue to be available from a variety of sources, even if the World Bank and some other IFIs are now giving the sector a lower priority for development funds. In any event, the investment requirements for telecom development in SSA represent only a very small fraction of the capital made available to the sector globally in recent years. In recent years, over \$2 billion a year in equity capital has been raised on international markets through the privatisation of state-owned telecom companies alone.<sup>19</sup> Western companies typically raise only 5 to 10 percent of investment capital from external equity sources.

New services, such as cellular mobile radio, have found ready sources of private capital to build a worldwide market of over 40 million subscribers within a decade. Even though SSA markets cannot offer comparable opportunities to those in industrial economies, they should be able to offer attractive rates of profitability. Partly because of the underdeveloped state of telecommunications networks in SSA, potential returns on new investment can be very high. Revenues per line of fixed networks in SSA are two-thirds higher than the world average. Cellular calling rates in SSA are typically one-third higher than in industrial markets.

In short, the sector in SSA does not lack investment finance, but access to the new sources of capital. SSA governments are becoming aware of the need to reorient their financing plans towards the private sector, as the quotation below from the sector minister in Ghana indicates (see box 3-2). The issue is discussed in section D below. Prior to this, the internal financing options available are examined in section C.

## **Internal Financing Options**

Over the next few years, sector financing will continue to be dominated by the concerns of incumbent operators. Financial commentators on SSA refer to the “credit crunch” facing state-owned enterprises as they undergo restructuring. While governments financed their investment programmes, operators had little need to maintain their balance sheets in a sound, commercial state. Typically, the following features are found:

- The value of the state’s equity is close to zero.
- Assets are recorded at book value and not revalued regularly.
- Bad debts are written off very slowly.
- Foreign debt is not fully recorded or valued, so that real debt-service cover is either low or negative.

The withdrawal of support from the state budget then leaves many enterprises with unsustainable debt positions. Several SSA operators are in exactly this situation.

For many, their weak balance sheets make access to finance on standard commercial terms difficult. Moreover, accounting information is too poor for investors or lenders to make an accurate assessment. The starting point for such operators should be a restatement of their trading positions. This should underline their inherent profitability from a core business capable of sustained growth.

Net operating margin for the SSA as a whole in 1992 was 26 percent (derived from ITU statistics). A number of national operators report an operating margin in excess of 50 percent, including Congo, Côte d’Ivoire, Guinea, Malawi, Mauritania, Senegal, Uganda, and Zimbabwe. It is possible that operating margins overstate the cash position because many state-owned operators have difficulty collecting revenues due, especially from other SOEs. Collection rates in SSA can be as low as 50 to 60 percent. But given government determination, rapid improvement is possible. In other words, on the

basis of operational finances, many have the potential to finance a major proportion of new investment themselves as long as they are allowed to retain a greater proportion of their earnings.

Improved revenue generation from customers is also vital. The macroeconomic trends in this regard are encouraging. Real GDP in the region has been growing at 2 percent per year over the past decade. Demand for telecommunications services should outstrip this performance as service and manufacturing expand relative to agriculture, thus promoting more intensive use of telecommunications. In a dozen or so SSA countries, telephony revenue already accounts for more than 2.5 percent of GDP. There is clearly scope for expansion in countries with less developed telecom sectors comprising 1 to 1.5 percent of GDP.

### ***Dividend Policy***

As operators commercialise, they may well face pressure from national finance ministries to pay dividends. This is an inevitable consequence of SSA governments being forced to take on much of the debt burden from the restructured balance sheets. How will dividend payments impact on internal financing capability?

Leaving aside questions of the taxation treatments of dividends versus capital gains, dividend policy will probably be most strongly influenced by the preferences of investors. In most cases the SSA government will be the sole or majority shareholder. Ideally, the government should share the same objective as the operator, which is to ensure that sufficient earnings are retained to finance expansion. If this is the prime consideration, then the operator should be expected to pay only a very modest dividend.

Conflict may occur with the finance ministry which may be used to treating the national operator as a cash cow supplying regular net payments to the state budget. Governments should be encouraged, however, to secure the "national dividend" through the rise in value of its shareholding. An exit route for the government's shareholding, via privatisation, will need to be identified before the operator can win the argument for a healthy retention of earnings.

Dividend policies for telecom companies tend to be more important in mature markets. In industrial countries dividend yield is typically 4 to 5 percent, equivalent to \$50 per line. Dividends are usually set with reference to comparable rates to quoted telephone companies. Because of the security of telecom earnings, the dividend yields are frequently at a discount to the market average.

Dividend policy for operators in developing markets, or for start-up companies, typically show much lower yields. A selection of yields for Asian operators shows that only Hong Kong offers dividends close to the developed market average (see table 3-2). Based on this comparison, SSA operators should not be expected to pay more than about 0.5 percent per share.

### ***Self-Financing Ratio***

Over the medium to longer term operators should be looking to self-finance a minimum of 50 percent of their investment from internal resources. It is unlikely that commercial sources of lending would be comfortable with a self-financing ratio consistently below this level. Some fast growing networks such as Mauritius, Botswana, and Gambia have demonstrated very high investment: on occasions the investment budget in these countries would rise to 70 to 80 percent of total revenue.

For developing countries as a whole, the self-financing position was relatively healthy in the 1980s: 65 percent of telecom investment was funded internally (*source*: World Bank). The scale of the investment requirement over the next decade may well cause self-financing ratios to drop. This could mean that the need for external resources to fill the gap could reach \$1 billion. This sum is beyond the traditional sources of external finance, such as international financial institutions, bilateral donors, and

*Table 3-2: Dividend Yield for Quoted Asian Telecom Companies*

	<i>Dividend/Share Price</i>	<i>Date</i>
Hong Kong Telecom	3.9%	March 1995*
Singapore Telecom	1.1%	March 1994
Telekom Malaysia	0.8%	June 1995*
Philippine Long Distance	0.5%	June 1995*
Korea Moble Telecom Corp	0.1%	December 1994*

\*Estimated

Source: Morgan Stanley December 1, 1994.

supplier credit. For example, the total funds provided by development banks for telecommunications projects in all developing countries in 1992 was \$2.4 billion. New sources of private finance are clearly needed.

### **External Financing Options**

Over the past decade telecommunications companies have been highly successful in tapping fresh sources of capital for their expansion. Entrants to the sector have focussed initially on the more entrepreneurial options offered by venture capital funds or private investors. Where these entrants have developed strong market positions (most notably in the case of cellular companies) they have been able to expand via a flotation on stock markets and/or standard bank financing. National operators usually have a broader array of options. Backed by substantial assets and with a dominant position in their home market, operators can choose to broaden their equity base or take on more debt in a variety of forms. Minimising the cost of new capital is one of the main functions of corporate finance departments. In SSA, new entrants have not yet reached a stage in their operations where refinancing of expansion is an issue.

A recent study by the International Finance Corporation (IFC) makes the point that the funding decisions of firms in developing countries are likely to reflect the extent of liberalization of domestic financial markets.<sup>20</sup> Over the past few years the region has taken some very positive steps in this direction. All leading SSA countries, with the exception of Tanzania, have opened the banking sector to competition. Several countries, led by Ghana, Kenya, Nigeria, and Uganda, have moved to end foreign exchange controls and set interest rates at a modest positive real rate.

Governments have also been restricting the operations of state banks, phasing out special guarantees and cheap financing terms for state enterprises. New private banks are emerging, though generally they have neither the scale nor scope of operations to offer an adequate service to large telecommunications companies. The main focus of the new banks is on privatisations and other large transactions.

For the telecom sector, growing financial liberalisation has a number of implications:

- Creditworthy operators will be able to access domestic and international financial markets directly in order to issue commercial paper for working capital and longer-term bonds.
- Operators will increasingly be able to establish credit ratings based on the fundamentals of their business. This offers the potential to overcome some of the

discount applied through country risk rating. It will also begin to promote competitive comparison with other operators in the region.

- Banking reforms intended to address the needs of small and medium-sized enterprises will assist new entrants to the sector in their early growth phase.
- The growing presence of institutional and private investors will lead to improved financial regulation, and with it demands for greater disclosure and improved accounting standards. Compliant operators will greatly improve their access to financing sources.

### ***Approaches to Financial Restructuring***

Restructuring of the debt position and an injection of equity capital have been seen as preconditions to shifting to a new funding basis. The process of financial restructuring has been slow. A major reason has been the reluctance of SSA governments to accept responsibility for the accumulated debt burden of the national operator.

One approach, as yet unexplored, is to place much of the burden of financial restructuring on new investors. In this case an equity investor would in effect purchase the liabilities of the operator. The disadvantage of this approach, from the perspective of sector policy, is that it may place the government in a weak position to negotiate additional investment obligations with the new owner.

The indications are that strategic investors may be extremely cautious about committing substantial equity capital to SSA markets. This proposition has yet to be tested for fixed operators in SSA, but experience in Eastern Europe suggests that foreign equity investment rarely rises above 15 percent of investment requirements. Total equity depends on the valuation of the assets contained in the business, though this contribution may not raise this proportion substantially. As a rule of thumb, cellular operators in SSA rely on equity to finance less than 10 percent of their operations. The lower proportion for this service may be because cellular customer revenue can be relied on to fund a much higher share of investment.

It is difficult to generalise about the debt/equity position which operators should aim for. Nevertheless, if we assume that up to 50 percent of financing can be raised from internal sources, and second, that equity funding is unlikely to meet more than 15 percent of needs, then the gap to be filled by debt will be 35 percent at least. Put another way, a realistic debt/equity ratio for telecom companies is in the range of 4:1 to 2:1.

Alternative options could allow investment in the sector to proceed, without the early sale of equity. It should be stated, though, that these options do not rule out the need for financial restructuring. The options fall into two groups:

1. **Corporate-financing techniques:** These involve a more limited restructuring of the operator's finances such as leasing arrangements, or the issue of new financial instruments such as bonds backed by guarantee, or a security backed by the assets of the business.
2. **Creation of new investment vehicles:** These are usually linked to a specific project and range from the operation of new services on a franchise basis, the creation of build-operate-transfer type concessions, or the licensing of new operators.

Some of these options are now examined in more detail.

**Box 3-3**

**SSA Equity Markets**

Equity markets in SSA are at an early stage of development. Total capitalisation is only \$9 billion compared with \$250 billion for South Africa alone. So far only 14 SSA markets are active but others are coming on stream. Ghana is the largest market: \$1.85 billion—equivalent to 50 percent of GDP—mainly due to quotation of Ashanti Goldfields Corporation (AGC). The only other markets in excess of \$0.5 billion are Zimbabwe, Kenya, Mauritius, and Nigeria. In all, SSA has 400 listed stocks, with the 25 biggest firms accounting for half of the market.

**SECURITISATION**

Securitisation in the SSA context is the process of creating a security out of assets of companies or statutory corporations located in SSA which is issuable in the international capital markets. The company can merge assets (including, in some instances, future receivables) into new liquid debt or equity securities. To date there have been few deals of this type in SSA. One example, in December 1993, was the issue of bonds by the Republic of Congo secured by oil receivables from Agip, an Italian oil company.

This form of financing should be attractive to SSA operators whose net international settlements represent a secure hard currency earnings stream. As privatisation in SSA gathers pace the privatised companies will lose their access to the national budget. Because they will no longer be able to rely on central bank guarantees in international financing, their demand for financing techniques such as securitisation will increase. Securitisation should be attractive to potential investors because they are evaluating the cash flow of the underlying assets as the main source of repayment as opposed to the entity.

Financing investment directly out of international settlements is not new, but the advantage of this financing method is that it allows an operator to realise future earnings while improving its balance sheet. Investor agencies should find it relatively easy to rate these securities based on the historical record of international settlements, which are already governed by international regulations. This record minimises delivery and sovereign risks common to commodity trading.

**BOND ISSUE**

Debt finance can be raised in local currency in most SSA countries. Debt denominated in local currency avoids the risk of exchange loss. Local banks can usually provide only limited short-term credits. Long-term loans can be raised domestically through bond issues.

An example is the bond floated by Swaziland PTC (SPTC) in December 1993 backed by a government guarantee. Shortage of savings instruments locally makes this an attractive opportunity—the interest rate payable on the face value of the debenture was 13.25 percent at a time when inflation was close to 10 percent. The debt raised in this manner increased the outstanding debt position of SPTC by around one-third. The operator's debt/equity position had been improving steadily for some time—from 2.3:1 in 1989 to 0.9:1 in 1993. The successful bond issue allowed SPTC to repay all of a short-term borrowing facility put in place by a syndicate of local banks. External debt met almost three-quarters of the cost of the investment project. Overall, the investment programme put in place by SPTC is expected to double the number of telephones in the country within two to three years.

## STOCK MARKET FLOTATION

An initial public offer on the stock market is not usually advocated for SSA operators for two main reasons: it does little to improve managerial efficiency, and local equity markets rarely have the capacity to handle a sale on this scale. The former point can be dealt with by careful design of the privatisation, either by combining provision for local investors with sale of a strategic stake or by phasing the sale, having strategic investment followed within a set period by a public offer (as was the case in New Zealand).

The latter point about the capacity of local markets is a frequent complaint of investors, who say there is a lack of adequate liquidity for local trading. The small scale and wide spread of stock make investment in SSA markets suitable only for specialist funds and private investors. This is not so much an argument against adding to the number of quoted stocks, however, as a note of caution about the process and the proceeds. Moreover, there is the positive example of the Ashanti Goldfields Corporation flotation in Ghana. This flotation was on a much larger scale than any potential sale of Ghana Telecom—or of most SSA operators—and over \$60 million was raised from local investors in Ghana.

## BUILD-OPERATE-TRANSFER

Often, BOT is used as a shorthand term for any of a range of project-financing schemes that involve repayment of debt or equity out of a share of revenues, without permanent change of ownership. The experience with actual BOT projects in Indonesia and Thailand seems to indicate that this particular type of project financing is best suited to large-scale, relatively straightforward capital investments. Partly, this is due to the transaction cost of the process, involving as it does many different partners, but it is also because, once determined, BOT projects can be relatively inflexible to changing network needs. The SSA region does not offer telecom infrastructure projects on a similar scale to these examples in Southeast Asia.

If a BOT project is being pursued because of a reluctance to restructure or privatise the national operator, then licensing a second operator may be a preferable policy option. This policy would be more likely to secure an equity contribution from investors, and would also allow much greater flexibility in how the second operator met demand for services.

## CATEGORISATION OF OPTIONS

The mix of financing options available to telecommunications companies can be set out as in the following matrix (see table 3–3). The options will depend largely upon whether the business seeking finance is the incumbent or an entrant. Financing strategies are therefore related to the reform strategies described in chapter 2.

**Incumbent choice:** The incumbent's main operations will remain self- or debt-financed while in government ownership. Equity can be accessed for joint ventures, for example, to develop new services. With privatisation, a fundamental restructuring can be pursued involving both debt and equity. If there is a policy choice not to pursue privatisation, then various forms of project finance might be explored.

**Entrant choice:** For new entrants, early-stage equity will be key. Quite modest equity stakes may be sufficient to secure financing for the initial investment programme (5 to 10 percent of total). Small entrants, for example, for service provision or limited network operation (paging, etc.) may secure backing from local entrepreneurs. It is also possible that incumbents will assist with the financing of complementary entrants, such as local network franchisees. For larger entrants, for example, for cellular or for competitive

*Table 3-3: Financing Options Available to Telecommunications Companies*

	<i>Foreign</i>	<i>Local</i>
<i>Equity</i>	Strategic investors Emerging market funds Expatriate Africans	Local institutions Individuals Retained earnings
<i>Debt</i>	Supplier credit Securitisation International donors Commercial banks Project finance	Local bonds Commercial banks

entry at the national level, a mixed foreign/local consortium might be more appropriate. As refinancing becomes necessary over the medium term, entrants will be assessing both foreign and local debt sources. Limitations of local capital markets may become more apparent at this stage.

### **Investor Interest in Sub-Saharan Africa**

Competition for capital resources has increased worldwide. If the twenty-five new privatisations expected in the next two years or so materialise, the cumulative capital required could total \$150 billion. Additional capital may be required for the financing of network expansion of operators that have already been privatised and are now expanding. Consequently, institutions capable of making multimillion-dollar investments will have a number of projects competing for their attention and funds. SSA markets will have to overcome the risk premium they commonly attract compared to the relatively safe and risk-controlled environment perceived to be offered in North America, Europe, and Southeast Asia. To be competitive, Africa must identify investor criteria and package persuasively the opportunities they can offer.

#### ***Investor Conditions***

Private investors evaluate investments against a fairly consistent set of criteria. These criteria tend to be shared across all categories of investor, although risk may be weighed differently according to the risk-acceptance level of each investor. Broadly, these criteria are as follows:

##### Internal factors

- Acceptable financial return
- Strategic fit

##### External factors

- Enabling foreign direct investment (FDI) regulations, including repatriation of profits or convertibility of earnings into hard currency
- Political stability reflected in low risk of nationalisation of assets, reliable staff and secure assets, a fair procurement process free from corruption
- Economic stability, steady growth, and expansion of economy



- Market size and growth potential measured in terms of population concentration and pent-up demand for a range of services offered at economic prices
- Reasonably developed financial markets measured in terms of depth and liquidity
- Legal and regulatory structure that ensures commercial pricing, predictability of government decisions, enforceability of contracts, and provision of a forum in which to pursue claims against the government in case of any breach of covenants

### ***Weighting of Criteria by Investor***

The different types of investor will attach varying weights to these criteria.

### **THE LARGE TELECOMMUNICATIONS OPERATOR**

Large telecommunications operators are generally relatively risk-averse. Only recently liberalised themselves, they have a heritage of no risk and the commensurate guaranteed returns. In addition, telecommunications operators are generally accustomed to operating in a domestic environment and dealing with governments. Large operators are most able to take advantage of new international investment opportunities and are the most sought-after partners for consortia and countries seeking foreign capital and expertise. Operators have industry experience and management know-how essential to understanding and evaluating the opportunities offered in newly restructuring sectors. They also have the management know-how to resolve issues critical to the stabilisation of foreign operations and to creating the foundation for future success. Successful large operators also generally have the financial resources to make large-scale investments in other operators. Such operators tend to look for long-term investments of equal to or longer than fifteen years. This time horizon, combined with the obvious synergy with core operations, identify operators as strategic investors in the business.

Criteria used by large operators to screen opportunities will vary according to the specific business strategy of the operator but generally can be summarised, in order of priority, as follows:

- **Strategic synergy:** Any investment must support overall strategic objectives.
- **Financial return:** Return must be at least as good as the corporate target and reflect risk premiums.
- **Political stability:** There is no risk of nationalisation or to safety of staff and assets.
- **Economic stability:** Growth prospects are good, tax structure predictable and reasonable.
- **Enabling regulatory framework:** Commercial pricing and evolution of competition are supported.

The existence of a screening order implies that investments can be made in environments where some of the criteria are not met.

Large operators will invest where the financial return may appear poor, where political stability is uncertain, and where economic prospects are gloomy, provided the achievement of the overall corporate strategic objective(s) requires that such an investment be made. It is likely, however, that such investments will be modest and narrowly focussed.

Strategic objectives cannot be safely generalised for all large operators in any detail. Given the opening up of international markets, the integration of communications and information technologies, and increasing standardisation, it is safe to say that virtually all large operators are looking for a global capability and presence. This capability may come through ownership of facilities or through the signing of exclusive operating agreements. Today, while virtually all large operators have operating agreements with most African countries and some large operators have invested in Africa over time, large operators are not giving priority to Africa in their investment strategies, with the solitary exception of Telkom of South Africa. Most large operators have departments run by senior staff members to cover the region. For management purposes, however, Africa is usually grouped with other growth regions such as the Middle East, Asia, or Central and Eastern Europe. Africa is monitored, but active investment plans tend to revolve around the other growth markets.<sup>21</sup>

The decision to play a passive role in Africa, relative to other regions, is a function of the competition of other, higher-growth and higher-return markets. Few international operators have experience managing a very diversified portfolio of worldwide operating positions. Those that do, principally C&W, FCR, and the Marconi Company of Portugal (CPRM), are already present in SSA. Other operators building such portfolios, for example, the Baby Bells and a few of the leading European telecom companies, find certain characteristics of the African market discouraging. These can be summarised as follows:

1. SSA is a difficult environment in which to work.
2. Operations in the countries of SSA are not sufficiently profitable and result in a dilution of the historical profitability of the operator world-wide.
3. Business in SSA countries is very risky compared to opportunities elsewhere.
4. Many operators claim insufficient resources or unwillingness to manage a level of perceived corruption.
5. There is potential for conflict of interest with correspondents for international services with whom the operators have been doing business.

These conditions encourage an investment vehicle involving local partners who provide services to customers that the large international operator cannot provide by itself and that the important customer requires.

#### THE SMALL TELECOMMUNICATIONS OPERATOR

Small operators share the investment criteria and overall commercial objectives of the larger operator. They are, however, generally more opportunistic in approach and more limited in scope. International investment opportunities are new to most small operators who, like the larger operator, have been accustomed to sole occupancy of a domestic market. As small operators are liberalised and freed to explore new opportunities, they are looking actively at international markets for the first time. Criteria used to evaluate investment opportunities tend to reflect this inexperience and are not as precise nor as quantitative as criteria governing the investments of the large carrier. They follow a clear logic, however, that can be summarised as follows:

- Expansion beyond their own relatively small domestic market
- Acceptable financial return

- Strategic advantages
- Opportunities for risk-sharing through joint ventures

The criteria reflect the needs of a business exploring new markets for the first time. The definition of what is an acceptable rate of return varies by operator but may generally be assumed to approximate the return earned in the domestic market. Ease of management tends to equate to geographic proximity or historical ties, which may be colonial. The strategic factors also vary by operator. As with the larger operator, strategic objectives may revolve around customers, products, or markets. Regardless of strategic intent, the operators will evaluate opportunities for investment against that intent. The relative inexperience of the small operator leads to a preference for joint ventures or for participation in investment consortia.

Like the large operator, the small operator believes that Africa cannot yet compete with other expansion opportunities. For most European operators, Eastern Europe and the countries of the former U.S.S.R., including Russia, offer more attractive opportunities against the investment criteria. They offer geographic proximity and are currently the objects of a critical mass of private investment inflow, which has been supported by a concerted effort on the part of the international community. The main result of this effort has been a number of privatisations, providing a comfort level for would-be new international investors.

Over the longer term, the small operator may be attracted to Africa. At present, regional priority rankings tend to put the countries of Sub-Saharan Africa in last place behind Western Europe, Eastern Europe, Latin America, Asia, North Africa, and the Republic of South Africa. Small operators indicate that they will turn to SSA only when other opportunities are exhausted or when opportunities that they cannot see by themselves are identified by multilateral organisations.

#### FINANCIAL INTERMEDIARIES

When financial institutions invest in telecommunications, on behalf of their customers or on their own account, the primary criterion for investment decisions is financial return. The yield is critical and short-term investments are common. As part of a feasibility study for the ITU Worldtel venture fund, infrastructure funds and other financial players were surveyed by McKinsey on these issues. Their response can be summarised as:

- Average return on equity: 25 percent
- Average term of investment: 6.5 years

Financial institutions are much more concerned with capital appreciation than are operators. For financial institutions investing on behalf of clients, strategic fit is a secondary consideration—probably because the institutions feel less able to make this judgement.

Very few financial institutions are focussed on Africa in the short term. Uniformly, their strategy is to follow financial return and volume of business, both of which are better in other regions. The countries of Latin America and Asia have a proven record of offering higher returns in the short to medium term for telecommunications projects. The volume of business is greater in Eastern Europe, and the opportunities for business development are very attractive as key multinational customers of the financial intermediaries move into these markets.

Africa is consequently not a current strategic focus. The Asian market activity and the Eastern European market size outweigh what are perceived to be the modest benefits of doing business in Africa. Objective criteria aside, the countries of SSA are also perceived as more difficult environments in which to do business. Corruption and uncertainty are most often mentioned as reasons for not targeting Africa.

The lack of commercial infrastructure together with the presence of bureaucratic red tape impede efficient management of the investments, threatening the ability to achieve required returns.

#### DOMESTIC PRIVATE INVESTORS

The role of the domestic private sector in many SSA economies has been minimised until recently. Indigenous entrepreneurs were presumed to be scarce. In addition, many believed that entrepreneurial functions are better performed by the government than by private individuals and that development requires strong government intervention.

Instead of encouraging the few private entrepreneurs and providing incentives for the development of the private sector, government policies have deterred domestic investors by restrictive monetary policies, high interest rates, and devaluations. Private investors in SSA typically experience difficulty in obtaining long-term loans and credit because heavy borrowing by governments and public enterprises have crowded them out of financial markets.

This picture may be changing. For example, in Ghana, which has benefitted from over a decade of economic growth and stable government, skilled expatriate workers are returning. Unofficial estimates indicate that this group is spearheading a significant repatriation of capital as well: \$500 million in 1993 (*source*: Databank, Ghana). Evidence that this trend is transforming the scope for domestic private investment comes from local participation in the AGC flotation.

### **Valuation of Investment Opportunities**

Before proceeding with the award of a licence or the sale of the incumbent, the government needs a clear view of the potential value to itself of the investment opportunity being offered (the potential value to investors has been examined above). Three main factors are to be taken into account:

1. The maximum value of proceeds to government
2. The estimated cost of service obligations and other regulatory requirements
3. The cost and complexity of completing the transaction, which may have a disproportionate impact on willingness of investors to pay

In an underdeveloped financial market, where the investment climate is characterised by perceived high risk, secure full value for an opportunity at the outset is difficult. This implies that the government should set a low entry price and seek to benefit from later success. This could be done either by retaining a substantial shareholding at privatisation and agreeing to a progressive dividend policy, or providing for the taxation of revenues.

#### ***Maximising Proceeds***

In relation to the sale of the incumbent, the general view is that proceeds are maximised by an international competitive bidding process with the offer of a period of exclusivity and guarantees on prices that can be charged.

The applicability of this model of privatisation to SSA countries has yet to be properly tested. From the evidence, it seems improbable that many countries are able to organise such a bidding process. A high level of indebtedness can be overcome by requiring potential investors to take over part of it. The underlying problems of high costs, past investments, and current operations mean that the net equity value of many networks will be small.

Even after reconstruction of the balance sheet, few willing investors are likely to emerge, with the national operator from the former imperial country having a strong, in-built advantage. In such circumstances, the government may need to rely on alternative methods of valuation. It could offer a restricted sale, for example, and hire independent advisers to determine a fair price, or have an initial public offering to fix the market price prior to placement with a strategic investor (reversing the more normal procedure). The public announcement of a policy on licence fees can be an effective method of improving the transparency of the selection process.

In cellular mobile radio, competitive bidding is more feasible, and it is not so obvious that proceeds can be maximised by granting a monopoly. There is strong evidence that competitive entry can be achieved and, if organised sequentially, investors will continue to be willing to pay for the opportunity. As with fixed networks, government can probably secure proceeds better by taxing revenues than by charging a high entry price.

### ***Cost of Service Obligations***

Placing a value on the cost of service obligations is notoriously difficult. The relevant criterion is the loss of potential profit from fulfilling the obligation, but even in industrial countries, accounts are rarely sufficiently sophisticated to provide a good guide to financial results by service. The costs to a commercial entity of accepting service obligations are also highly sensitive to the precise terms under which they are imposed. With good management, it may be possible for apparently onerous obligations to be discharged with little impact on profitability.

For these reasons, governments have tended to favour easily quantifiable service obligations, such as a certain rate or quantity of investment. Within the limits of forecastable demand for service, the imposition of investment obligations should not significantly reduce the value of an investment opportunity.

For new networks, an initial rollout schedule or coverage obligation is important. It is possible to avoid holding a selection process by open licensing of technically qualified bidders, with a provision for the suspension of licences awarded if the required initial rollout schedule is not adhered to.

### ***Transactions Cost***

Given the relatively small size of investment opportunities in SSA, it is exceptionally important that the cost to the investor and the complexity of the transaction be minimised. Substantial expertise in the design and implementation of privatisation and licensing transactions is now available, but this expertise has its price. SSA governments are rarely in a position to absorb substantial costs themselves and tend to rely on IFIs to finance transactions.

### **Conclusions**

The external financing requirements for development of the SSA telecommunications sector can be met by accessing existing sources of private finance. The main problems for incumbents will be in restructuring their finances and presenting investment proposals that meet commercial criteria. To carry out these tasks will require a transformation in the corporate financing skills of these organisations.

Sector policy also needs to be oriented towards private sector solutions. Governments should be encouraged to look to strategic investors who would bring corporate financing skills with them. Strategic investors in incumbent operators will make the same kind of commercial assessment as private investors in an entrant. Given the established market position of the incumbent, they may be willing to invest a larger amount than in a new business venture. Strategic investors are likely, however, to be unwilling to

make large equity investments in SSA networks. The typical proportion of investment in a fixed telephone network funded from equity may be less than 10 percent and total less than \$10 million dollars. Financing will have to be carefully designed to maximise the utilisation of this equity element. Accordingly, governments will need to be deeply involved in the financing decisions taken as part of restructuring of incumbents. Existing loan obligations may need to be renegotiated.

The exit strategy for private investors will also require detailed consideration. This issue is of concern for investors in both incumbents and entrants. Only a few African equity markets provide the liquidity for even a partial flotation of a telecommunications operating entity. Arrangements can nonetheless be made with financial institutions in the country, such as national provident funds, or with long-term international investors who are likely to be more willing to consider an equity stake in a business with a good track record.

Assistance will probably be necessary from financial intermediaries or entrepreneurs to develop investment opportunities for locally based entrants. Careful consideration should be given on how to incentivise these intermediaries. The modest scale of the opportunities available across the SSA region mean that a dedicated financial institution dealing with SSA telecoms may not be appropriate at this stage. Intermediaries will be transaction-oriented.

Governments can act as a catalyst for project-based sources of finance. This does not remove the necessity, however, for restructuring the finances of incumbents. It should also not divert attention from alternative policy options. In many circumstances, licensing of a new operator may be preferable to linking further development to the incumbent.

# 4

## Establishing a Regulatory Framework

The overriding aim of the adoption of new telecommunications policies is to improve sector performance. As the purpose of regulation is to implement these policies, regulation too must be reviewed, and if necessary, modified, as part of the restructuring process. In this chapter, we discuss the international experience and examine options for SSA countries.

In specifying the reform process in this way, we are implicitly distinguishing between policy and regulation (see box 4-1). That is, regulation includes the following:

1. The regulatory rules which are required to promote the new policies or the changes in emphasis in the old policies

Deciding which laws and regulations to change or adopt involves examining both the policies to be promoted and the likely effect on commercial and operational performance. The latter will require assessing the consequences of new rules for the regulated businesses.

2. The appropriate mechanisms for monitoring and enforcing the regulatory rules

Achieving effective enforcement of regulations requires addressing a number of issues. A key issue is how the regulatory function should be organised (that is, how regulatory responsibilities should be divided between various bodies). The principal choices are between the minister and his department and new regulatory bodies which may be independent of the ministry. Other important enforcement issues will include the nature of the regulatory processes to be adopted (for example, whether these should be administrative or judicial in nature), the form of regulatory instruments (for example, licences, concession contracts, or management contracts), and the nature of sanctions to be imposed if operators fail to comply with regulations.

Ideas and experience concerning regulatory reform are largely drawn from industrial countries, especially from North America and Western Europe. The developing countries in Latin America and Southeast Asia have characteristically concentrated on policy development and implementation, and have tended to neglect defining regulatory rules and mechanisms for monitoring and enforcement. Important pragmatic lessons should be absorbed from this fact. First, it is evident that substantive restructuring can occur and produce benefits in terms of improved sector performance without highly developed administrative arrangements for regulation. Second, even if clarity in regulation is the ideal, investors will tolerate a degree of vagueness or uncertainty in rules and how they are applied.

### Overview of Regulatory Reform

The appropriate content and administrative form of regulation varies with the policies adopted at each stage of reform. In the main reference countries of Western Europe, distinct phases of restructuring can be identified:

- |         |  |
|---------|--|
| PHASE 1 | GOVERNMENT OWNERSHIP AND COMPLETE MONOPOLY       |
| PHASE 2 | COMMERCIALISATION AND LIMITATION OF THE MONOPOLY |
| PHASE 3 | LIBERALISATION AND PRIVATISATION                 |

**Box 4-1**

**What Is Regulatory Reform?**

Regulatory reform may be considered to encompass the whole gamut of policy changes to achieve sector restructuring. That is, sector policy and regulation are more or less the same. At the other extreme, regulatory reform may refer only to changes in the tasks undertaken by the regulatory body for the sector. This approach runs the risk of focussing attention on just one issue in regulatory design, the organisation of the regulatory function, and of neglecting other issues (for example, the purpose and nature of the rules which the regulatory body is expected to enforce).

Recent economics literature adopts a broad view of the scope of regulation. The "new institutional economics" characterises regulation as a form of contract between government, customers, and regulated companies designed to facilitate a service agreement between them and to promote the investment which fulfilling such an agreement requires.<sup>22</sup> Such a view effectively includes all means which a government might employ to influence the behaviour of a corporation within the scope of regulation. Although this view is helpful in that it encourages comprehensiveness, it is difficult to apply the contracts approach in a practical context when designing options for regulatory reform in a given country.<sup>23</sup>

In this study, we have distinguished between sector policies, which comprise the aims and objectives articulated by governments and the restructuring strategies devised to pursue them, and regulatory reform, which includes changes in the rules, procedures, and administrative arrangements to which telecommunications operators are subject.

The discussion of regulatory reform in SSA countries in this chapter must be understood in the light of these findings. There are three steps to the discussion:

1. Clarifying what regulatory reform in the telecommunications sector comprises, which mainly involves reviewing industrial country experience. This is done in section A.
2. Analysing how the agenda of reform needs to be modified to fit SSA circumstances. Typically, economic regulation in SSA countries takes the form of direct government control. Specialised or independent regulation is rare, and the few attempts made to introduce Western-style regulatory bodies have not yet been successful. The appropriate application of reform in SSA countries is discussed in section B.
3. Identifying the minimum level of regulation necessary in SSA countries to facilitate the implementation of the chosen strategy of sector reform.

Not all countries chose to complete all phases or to pursue the different elements of restructuring to the same extent, nor did they necessarily follow the same sequencing.

***Phase 1: Regulation under Government Ownership***

Government ownership and control take two basic forms: the principal operating entity is a department of government or is organised as a state-owned enterprise (public corporation) under statute. In most legal systems, there are also intermediate positions in which the operating entity has the status



of a government department but can act as a commercial agency. In any event, the emphasis of policy is invariably on promoting social objectives through a self-regulating statutory monopoly. Self-regulation is tempered mainly by subordination of the operating entity to controls on public finances and other macroeconomic constraints.

The regulatory rules adopted in Phase 1 typically cover most of the elements of the operating entity's business described in table 4-1. Also, informal regulation may be as important as formal regulation. As a government department, the operator's association with government is (by definition) very close. The minister in person, or a senior civil servant, is effectively the chairman of the board, and employees have equivalent status to civil servants. All aspects of operation are subject to civil service methods of working and remuneration.

Where the state-owned enterprise mode is used (sometimes as the first step in reform), a more explicit framework for setting sector objectives and managing operations can be introduced. An arm's-length relationship between the management of the corporation and government is usually specified in the statute. In practice, creation of a public corporation from a government department has rarely achieved the hoped-for independence. Ministries of finance and the sector ministries are unwilling to loosen controls on investment finance and employment policies.

In many countries, the broad objectives for a state-owned enterprise and the principal means by which they are to be promoted (that is, the "regulations") are enshrined in statute. Usually, it is then up

*Table 4-1: Business Elements Subject to Control*

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<i>1. Market Scope of Business</i>	Extent of monopoly Freedom to diversify Freedom to make acquisitions Freedom to dispose of assets
<i>2. External Financial Resources</i>	Public loans Capital market funds
<i>3. Management of Operations</i>	Appoint of the board Setting corporate objectives (the corporate plan) Nonfinancial targets Investment plans Approval of pricing Personnel policy

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to the board of the enterprise to interpret these, and for the enterprise's management to implement the policies which are established. The board is, in effect, also the regulator. In SSA countries, boards are often supplemented by State Enterprise Commissions, whose task is to set common rules of conduct.

In addition, a range of performance targets may be tied to different operational and commercial aspects of the business. Government controls may therefore cover almost every element of the business, either formally or informally. And many of the important controls, such as the controls on investment, subject the enterprise to the effects of civil service methods of working.

### ***Phase 2: Commercialisation***

Commercialisation essentially involves the abandonment of government-type procedures for the supervision of the operating entity and the emulation of the best commercial management practices. The

change affects both the external relations of the operating entity with the government, for example, as regards tariff setting and the relationship with customers, as well as internal organisation and management.

The main regulatory changes that accompany commercialisation are:

1. Incorporation of the operating entity under company law (termed corporatisation in this study)<sup>24</sup>
2. More precise definition of the limits to the network monopoly.

Limiting the monopoly defines, often for the first time, the market that management is to address and sets a constraint on the conduct of self-regulation. This step is usually preliminary to liberalising markets outside the defined monopoly (in EU terms, the services within the defined monopoly are referred to as “reserved services,” to distinguish them from “competitive” services).

The government as owner retains the responsibility for supervision of the entity. With commercialisation, this responsibility can be discharged through the appointment of board members and through the contracts of senior managers. In an attempt to reconcile the government’s position as owner with the use of commercial incentives for the managers as a group, a performance or management contract, or equivalent determination of the operational and developmental objectives to be attained, may be specified. Often these documents have a regulatory character, touching on tariffs, service standards, and investment priorities.

The increased formalisation of regulatory controls of prices and profits, technical standards, and quality of service reduces, but does not usually eliminate, self-regulation. The separation of regulation from operation has not usually been achieved until policies of liberalisation or privatisation require it. Similarly, a clear distinction between what is appropriate matter for a performance contract and what is appropriate for a licence or regulation is rarely made at this phase of reform.

### ***Phase 3: Liberalisation and Privatisation***

Where the business was previously a state-owned monopoly and a practice of price averaging and cross-subsidy had been adopted, the introduction of competition or of privatisation will have implications for the government’s original sector objectives. The basis of cross-subsidy will be challenged as competitors are attracted to profitable markets but not to unprofitable ones. To improve profits, the incumbent will seek to rebalance prices (reducing them where demand is price-elastic—perhaps because of competition—and increasing them where demand is less sensitive to price changes). The incumbent might also try to withdraw from serving unprofitable customers if prices cannot be increased and an alternative source of subsidy to fund these services cannot be found. In parallel with the modification of objectives, the regulatory means of their expression and enforcement also change.

#### **LIBERALISATION**

A common approach to liberalisation in telecommunications, as well as in other restructured infrastructure industries, has been to introduce competition gradually and unevenly across market segments to lessen the impact of the undesirable effects on tariffs and on service provision. Once a policy of liberalisation in some or all market segments is decided upon, governments must consider whether new regulations are required to promote it. There are a number of regulatory options to consider.

**Structural separation:** In the potentially competitive markets, the incumbent can be divided into several competing businesses in order to speed up the development of competition. Such a step is uncommon in telecommunications, however. The United States provides the best example of this, where

the regional Bell operating companies created through divestiture will be permitted to compete in the provision of long-distance services with AT&T.

**Nondiscriminatory (equal) access:** Such a policy may also be promoted without requiring complete separation of ownership of long-distance and local networks. In the United Kingdom, for example, network competition is being encouraged by the development of rules which (it is hoped) will ensure that competitors gain access to BT's local network on cost-based and nondiscriminatory terms. The principle may be applied not only to access to local networks but to any aspect of the incumbent's network or services which may be required by a competitor company (such as private circuits). Equal access was also found to be necessary in the United States to ensure competition in long-distance services.

**Exclusion:** Denial of the right of the incumbent to enter markets where it might inhibit competitors (for example, Telekom Malaysia was excluded from the provision of digital cellular radio services).

**Prohibition of cross-subsidies:** Such a rule requires keeping separate accounts for these activities so that the presence of cross-subsidy may be judged by the regulator.

**Nondiscriminatory pricing of services:** This may restrict the ability of the incumbent to respond selectively to actual or potential entry. As competitors grow it may be desirable (temporarily) to restrict the incumbent's ability to target competitors' customers through selective price cutting.

The extent to which the rules required to promote competition need to be sector-specific, or existing competition legislation can be relied upon, will depend upon the extent to which the aim is to promote competition with an existing dominant company or in relatively unserved areas of the market, and on the extent to which prevailing competition legislation (which is not sector-specific) takes a strong stance against the abuse of a dominant position. Almost all countries have concluded that telecommunications requires sector-specific rules.

In New Zealand, by contrast, the government considered the existing Commerce Act sufficient protection against possible anticompetitive behaviour by the Telecom Corporation of New Zealand after its privatisation and decided not to create any additional regulations. The practical outcome has been for contentious issues to be resolved before the courts and relatively slowly.

Complementary entry strategies, on the other hand, cannot rely on competitive pressures to protect customers from the market power of operators or to stimulate reforms within the incumbent. Closer attention must therefore be paid to price and quality-of-service controls, as well as performance target for management.

## PRIVATISATION

Privatisation of the incumbent operator will usually need to be accompanied by changes in the organisation of regulation. There is a marked difference in almost all countries in the degree to which the private sector is required to assist in the pursuit of macroeconomic objectives, compared to public sector organisations. Public sector enterprises may be given specific, overriding instructions regarding their investment programmes, financing arrangements, and prices. Private businesses are ordinarily required only to comply with the terms of legislative pricing and capital controls, and to meet specific contractual commitments.

Governments do not seem to abandon traditional sector objectives when privatising incumbents, perhaps because of the political effects of the price and service adjustments which would be implied. The

methods of control previously employed, however, are not appropriate for influencing the behaviour of the company once privatised. This is because:

- They are likely to lack the clarity required by investors.
- Ad hoc interventions by the minister would have a severe impact on the value of the business.
- The increased importance of profit for management will alter their behaviour.

Where privatisation is achieved by ceding control to a strategic investor, the promises on the basis of which the sale of shares took place can be written into a licence or concession contract. No other process of supervisory control is required. Whatever legal form is used, investors will be particularly sensitive to the rules governing tariffs, interconnection charges, the repatriation of profits, and exit options. Governments may retain extraordinary powers to control the resale of shares. Where, as in most cases to date, the government has retained a majority of shares, there is no legal need for such powers.

Apart from the rules just mentioned, which are critical for the potential profitability of the investment, experience shows that strategic investors prefer, but do not require, stability in regulatory rules. That is, governments will be able to modify the regulatory rules after privatisation to meet changing circumstances. For example, periods of exclusivity granted at privatisation may be shortened if doing so is necessary to achieve basic policy aims (as has recently been announced in respect of Singapore Telecom's monopoly of switched voice telephony services by the government of Singapore).

### ***Establishing Appropriate Mechanisms for Enforcement***

The impact of regulation will depend critically on the extent and intensity of enforcement. To be effective any regulatory system should have the following characteristics:

- A definite and well-understood assignment of responsibilities between the sector minister and other regulatory authorities dealing with telecommunications
- Clear rules, standards, and targets incorporated in the appropriate legal and nonlegal instruments of regulation
- Practical procedures for investigation and rule-making by the regulator with the means to generate the information which it requires
- Appropriate sanctions to back up decisions
- Procedures for appeal and for modifying the terms of the regulatory system in the light of experience

In practice, these characteristics of good regulation can be relatively easily developed in relation to entrants. As regards incumbents, however, regulatory bodies must cope with an inheritance of established relationships with many parts of government. The regulatory body may have to work hard for many years to establish its own sphere of responsibility and to secure adequate powers of enforcement.

The regulatory system, either individually or collectively, may rely on what can be described as judicial or administrative processes.

A judicial process of enforcement is characterised by the presumption that certain activities are against the public interest per se. They are not, on the whole, good at establishing whether the specified activities are in the public interest or not, nor are they intended to be. Once a prima facie case exists that

transgressions of the regulatory rules have occurred, it is up to those administering the system to establish the facts. Once transgressions are proved, sanctions follow as a matter of course. Strongly judicially based regulatory regimes are to be found in New Zealand and the United States.

Administrative processes, on the other hand, are essentially evaluative and discretionary in nature. They are not so much aimed at establishing the facts of a case in order to decide whether a particular activity has or has not occurred, as at evaluating the costs and benefits of the activities themselves. Regulatory objectives may conflict, and the regulator may be given some discretion over whether or not he takes action and the nature of decisions he may reach. Because of its flexibility an administrative regulatory system is therefore suited to circumstances of rapid change, or when the desirability of particular policy options is not yet established. Being less complex and time-consuming than a judicial process, it is also more suited to the smaller markets typical of SSA countries.

But discretion makes an administrative system more vulnerable to influence by the dominant operator or other interests, that is, to "regulatory capture." Conversely, from an investor's point of view, an administrative process may be more open to unpredictable intervention by government. Various devices may be adopted to reduce these risks. For example, provision is usually made for an appeal process. Often, this is to a higher political level within the government but may be to arbitration or to the courts.

In reality, regulatory systems contain elements of both judicial and administrative processes. Judges are reluctant to tackle complex technical issues. Administrative processes must provide the regulator with a basis for imposing costs on the regulated firm through sanctions. Ultimately these sections are provided by the courts.

The appropriate form of enforcement is therefore influenced by the nature of the policies which government wishes to adopt and also by market conditions. To the extent that objectives are firm and nonconflicting, and markets large and stable, then judicial processes may be appropriate. Where policy is not firm, markets remain undeveloped, or where change is envisaged, then administrative processes are likely to be more effective as well as less costly.

#### WHO SHOULD REGULATE?

This is a question of allocating the tasks required for regulating a telecommunications sector to the appropriate institutions. The answer will depend on the scale and structure of government. For example, federal systems tend to assign responsibilities at more than one level. As has been emphasised, within the telecommunications sector itself there is a hierarchy of tasks to be assigned. Tasks that involve high-level decisions would usually be assigned to bodies or persons accountable at the highest policy level, for example, a government minister and his department.

Other tasks involving implementation or routine administration of particular policies once they are determined need not be undertaken by the minister or his department in order for them to remain accountable for the outcome. Indeed, there may be some merit in certain tasks being devolved to independent bodies to avoid undue political interference. Deciding which bodies should administer regulatory tasks will involve making difficult judgements based on a range of factors, including:

- *Ownership of the incumbent*

Government ownership requires public accountability. Ministers must therefore be involved in sector policy decisions, such as determining licensing policy. Effective privatisation more clearly requires forms of regulation protected from political interference, although this does not necessarily imply that a regulatory body must be established outside the ministry.

- *Extent and nature of liberalisation pursued*

For competitive entry strategies where the incumbent is still in public ownership, encouraging competition without a conflict of interest on the government's part is more easily achieved through reliance on general competition law (where this is strong) or on quasi-judicial regulation by a regulatory authority with some independence from government.

- *Resources available for regulation*

Notwithstanding the above remarks, an important practical consideration is the cost of regulation. Typically, independent quasi-judicial bodies are difficult to staff and expensive to run.

Market economies have a range of institutions whose functions include regulation of business behaviour, either economy-wide or in specific industry sectors. These institutions are of broadly four types:

1. Regulatory bodies with a remit to check monopolistic and anticompetitive practices across the economy
2. Courts enabled by specific laws to deal with monopoly situations (antitrust legislation) or business behaviour generally (Companies Act)
3. Government departments, either regulating activities or sponsoring state-owned enterprises
4. Sector-specific regulatory bodies that may operate with a degree of independence from government

In the overall process of reform, the balance of advantage between these types of institution alters as reforms proceed. With the principal operator organised as a government department or state-owned enterprise, the ministerial department responsible for telecommunications and the finance ministry will have primary responsibility for setting policy and implementing regulation. Their close involvement will tend to preclude the involvement of any other sector-specific body, and the operator, being state-owned, may be partially exempt from competition law. Once corporatised, state-owned enterprises come under company law, and so the courts can apply standard business regulations to them. Such companies are also usually subject to economy-wide competition policy. With liberalisation and privatisation, it is in principle possible that the bodies charged with economy-wide supervision of commercial conduct will suffice to regulate telecommunications, although only New Zealand has attempted to do without a sector-specific body.

#### INDEPENDENT REGULATORY BODIES

While state-owned, an operator usually remains under the jurisdiction of the government department previously responsible for supervising it. With privatisation, the regulatory function of government becomes paramount, but the potential for ad hoc intervention remains. Many people have concluded that only complete independence of the regulatory function can provide sufficient assurance to investors that ad hoc interventions by government will not occur. With the prominent exception of the Federal Communications Commission (FCC) in the United States,<sup>25</sup> very few effectively independent regulatory bodies are to be observed in industrial countries and none in developing countries that have recently undergone privatisation (for example, Argentina, Hungary, Malaysia). Private investors

have not required regulatory independence as a condition of their participation in the sector. So the practical case for independence of the regulatory body from the government is not strong.<sup>26</sup>

The main reason for advocating that regulatory bodies be independent of government seems to be that, in a liberalised or privatised sector, quasi-legal judgement of commercial behaviour and settling commercial disputes is required. That is, in the terms used above, with sector reform, emphasis should shift from administrative to judicial regulatory processes. The regulatory agenda can be expected to change, especially with liberalisation, and institutions should adapt their methods of working, but it is not necessarily sensible to anticipate events. Investors do want assurances that the government will not change the rules after they have made a financial commitment. But, in practice, policy is not stable over long periods and investors can tolerate shifts in regulatory rules as the sector develops and national economic circumstances change. Assurance that their interests will not be adversely affected by changes in policy is best embedded in licences or concession contracts, which have legal force, and can be reinforced by being linked to the continued performance of obligations, such as network expansion targets. That is, independence of the regulatory authority is neither necessary nor sufficient to provide investors with adequate assurance.

In large measure, decisions about the location of regulatory authority must be made in accordance with national preferences and traditions. In the early stages of sector reform, the primary regulatory task is to help develop and implement government policy. Accordingly, the presumption must be that regulatory bodies should at least be able to act in close coordination with the sector ministry, and that independence is likely to divide and weaken the impetus for reform. In developing countries, where administrative competence is also a scarce resource, it would usually be sensible for the staff of the sector ministry to form the nucleus of the regulatory body.<sup>27</sup>

Policies for the implementation of liberalisation policies usually place great emphasis on standards for equipment and for the interfaces between networks as well as between basic and enhanced services. Defining and implementing standards and interfaces set the agenda for regulatory bodies in industrial countries. Given the complexity of the tasks involved, the scarcity of relevant technical expertise in developing countries, and the lack of resources typically available to government bodies, it is not surprising that no developing country has yet succeeded in establishing an effective standards-setting body in the telecommunications sector, within or outside government.

## **Regulation in Sub-Saharan Africa**

The regulatory reforms in the telecommunications sector in many SSA countries are marked by moves to establish under statute new regulatory arrangements, including new regulatory bodies (for example, Congo, Nigeria, Tanzania). Often, new regulatory bodies are set up ahead of real progress in establishing the policies which the regulators will be expected to promote. We understand that the reasons for this are:

- To distance regulation from political interference and so encourage moves towards privatisation
- To overcome the resistance to reform exhibited by national operators by building up a centre of expertise with an interest in promoting change
- To mitigate corruption by creating a more transparent basis for licensing.

That is, the expectation was that the regulatory bodies would contribute to the making of policy as well as to its implementation. Although lacking decisionmaking authority, the new regulators may

be able to provide advice, to influence public opinion, and to keep the agenda of reform constantly before government.

There are grounds for being sceptical about the contribution to improving sector performance which can be brought about, independently of other developments, by establishing new regulatory bodies before the policy framework is clear. A new regulatory body necessarily begins from a position that lacks political authority; other, more powerful interests are likely to determine the initial policy direction. From the point of view of potential investors, the intermediation offered by the new regulators may well be perceived as an unnecessary complication in doing business in the sector.

Prospective investors want assurance that politically motivated changes in regulation will not adversely effect their financial commitments, once made. But these assurances cannot be given by a new regulatory body if the fundamental policy issues (such as licensing and tariff policy) are still being resolved. The Malaysian experience with regulatory reform illustrates how a directionless regulatory body can be bypassed. Those employed in the new regulatory department have complained that licensing issues and tariff issues are handled directly by the minister, who is approached by the operators and investors themselves. Formally, these issues are meant to be handled by the new regulatory body as part of its licence enforcement function.

The second reason for scepticism is that the tasks these regulatory bodies are supposed to be responsible for are as yet unclearly specified. So it is likely that unnecessary regulations will be imposed, in order that the regulatory body can be seen to be doing something. This problem can be avoided if reliance is placed, in the first instance, on a single document, the licence or concession contract, which is agreed upon between the government and investors. Provided agreement can be secured between government and strategic investor on rules that will govern regulation of the key issues, then a new regulatory body would be redundant.

### ***Progress with Regulatory Reform***

These general observations apply to the five countries examined in detail in the study. All are at an early stage of sector reforms, where the government's priority has been the commercialisation of the state-owned incumbent. In Uganda and Ghana, the government has experienced continued difficulties in the supervision of the incumbent. These have led to the development of proposals for privatisation and the licensing of alternative networks. In Ghana, a new regulatory body, the National Communications Authority, has been proposed but has yet to come into effect. In Uganda, decisions on regulatory arrangements have still to be finalised.

Benin, Mozambique, and to some extent, Tanzania are continuing with an incumbent strategy. Each has emphasised the importance of continuing national monopoly and state ownership for the incumbent, and governments have turned to negotiating performance or management contracts with the companies and their managers as the principal means of promoting improvements in performance. These contracts (in Tanzania, it is called a memorandum of understanding, or MOU) have yet to prove their worth as regulatory instruments. In Benin, responsibility for regulation and for the supervision of operations remains with the ministry; it has not sought actively to enforce compliance with the contract. In Mozambique, which has made more progress with reforms than Benin, TDM has been corporatised, and the minister empowered to give policy direction to the corporation through a new "programme contract." The draft for this contract has not yet been finalised. In Tanzania, key elements of the MOU, such as the provisions for tariffs, have not been implemented.



### ***Evaluation of Regulatory Reforms***

International experience indicates that no particular sequence is necessary in undertaking sector reform. It can be observed, however, in SSA countries as in Western Europe, that those countries which give priority to the reform of regulatory processes tend also to be those which move relatively slowly towards substantive liberalisation and privatisation. In Europe, under the pressure of the EU's 1998 deadline for opening up international services, substantive change is likely to occur in the near future. It is too soon to draw a conclusion as to whether the strategy in several SSA countries of pushing ahead with regulatory changes will ultimately induce broader reform. Evidently, the key in these SSA countries is now to determine the basis of sector policy as quickly as possible. It may be that the remit of the new regulatory bodies can then be adapted easily, or further legislation may be necessary.

The following provides a commentary on the arrangements which have been made in Ghana, Mozambique, and Tanzania, the countries which have advanced furthest with developing new regulatory arrangements.

#### **GHANA: NATIONAL COMMUNICATIONS AUTHORITY**

In Ghana, the Ministry of Transport and Communications issues licences and conducts other key regulatory tasks such as tariff regulation. In 1994, a new regulatory body, the National Communications Authority (NCA), was proposed and draft legislation prepared. The law creating the NCA will give it powers to issue radio licences, taking over this function from the Frequency Registration and Control Board, but is silent on the question of licences to operate telephone networks. Ostensibly, it is still the intention of the government to proceed with setting up the NCA to take over regulatory tasks, but the law has not yet been passed. Meanwhile, the government has announced and is implementing the extensive programme of liberalisation and privatisation already described.

#### **TANZANIA: TANZANIA COMMUNICATIONS COMMISSION**

Tanzania Communications Commission (TCC) was set up as part of a general restructuring of the sector, which also included the separation of posts from telecommunications. TCC was given a broad remit, including radio licensing and advising the sector minister on policy. The minister at the same time has wide powers to direct the TCC. The exact distribution of policy, supervisory, and regulatory functions between the ministry and TCC remains unclear. Although the ministry has stated its intention of limiting its involvement to policy matters, the 1993 Act gives the sector minister the power to give both general and specific directions to TCC. The opportunity therefore exists for the minister to intervene in detail. At the time of writing, the minister has asked TCC to draft licences for the incumbent operator, TTCL, and for a possible regional network in Zanzibar, but no licence has yet been granted.

Although the chairman and part-time commissioners for TCC have been appointed from outside the civil service, TCC will take over many of the previous functions and staff of the ministry. TCC therefore brings little new experience or resources to bear, and itself must embark upon a substantial agenda of training.

#### **MOZAMBIQUE: NATIONAL INSTITUTE OF COMMUNICATIONS**

Mozambique has set up a new regulatory body outside the ministry, the National Communications Institute of Mozambique (INCM). This body is modelled closely on the equivalent body in Portugal, ICP, and is supervised by the minister. INCM has been given the tasks of licensing operators and managing radio spectrum, in addition to advising on policy, setting standards, and carrying out

international representation. TDM, the incumbent operator, has a statutory monopoly and, under the law, is deemed to have a licence. In consequence, it is unclear whether INCM can prepare a real licence for it. To date it has not done so. TDM is effectively supervised by the government directly, with the programme contract as the main regulatory document. This means that INCM has little leverage with TDM, which accounts for 99 percent of the sector.

In all these cases, one of the most important issues, the applicability of the new regulatory arrangements to the incumbent operator, has been left in some doubt. In part, this reflects the uncertainty over policy already referred to, in part, a lack of clarity between the interests of the government as owner and its obligations as sponsor of the new regulatory bodies. Specifically, what is to be the balance between the regulatory responsibilities of the new bodies and the use of performance contracts and other supervisory controls by the government, necessary to improve the framework for management while the operators remain in government ownership?

The provisions already made for the three new regulatory bodies just described do not in fact give them independence from the sector ministry. Their potential effectiveness is also being put at risk by inadequate resources, both money and staff. While the incumbent continues to dominate the sector, it will inevitably be expected to contribute the bulk of the budget of these bodies. But the transfer of funds needs to be carefully arranged if regulatory capture is to be avoided.

These bodies have been set up in conscious emulation of regulatory bodies in industrial countries. There appears to be no good reason for this. The markets they are regulating are small, so that the burden of regulation may be disproportionately large. The tasks assigned to these bodies could be accomplished with very few numbers, provided they have access to relevant external expertise. Putting the requirements of spectrum management to one side, a staff of three professionals—the head of the body, a technical adviser, and an administrator to handle routine customer complaints—would be sufficient in almost all SSA countries.

One significant difference between the structure of regulatory bodies in SSA countries and most European models is the reliance in SSA on a commission with several part-time members to take decisions rather than on a single eminent individual. This difference may reflect the influence of the FCC as a model. Also, it helps to institutionalise and so neutralise political differences as well as providing a bulwark against corruption. Commissions may be more cumbersome to operate than authorities with a single chief, but they are not noticeably less effective.

In short, the manner in which new regulatory bodies are being created in SSA countries appears to be adding to the problems which need to be resolved. Yet another body has been introduced whose role, responsibilities, and resources remain to be determined. The proper functioning of these bodies may become a distraction from the important issue of settling policy matters and the substantive issues of regulation to which these give rise.

## **Further Options for Reform in Sub-Saharan Africa**

Our analysis indicates that the new regulatory institutions being set up in SSA countries are likely to experience considerable difficulty in playing an effective role in sector restructuring. Two sets of options therefore arise:

1. The pattern of regulatory reforms which are likely to be appropriate in SSA
2. Options for those countries which have already established new regulatory bodies

The following describes an approach which takes account of the international experience and SSA circumstances and which, in our view, also provides sufficient flexibility to accommodate phased developments in policy.

### ***Regulation as Part of an Incumbent Strategy***

With an incumbent strategy, the government should focus on the reconciliation of the two, possibly conflicting, types of regulation which must be undertaken:

1. Supervision of the operator as a state-owned enterprise and representation of the government's interest as shareholder through a performance contract
2. Regulation of operators, especially in new services (for example, cellular mobile radio)

A clear delineation of areas open to entry and a careful structuring of activities of the incumbent in these areas is therefore a priority. Although not strictly necessary—since the performance contract can perform an equivalent function—it is probably advisable for the incumbent to be subject to a licence or concession contract. Otherwise, it is difficult to demonstrate a level playing field in activities where both incumbent and entrants are active. Initial regulatory reforms would therefore more closely resemble the current French rather than the current British approach.

Privatisation of the national operator will increase the need for more explicit regulatory supervision of the commercial relationships between it and other operators (both interconnection arrangements and competitive behaviour) and of its treatment of customers where competition is lacking. At this stage, a licence should therefore be issued to the national operator, with responsibility for monitoring the licensee's behaviour assigned to a regulatory department within the sector ministry. Depending on the extent and nature of the privatisation, the licence may supplement the performance contract or replace it entirely.

### ***Regulation with an Entry Strategy***

With an entry strategy, the government should focus on development of a regulatory environment acceptable to investors. The development of a licensing policy, whether involving competitive or complementary entry, is the main priority. The nature of licences on offer would be closely akin to a contract. The rights of new licensees (and the incumbent) to fair interconnection terms should also be supervised by the regulatory authorities.

Given the need for government to continue its close involvement with the incumbent, the lack of resources available, and the shortage of people with relevant skills, regulation should be focussed in the first instance on the sector ministry. This ministry should be given clear responsibility for developing explicit licensing and tariff policies as well as for establishing a performance contract with the state-owned operator. It would help clarify responsibilities if licence-related tasks were placed in a different section from the supervision of the incumbent. Supervision of the shareholder function for state-owned operators would be undertaken in close cooperation with the ministry of finance.

In those countries where a new regulatory body has already been established, a significant element in the regulatory framework tends to be confusing or even missing. That element is the new regulator's relationship with the ministry. It would be feasible to clarify this relationship by assigning monitoring of the national operator to the ministry under a performance contract, leaving the regulatory body to license other operators. Such an arrangement is unlikely to work well and would anyway need to be modified at privatisation, or if a second fixed network is authorised. It would probably be more fruitful

to give priority to developing a licence for the incumbent which places it within the general framework of licensing policy. The government's specific requirements as principal shareholder can then be enshrined in a separate, subsidiary document.

In summary, adopting the approach to reform recommended in this study will have the following implications for regulatory reform:

- Further work on regulatory arrangements should focus on the terms of licences and concession contracts, rather than on institutional aspects of reform. Drafting of these documents should help clarify the regulatory rules and so provide greater certainty for investors. The awarding of licences and setting their terms is most appropriately the responsibility of the minister and his department.
- Independent bodies can offer advice, provide technical services (for example, in relation to frequency assignments), and may subsequently enforce licence conditions. In SSA at least, it is not yet appropriate for sector policy or licensing responsibilities to be delegated to bodies outside government.
- Where investors fear ministerial interference in regulation, a senior public figure (for example, a judge) could be appointed to the position of head of regulation, whether within the ministry or detached from it. External advisory bodies may also be set up to ensure that the interests and concerns of entrants and customers are heard.

## **Licensing Issues**

One of the main themes of the above discussion of regulatory reform is that preparation and enforcement of licences or concession contracts are the key regulatory tasks for SSA countries and can be the foundation for a minimalist system of regulation for the sector.

For the national operator's licence, the simplest way to determine what the terms and provisions actually are is for the licensing authority to write down what it would like and then to alter the draft to reflect what can be agreed. It is most important for the licensing authority itself to draft the main licence, usually with expert assistance. Accepting suggestions from commercial interests is a normal part of negotiations but should not result in passing across the drafting initiative. The licence should also be written in plain language, so that those who negotiate and then enforce the document are sure about what they have agreed to.

Box 4-2 outlines the contents of a typical operator's licence. As the licence is to be used over a long period, it should as a rule contain principles and prescribe procedures to be followed, rather than specific requirements. The licence provides a framework for settling complex issues (such as the terms of interconnection between networks); when first issued, a licence should not try to anticipate and solve all possible issues. As such issues arise and are resolved, the licence can be added to, amended, or supplemented by a schedule or regulation. An exception to this rule may arise with specific controls on tariffs and other parameters which may have been critical to the award of the licence and so should be written into it from the outset.

A critical provision is how the licence is to be amended. It is in neither side's interest for licences to be set in stone. Investors will usually reject conditions that allow the licensing authority to change the terms of a licence at will, but will accept that policy must be allowed to evolve. The procedure for amendment, the safeguards provided, and the method of appeal by the licensee and others with an interest in the matter may be set out in the sector law, or if not, should be stated in the licence itself. At the time of initial award, a minimum period may be set (say, three years) in which the licence cannot be changed except with the consent of the licensee.

**Box 4-2**

**Typical Terms and Provisions for an Operating Licence**

**Terms of licence**

- Duration and terms of revocation
- Fees

**Rights granted to licensee**

- Services licensee is authorised to provide
- Rights to lay cables, dig roads, etc.
- Rights to international representation, etc.

**Duties imposed on licensee**

- Public service obligations
- Investment obligations
- Obligations to serve specific customer groups or areas (for example, disabled, rural areas)
- Quality-of-service targets (for example, waiting time for installation of lines, fault clearance times, success rates for calls)
- Tariff controls
- Treatment of customers (for example, disconnection, response to complaints, confidentiality of customer information)
- Competitive behaviour and relationship with other licensees (for example, prohibition on cross-subsidies to competitive services, requirement to provide nondiscriminatory access to network, requirement to keep separate accounts for separate activities)
- Obligation to publish information (for example, tariffs)

**Interconnection provisions**

- Obligation to provide interconnection to other licensees
- Rights to interconnect with other licensees
- Terms of interconnection

## **Principles of Interconnection Arrangements**

Arrangements for interconnection between public networks and services have political, commercial, and technical aspects. The relative importance of these varies according to the phase of reform and the structure of the sector. A monopolist can, and usually does, operate with quite simple rules for sharing revenues, within telephony, between local, long-distance, and international services. In a multi-operator environment, divergence of commercial interests means that regulatory intervention is normally required to determine revenue shares in accordance with overall policy aims. Accordingly, interconnection arrangements and even the initial charges to be made for carrying interconnected calls should be set out in the basic regulatory document, for example, in an annex to the incumbent's licence.

Regulatory intervention in interconnection arrangements thereafter is usually concerned with two issues:

1. To revise the payments per interconnected call
2. To offset the effects of distortions in tariffs charged to users in relation to costs of service

The arrangements adopted can be adapted to assist in meeting sector policy objectives. For example, when the second national operator was licensed in Australia, the payment per interconnected call was set at a low level to provide an incentive for the market entrant. This initial payment is now under review and will probably be revised to take into account any remaining cross-subsidies that Telstra is obliged to maintain.<sup>28</sup> Similarly, the initial interconnection arrangements for Mercury in the United Kingdom have been subsequently subject to revision, preparatory to the entry of more competitive networks. In Finland, where the operator providing long-distance and international services, Telecom Finland, interconnects forty-nine local telephone companies, interconnection arrangements form part of a tradition of cooperation on technical, operational, and financial matters. These arrangements do not incorporate a formal cross-subsidy policy (there are no charges between operators for local delivery of long-distance calls) but, in practice, many of the smaller companies have been helped to become established and to develop.<sup>29</sup> As these examples illustrate, the main policy significance of interconnection arrangements is their role in facilitating the establishment and maintenance of a sector structure and a tariff policy desired for other reasons.

The principles to be applied in working out interconnection charges are essentially the same as for tariff policies. Basing interconnection payments on costs is, undoubtedly, the normal approach, although there is a great deal of argument about which cost concept is appropriate, which costs should be counted, and how to measure them. As regards the cost concept, to promote an efficient allocation of resources in the sector and to foster commercial operations, economic theory suggests that charges should be set equal to the incremental cost of expanding output. That is, the optimum basis for determining interconnection charges is the additional costs borne by a network operator that can be directly attributed to establishing and operating interconnection. The direct cost would include the cost of additional capital investment, return on capital assets employed, and operational costs.

In SSA countries, however, the main priority is to modernise the network and satisfy customer demand for telecommunications at a time of economic difficulty. For the same reasons as with tariffs, accurately measuring attributable costs may well not be possible.

The practical difficulties with cost measurement may well lead regulatory authorities to tariff-based charges as a second-best solution. The principal advantage of such an arrangement is that it creates incentives for restructuring of the sector and efficient operation of services. Tariff-based interconnection arrangements are the norm in several countries, most commonly for interconnection of cellular radio networks, and there are good reasons for such an arrangement:

- Tariffs provide a clear and public reference point.
- The incumbent has a further incentive to align tariffs with costs, thus promoting economic efficiency.
- The administrative burden of setting terms and the scope for disputes are reduced because tariffs are already subject to regulatory controls.

## Endnotes

1. See the Country Studies in Volume 2 for detailed evidence to support the conclusions presented here.
2. 1992 figures given in *World Telecommunication Development Report* and *African Telecommunication Indicators*, both published by ITU, 1994.
3. In Zambia, government ownership of ZAMTEL is exercised through a holding company, ZIMCO.
4. Congo, Côte d'Ivoire, Ghana, Guinea, South Africa, Uganda.
5. For example, the government of Germany has announced that Deutsche Telekom will be privatised in 1996 with a universal service obligation. Entry into switched voice telephony will be authorised at some point between the date of the privatisation and the EU deadline.
6. The performance contract is termed *contrat du plan* in France.
7. For a discussion of the economics of "cream skimming," see Peter L. Smith and Gregory Staple, "Telecommunications Sector Reform in Asia: Towards a New Pragmatism," World Bank Discussion Paper 232, 1994.
8. Of course, there is substantial cross-subsidy in SSA countries, especially between international and domestic services. But the patterns of cross-subsidy found in practice do not serve a significant developmental purpose.
9. An annual growth rate of 15.5 percent in the number of connected main telephone lines was stipulated; part of the proceeds of privatisation were allocated to a fund to finance network development in rural areas.
10. This partly explains why, in some countries, it is apparently possible for a telecommunications company to be prepared for privatisation without being separated from posts (Singapore Telecom, Netherlands PTT).
11. See, for example, John R. Nellis, "Contract Plans and Public Enterprise Performance," World Bank Discussion Paper 48, 1989. The main problems identified in SSA countries are the failure of governments to meet their financial commitments to the enterprises, the inability to make use of performance contracts as an instrument of restructuring, and the lack of remedy for incompetent management.
12. In this respect, telecommunications privatisations in SSA countries are likely to take a radically different shape from those in Latin American and CEE countries.
13. For example, the European Community has proposed linking the rate of tariff rebalancing for residential customers to the rate of real price reduction so that the average user is left no worse off.
14. See the argument in Milton Mueller, "Universal Service in Telephone History: A Reconstruction," *Telecommunications Policy*, July 1993.

15. ITU, "The Missing Link," Report of the Independent International Commission on Worldwide Telecommunications Development, 1985.

16. The provision of service in rural areas is the subject of a separate World Bank study.

17. For a discussion in a specifically U.S. context, see M. A. Einhorn, ed., "Price Caps and Incentive Regulation in Telecommunications," Boston, 1992.

18. As already noted, the government has also offered a second national operating licence. In view of our analysis, it seems unlikely that this option will produce as much developmental benefit as would the privatisation of Uganda Telecom.

19. There are, of course, several examples where stock flotations have been delayed, abandoned, or proved unsuccessful (OTE in Greece, VSNL in India, Sviainvest in Russia). These failures have usually been attributable to the lack of resolution of policy issues or a cyclical downturn in the stock market. In some cases, as with VSNL, mispricing of the stock was also a factor.

20. "Debt or Equity? How Firms in Developing Countries Choose," IFC Discussion Paper 22.

21. AT&T and other operators with links to manufacturers have interests in certain regional projects, such as the optical-fibre systems planned to be laid around Africa.

22. See, in particular, O. E. Williamson, "Transaction-Cost Economics: The Conveyance of Contractual Relations," *Journal of Law and Economics*, vol. 22 (1979), pp. 233-61; V. P. Goldberg, "Regulation and Administered Contracts," *Bell Journal of Economics*, vol. 7, pp. 426-48; or V. P. Goldberg, "Toward an Expanded Economic Theory of Contract," *Journal of Economic Issues*, vol. 10, pp. 45-59.

23. See the report "Regulatory Options," produced as part of this study, for an elaboration of this argument.

24. According to the ITU, corporatisation is the single most widely adopted measure of restructuring taken to date by developing countries. The ITU's survey, however, was insufficiently detailed to be able to distinguish between formal and substantive changes. For example, TCC in Jordan has been corporatised but continues to function effectively as a government department, whereas ONPT in Morocco (under the influence of the French model) is formally still a government department but has much more of a commercial character. We emphasise moving from government financial regulations to those normally applied to private businesses as being the key step.

25. The independence of the FCC is not related to privatisation, but to the structure of federal government in the United States.

26. Independence of the regulator from the operator is of course essential. Note also that regulatory functions may be divided among several bodies, some more independent than others. In such cases, those bodies closer to the national government tend to have final decisionmaking authority. For example, the Office of Telecommunications (OFTEL) in the United Kingdom is a separate department of government, but not an independent agency. In law, as well as in practice, OFTEL is unable to implement policies that differ from those of the Department of Trade and Industry, the sector ministry.



27. France has invented a compromise solution to the lack of independence resulting from regulation within the ministry. This involves the appointment of a senior public figure to the position of principal regulator within the department. In the French case this is a senior judge. Public accountability is also increased through the involvement of consultative committees.

28. The proposed permanent arrangements for interconnection in Australia are also intended to be applied between fixed and cellular mobile networks.

29. See Telecon Ltd., "Finland Case Study Report," Study of Alternative Solutions for the Provision of Telecommunications Services in Developing Countries, November 1992.











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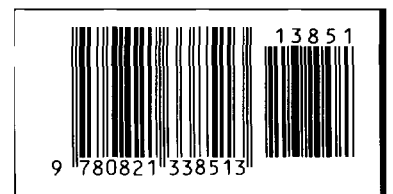
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