



TRANSFORMING TELECOM REFORM FOR DEVELOPMENT¹

Alison Gillwald

gillwald.a@pdm.wits.ac.za

LINK Centre

Graduate School of Public and Development Management

Witwatersrand University, South Africa²

<http://link.wits.ac.za>

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² Research ICT Africa! seeks to strengthening institutional capacity for research, analysis and debate in African countries. See www.researchICTAfrica.net

Abstract

Transforming Telecom Reform for Development, locates telecommunications reform at the centre of ICT and development but critiques Bretton Woods reform models which have tended to emphasise privatisation at the expense of other reform mechanisms and particularly effective regulation. The imperfect nature of developing country markets and inequities that exist require strategic regulation to enable innovative service provision, especially to under-serviced areas and fair competitive markets to promote the viability of new entrants. Simply removing all market entry restrictions, however, is likely to place an even more onerous burden on already struggling regulators for greater access regulation and is unlikely to contribute universal access and other developmental goals. A fundamental restructuring of the market is needed to remove the anti-competitive incentives that exist in the vertically integrated market structures that have generally accompanied privatisation in developing countries. This is likely to reduce the need for negative anti-competitive regulation, freeing up regulatory resources for more strategic regulation towards achieving national developmental objectives.

1. Introduction

The ideas in this paper reflect the concerns that led to the establishment of a nascent African ICT research network with International Development Research Centre (IDRC) support earlier this year. At present, research in the field of ICT and development in Africa is limited, fragmented and typically undertaken as isolated and disconnected projects. Most of the understanding of the information age comes from the theory and experiences gained in the developed world. Africa produces little in the way of independent, primary research feeding into the ICT policy and regulatory processes. Unlike other parts of the world committed to participatory policy formulation processes, there are few independent local agencies contributing to public policy processes in the broader public interest on the basis of rigorous applied research. Strengthening African institutional capacity for research, analysis and debate in developing countries is an indispensable element in the construction of knowledge societies. In the absence of innovative organic policies, international models become the default development strategies for developing countries, with serious consequences for developing countries as this paper demonstrates.

Though it has been argued that trying to reform African national policies is futile or will take too long, without the development of informed, integrated and appropriate national policies, the role that ICT can play in development will be limited.

This is evident in the initiatives that have deployed ICTs to alleviate poverty to date. In most cases these have been small-scale projects or pilots that are often not scalable or sustainable and have often only been made possible by donor intervention, whether to source infrastructure or to cover the high usage costs. Often successfully demonstrating the applicability of ICTs to development, the outcomes of these endeavours tend to be localised and at best can only be ameliorative.

Connectivity projects in particular, that are made possible by policy exemptions to utilise a technology that makes connectivity possible for individual institutions or development projects do not produce the economies of scale that wider deployment in a more enabling policy environment would. While the connecting of a project or institution that would not have been connected otherwise must be viewed as a positive development, such initiatives need to acknowledge that it is dealing with symptoms rather than causes. Where such projects are conducted within the context of broader efforts to deal with the more fundamental determinants of circumstances, such as restrictive policy, they are more likely to produce positive developmental outcomes in the longer term.

National and multilateral projects, on the other hand, have been preoccupied with large-scale infrastructure expansion, with little consideration for what will happen at the end of the line, and have generally not been integrated into broader developmental policies. The arising argument however, that access isn't useful without applications and content, while of course correct, can just as easily be turned around. Applications and content aren't very useful without access either.

It is for this reason that the central public policy challenge facing African decision-makers responsible for information communication technology (ICT) remains ensuring affordable access to services. This has to be achieved however, while creating the conditions for the development of the information infrastructure - which includes the seamless integration of networks, services and content - needed to operate a modern economy and participate effectively in global developments. While there may well be tensions between these objectives at various points in the development of a modern ICT sector, they should not be viewed as contradictory as they often have been. Without an integrated strategy to achieve both developmental and growth objectives, neither will be achieved. The opportunity costs of not developing an appropriate policy and regulatory framework are high and are globally evidenced in what has been termed the digital divide.

Countries that are unable to take up the challenges posed by global technological and economic trends are increasingly marginalised, not only from the global network economy, but also in their ability to deliver on their own developmental objectives.

2. International reform agenda

It was an awareness of this new reality that drove the telecommunications reform process that has swept the globe over the last three decades. Reform mechanisms of privatisation, competition, and independent regulation, often only assessed in research resourced OECD countries, have been hailed as having resulted in price decreases, improvement in service quality, faster roll-out of infrastructure and new technology, and more choice for consumers. On the basis of this telecom reform has been sold to African countries as a mechanism to transform their debilitated communication infrastructures and integrate their countries into the global economy. The outcomes of the first phases of telecom reform in Africa have had far more mixed outcomes, however, and in some cases have had a negative impact both on affordable access and sector development.

There is considerable evidence to suggest that a broadly competitive macro policy environment is an important contributing factor in increasing the provision of ICT infrastructure, maximising its impact and in generally reducing what has become known as the digital divide. The international reform project has been very unevenly and expediently applied in Africa, however, usually focusing on privatisation at the expense of other reform drivers.

The reform model that emerged for developing countries from multilateral agencies in fact consisted of three integrated components. These included the usually partial, privatisation of the incumbent fixed line operator through the extension of the monopoly; the introduction of network competition in the mobile segment of the market and service based competition in the value-added network services (VANS) and Internet Service Provider (ISP) market; and finally the establishment of a sector regulator to implement policy; create a transparent and certain regulatory environment for investors and consumers and contribute to building a stable and well-functioning market.

In practice the reform agenda prioritised privatisation, which was perceived as the mechanism that would most rapidly redress the dismal outcomes of grossly inefficient state provision of telecommunications services which had left Africa at the start of the reform process in the nineties with a continental teledensity of around 1%. This meant the critical role of introducing competition, into what are often perceived by decision-makers as the elite components of the market, was often sidelined.

More importantly, while inducing the opening up of markets to foreign trade and investment, insufficient emphasis has been placed on the need for strong institutional arrangements to deal effectively either with the regulation of the private monopoly in a partially competitive market and to counter market failure likely to arise in such imperfect markets. This has probably been the most undermining factor of reform efforts in developing countries.

While effective regulation has been a cornerstone of competitive markets in many of the developed countries calling for open access to developing country markets, it has not sufficiently accompanied the introduction of competition policies, often expediently implemented by developing countries to offset debt or secure aid. Privatisation, without the regulatory capacity or political will to manage a private monopoly or the competitive framework, can be entirely counterproductive to the achievement of the very goals intended by liberalisation.

3. Privatisation

Common then to those countries where the gains of reform are not evident, appears to be the privatisation of the incumbent through an extension of the fixed line monopoly. This was the funding model proposed by international financing agencies in the nineties order to attract investment in the light of the generally poor state of infrastructure and the minimal customer base of most developing countries operators. The rationale for this was that often indebted monopolies needed the injection of capital and skills and the technology transfer to meet the challenges of expanding and modernising the usually minimal and outmoded network and preparing for competition by introducing cost efficiencies into the company.

While formally concerned with policies to achieve affordable access, these models in themselves represented a compromise between the market access desires of multilateral agencies and the reluctance of developing countries to lose a major source of income generation, ineffectual as it might have been in providing public services. As they have played out in licence negotiations they have tended to focus the optimisation of the value of the state asset in exchange for increased rights and opportunities to generate revenues by the privatised entity, rather than on broader policy objectives of affordable access and sector development.

This has often resulted in incumbents securing the rights to the other areas of restricted competition, either mobile, VANS or ISPs. Very often to further protect the revenues of the privatised incumbent - ostensibly to roll out services - players in the competitive market segments have also been required to acquire their facilities from the incumbent.

The resulting vertically integrated dominant operator provides the basis for what has become the standard market structure that has accompanied the opening up of markets. It is also at the core of the failure of the reform project in developing countries. The anti-competitive incentives that arise in a market structured around a vertically integrated national company, with a monopoly on its upstream activities but which competes downstream against rival firms are impossible to counter without constant checking and adjusting of the integrated entity's behaviour by the regulator. This problem is compounded where rival firms are required to acquire their non-competitive facilities from it in order to operate as required in many developing countries. Similar structural forces come into play for other networks having to interconnect in order for their customers to access the historically larger number of subscribers on the incumbent's network. This creates anti-competitive incentives for the incumbent to deny access to its network to rival firms, whether through delays or pricing strategies.

Historically, the regulatory response to this market structure, which tends to arise wherever a former public utility enters into a competitive market, is access regulation. At its broadest this can include retail tariff regulation, either through a Price Cap Model or through a rate of return regime, to ensure affordable access to the service by end-users. On the wholesale side this type of regulation focuses on ensuring access through the setting of wholesale tariffs for facilities and compelling cost based interconnection. All of these regulatory mechanisms depend on relatively complex costing models that are particularly onerous to enforce, especially when the former public utility's accounts are not clearly separated and there is not a sense of what constitutes real costs. Even once costs are realistically allocated there are inherent information asymmetries that disadvantage the regulator, as the incumbent operator will always have better knowledge of its own costs than does the regulator.

This resource intensive regulatory approach arising from this market design places an enormous regulatory burden on any country seeking to ensure affordable access through the creation of a fair competitive environment and requires experienced and skilled regulatory staff to apply the access regulation regime effectively. Countries with far more experience in regulation, and with far greater skills and finances than most African countries, continue to struggle to implement access regulation successfully. Expecting newly established, under-resourced regulators, often established in the absence of political will, to fulfil this task would appear to be setting them up for failure - and regulatory failure in such highly interventionist regime, means system failure.

The primary mechanism then of sector reform in many developing countries - privatisation of the fixed line incumbent through the extension of its monopoly - has had a demonstrably negative impact both on affordable access and on market development in some countries. South Africa is a case in point. The privatised incumbent has indeed become far more efficient, which has allowed it to extract monopoly profits, now repatriated, unconstrained either by competition or effective regulation of the monopoly. In South Africa the partially privatised and foreign controlled incumbent, Telkom, has retrenched over 20 000 workers, cut off two million people who could not afford to pay for services, and benefited from over 160% increase in tariffs in the last five years, way beyond what was anticipated by rate rebalancing. Far from privatisation resulting in the doubling of the network during the period of exclusivity as anticipated through the licence conditions, with the private monopoly's focus on the corporate market, there are probably fewer residential lines now than in 1997 when Telkom was privatised. South Africa is now one of the few countries in the world with a declining number of fixed lines subscribers.³

During the same period mobile services have gone much further in expanding universal service in South Africa; with the number of mobile subscribers at 14.5 million standing at almost triple that of the fixed network. Most commentators now agree that the means by which voice telephony universality will be achieved in South Africa and throughout the rest of Africa is through mobile services. However, the potential of mobile to close the gap on basic voice communications should not happen at the expense of the continued expansion of the more affordable fixed network, without which the digital divide will increase between those with access to voice communications only and those who are able to participate in the economy and society due to their access to enhanced services.⁴

4. Regulatory challenges

It is for this reason that an environment conducive to investment needs to be created. Reducing regulatory risk is a critical aspect of this as is demonstrating that investors will receive a decent return on investment, particularly at the time that they are required to reinvest in the expansion of the network. Stimulating investment in network roll-out, particularly after the heady dot.com days of the nineties and the subsequent recession in the telecom industry, may be one of the greatest challenges facing the African continent. So, while independent regulation may be a necessary condition therefore of policy success in order to create the transparency, certainty required for sector growth, it may not be a sufficient condition. In order to deal with the extraordinary developmental challenges facing Africa regulators will need in addition to regulate innovatively, strategically and appropriately to the very different conditions that exist in African markets.

³ Gillwald, A and Kane, S (2003) South African Telecommunications Sector Performance Review, LINK Centre Public Policy Research Paper no. 5, University of the Witwatersrand, at <http://link.wits.ac.za/research>

⁴ See Melody, WH (2001) Preparing the Information Infrastructure for the Network Economy, World Telecommunications Markets: International Handbook of Telecommunications Economics, Vol. III for fuller argument on the importance of fixed line expansion to avoid increasing the digital divide.

A case in point is precisely that of price regulation. One of the most critical issues in regulating a developing country market with a dominant incumbent as is usually the case, is getting services cost based, if access objectives are to be achieved. A complex political and economic process in any regime, the regulatory rationale for price regulation is quite different in a developed and developing economy and uncritically adopting the rationale of developed markets may not contribute to achieving national objectives. While regulation in developed countries tends to focus primarily on the consumer and the keeping of tariffs as low as possible, to fulfil the primary national objective in most developing countries, the rationale for regulation may well be on securing access for those citizens who do not receive services at all, but compelling those that already have services to pay a cost based charge that includes getting services out to those who do not. In most developing countries those who already receive service tend to represent a small and usually influential elite, usually who have been the beneficiaries of cross-subsidised services. Without regulatory clarity, the effect of their resistance to cost based price increases could result in reduced infrastructure expansion either due to investment not being attracted in the first instance because of the inability of investors to receive a reasonable rate of return or to telephone companies already invested in the country not being able to generate sufficient revenues to invest in network expansion.⁵

Of course while charges for access services remain high, ICT diffusion will be constrained. Currently, between 70 and 80% of all ISP and VANS costs are incurred from the obligatory acquisition of the facilities required for them to operate. For this reason consumer tariffs and interconnection charges must be brought in line with costs. This is a key to the efficient allocation of resources within the market and for creating the conditions for fair competition.

When this is applied in a developing country context with a history of a single provider it is also likely to challenge certain practices and indeed myths about costs and where they are incurred. Traditionally, largely due to monopoly provision and the sender and receiver being on the same network, costs have failed to recognise both origination costs and termination costs. However, as markets have been opened up and calling and access charges have become more cost based, the reality of the differential costs in the provision of services has become apparent. An interconnection regime that recognises the asymmetrical cost of terminating calls in high-density, low-cost urban areas and low-density, high-cost rural areas, together with cost effective new technologies can make rural services viable. In most African countries however, these innovative mechanisms of reaching rural areas cannot be introduced due to the existence of state or private monopolies on basic services.

5. Transforming African telecommunications

Clearly an entirely new approach to reforming the telecommunications sector in many developing countries is needed. There is now considerable developing country evidence

⁵For more detailed argument of this positions see Samarajiva,R (2001) Making Regulation Pro-Poor at www.itu.int/TELECOM on 19 July 2002

that demand for communications services can be innovatively met through regulated market forces. The lesson from the exponential growth of relatively high cost GSM mobile telecommunications in Africa is that with flexible access, billing and payment mechanisms communication needs of low income subscribers can be met. The access opportunities created through the licensing of small operators using cost effective wireless technologies to provide services to remote areas of developing countries that have not been regarded as serviceable and profitable by national telecos, provides another example.

The rationale for protected monopolies or duopolies has been undermined by new, low cost technologies and applications and invariably ineffective regulation of the private monopoly. The conditions that have accompanied privatisations have prevented the deployment of cost effective access technologies and applications, had a chilling effect on the expansion of the competitive segments on the industry and caused a drag on the economy more generally.

While lifting these constraints on the market through increased liberalisation of the market seems an obvious solution and while some pent up demand would certainly be met by doing so, this is unlikely to achieve competitive and developmental objectives without effective regulation.

Without a change to the vertically integrated market structure described above this would result in an increased regulatory burden on already overstretched and incapacitated regulators. As described earlier, where the market structure provides the incumbent with anti-competitive incentives the major function of the regulator becomes the constant monitoring and adjustment of the anti-competitive behaviour of the incumbent in relation to its competitors. Simply increasing the number of competitors requires increased access regulation, which most developing countries are already unable to provide with a limited number of competitors in the market. It also fails to deal with the inherent information asymmetries faced by the regulator.

A more fundamental solution lies in the structural separation of the vertically integrated entity. This creates entirely different incentive. It also makes it far easier to set tariffs for non-competitive essential facilities due to the separation of the component parts and therefore the accounts. With a tariffed fee structure sufficiently above cost, and no business unit to protect in the downstream market, an incentive is created for the network operators to encourage as much access to the network as possible at the set price.

While structural separation can remove the efficiencies of scope and scale that accompany integrated firms, these efficiencies very often do not exist in monopoly operators and even if they do this needs to be weighed against the total cost to the industry of the resource intensive regulatory required to enable fair competition in the competitive segments of the market. This will allow for the more efficient allocation of resources in the market that are likely to drive down costs and drive up quality of service.

A market structure and regulatory framework of this kind should create the conditions for the bulk of the demand for communication services to be met through market mechanisms. This will relieve the demand on state subsidies and the need for public

provisioning for the majority of the population, which no nation can afford. This will allow transparent subsidies or public access points, to be targeted at those who most need them, rather than applied, where they do exist, on the current scattergun basis.

Ideally this regulated market strategy could be accompanied by the innovative deployment of universal access levies. These should be used to stimulate investment in areas that remain unserved under the reformed market structure. This could be done through independent operators or rural networks or co-operatives. Evidence from other parts of the world suggest that these are more likely to succeed if they are supported by competitively allocated state funding mechanism, a flexible low transaction costs regulatory regime, asymmetrical interconnection agreements and a technology neutral licence.

Policies and strategies of this kind are more likely to create the conditions conducive to the development of an information infrastructure needed to develop a modern economy and provide affordable access to it by the majority of the population.