

Research Article

A Closing Window of Opportunity: Under-Serviced Area Licensing in South Africa¹

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Abstract

Technological innovation and the decreasing costs of wireless and other technologies, combined with progressive policy and regulatory environments, have resulted in the provision of telecommunication services in remote areas thought unserviceable by incumbent telcos in Latin America, Central Europe, and Asia. In line with the increasing number of success stories in other parts of the world, the South African government, as part of the policy of “managed liberalization” of the telecommunications sector, lifted the monopoly provision of telephone services in under-serviced areas by permitting smaller-scale entrants into the telecommunications market.

Emerging from the second round of telecommunications policy reform in 2001, following the initial reforms to the sector in 1996, it was anticipated that these special operators would be licensed in 2002. Although licenses were finally granted following several licensing delays in June 2004 to seven applicants (three conditionally) from the ten areas demarcated in the first round, further delays in the final issuing of these licenses meant these licensees were only able to become operational in 2005.

With the Ministry of Communications’ latest policy directives on further liberalization of the market, which allows for some of the services previously reserved for Under-Serviced Area Licensees (USALs) to be more widely available from February 2005, just prior to the underserved area licensees coming on stream, the window of opportunity for these small-scale new entrants may have closed.

This paper assesses the degree to which policy and regulatory conditions promote the viability of these operators and facilitate their evolution as business and developmental models. Drawing on international experience, the policy and regulatory framework for these licenses is assessed.² The paper focuses specifically on other jurisdictions where similar regimes have been introduced as part of a national policy rather than on the wide range of pilot projects deploying innovative technologies that may provide low-cost solutions

1. This paper arises from a project commissioned by the Canadian International Development Research Centre (IDRC) for the South African regulator, the Independent Communications Authority of South Africa (ICASA), to determine the policy, regulatory, and financial environment most conducive to the sustainability of Under-Serviced Area Licensees in South Africa. It draws on the insights of Prof. Rohan Samarajiva of LIRNE.NET, who was the international advisor. I acknowledge particularly his emphasis on securing the correct cost-based asymmetrical interconnection regime in order to build a viable business case for rural operators. I also wish to express my appreciation for the constructive comments from Prof. Bill Melody, Heloise Emdon, and Sean Kane, though they should not be held responsible for any of the views or possible errors in the paper.

2. The methodological approach to the paper is therefore to some degree reflective, in the Giddens sense, and reflects participation in and observation of the process. Views, however, have been substantiated through triangulation methods, where possible, through interviews with parties with different interests: the Department of Communication, ICASA, USAL licensees, and national network operators.

but which are not scaled up or formally implemented.³ The key success factors in these jurisdictions are weighed in relation to the sustainability of the under-serviced area operators (often referred to as regional or rural operators in other jurisdictions) under the conditions that exist in South Africa. Finally, it provides some lessons for other developing countries wishing to consider the South African experience.

Policy and Regulatory Models Used in other Parts of the World to Address Rural Access

The failure of incumbent monopolies in developing countries to extend telecommunications services to the majority of their populations living in uneconomic areas compelled policy makers to explore alternative ways of meeting national communications needs. Political awareness of the development imperatives of building effective information infrastructures—and their centrality to integrating national economies effectively into the global economy—drove a range of different countries to review their public utility approach to telecommunications delivery. With notions of telecommunications as a natural monopoly undermined by cost-effective technologies being rapidly deployed in liberalizing environments, new approaches to the funding and implementation of universal access were implemented with differing degrees of success.

Competitive Subsidies

During the 1990s some Latin American countries facing the global challenge of cost-effectively meeting the pent up demand for telephones decided, in the absence of successful roll out into rural areas despite liberalization of their markets, to provide government subsidies to stimulate telephone access in remote rural areas.

In Chile, licenses were granted to provide a minimum number of payphones to the highly mountainous regions of the country. Despite considerable gains in the number of connections following the liberalization of the sector in the early 1990s, the

rural areas remained underserved due to the high cost of reaching remote areas, the low income levels, and the failure of operating companies to consider innovative ways of servicing these areas with new technologies or payment packages.

In 1994, the government established a fund to create incentives for private investment in unserved rural areas. The telecommunications development fund was set up for five years only with the express purpose of providing public access to Chileans living in areas without public access to telephony. The fund was financed through the national budget and was administered by a council, chaired by the telecommunications minister, who awarded subsidies against an annual program of projects eligible for funding on the basis of competitive bidding (Wellenius 1997). The sector regulator served as the Council's secretariat. It identified the locations requiring public access and assessed their commercial viability. Projects were assessed in terms of their social net present value (NPV). Where projects appeared commercially viable, the private sector was informed so it could to apply for licenses. Commercially unviable projects were "ranked by NPV per unit of subsidy need to make them viable and by other factors" (1997).

Forty-six projects covering 1,285 locations throughout the country, with subsidies totaling US \$4.3 million, were launched in 1995 and ultimately provided service to about a third of the population (half million people) without access. Rollout of services was encouraged by the subsidy (which averaged around US\$3,500) being paid for only when the facilities had been built. This program resulted in the decrease of Chile's population without access to basic voice communications from 15% to 1% in 2002 (Wellenius 2002:29). According to telecom analyst Bjorn Wellenius: "Success was due largely to extensive reliance on market forces to determine and allocate subsidies, minimal regulatory intervention, simple and relatively expeditious processing and effective government leadership."⁴

Although Peru began a similar process in 1992 with the establishment of a dedicated telecommuni-

3. See Best (2003), especially the section on the Sustainable Access to Rural India (SARI) project (Box 7.5 on page 115). See also the Council for Scientific Research in South Africa, *First Inch, First Mile (FIFM) project*, which explores a range of alternative technologies for more affordable rural access including Powerline and WiMax. Accessed at www.fmf.org.za.

4. For a detailed description of the Chilean experience see Wellenius (2001).

cation fund (Fondo de Inversión en Telecomunicaciones [Fitel]), and the regulator (Organismo Supervisor de la Inversión Privada and Telecomunicaciones [Osiptel]) was ready to call for a tender by 1996, the process only got underway in 2001.

The goal of Fitel was to ensure the provision of pay phone service in 5,000 rural towns and public access to the Internet in all 554 district capitals within 10 years (Cannock 2001).⁵ Fitel was funded through a 1% levy on the telecom operators' gross operating revenues. While legally distinct from the regulator, Osiptel provides technical and administrative services to Fitel and approves policies and projects. Osiptel was responsible for identifying the locations requiring services and tendering and monitoring performance (Cannock 2001).

The decision was taken to divide the country into six regions, each with more than 700 towns, and then to hold two tenders. The winning bid was to receive a 20-year non-exclusive concession, which would require them to install one public payphone in each targeted rural location and one point of public Internet access in each district capital. Licensees would be required to provide public service over the entire 20 years despite only receiving subsidy payment for the first 5 years. They would, however, be permitted to use their facilities to provide additional services to individual subscribers, though Osiptel would regulate retail prices for rural services and interconnection (Cannock 2001).

Payment of subsidies is tied to project implementation and service quality with partial payment at the beginning of the project, a second payment once facilities are installed, and the remaining amount in installments over the five-year period. This allows the regulator to penalize operators for failure to meet operational deadlines or for payphone or system outages (Cannock 2001).

Lack of political will and institutional infighting stalled a very promising process but, by March 2001, three competitive tenders had been conducted for six projects covering all 5,000 rural towns to be connected by 2003. Despite these delays the first pilot project revealed some interesting outcomes. First, "the winning bid requested a subsidy 41% lower than Osiptel had estimated and 74% lower than a previous offer from the incumbent operator"

(Cannock 2001) Traffic also exceeded Osiptel's forecasts by 32% in the first year. The pilot project mobilized private investment at a rate of US\$22 per inhabitant while requiring only a US\$11 subsidy per inhabitant (Cannock 2001).

The project was not without operational problems, however. Despite meeting deadlines for initiating services in nearly all the 200 localities, the operator failed to meet service reliability targets resulting in fines equivalent to over 1½ month's revenue. Failed grade of service targets also resulted in delays in the first annual subsidy payment until problems were rectified, which were equivalent to nearly two month's revenue (Cannock 2001).

Similar attempts in Kenya have also fallen on fallow ground. As part of a rural access strategy, the government announced its intention to establish operators to set up and operate networks in the rural areas outside of Nairobi. In February 2000 tenders for eight licenses were called for with each license covering a specified region where the only other fixed line competitor was Telkom Kenya.⁶

The 15-year initial licenses were renewable for another 10 years upon their expiration, and are for the provision of local exchange basic voice services, inter-exchange basic voice services, and regional long-distance basic voice services. The three winning bid committed to invest up to US\$350 million to provide 299,000 lines or build a fixed line/wireless network matching the size of Telkom's network outside Nairobi within three years (Mureithi in Kane 2002:44). "This investment in new networks in rural Kenya is desperately needed, as with the exclusion of the country's cities, 80% of Kenya's population (≈23 million) is currently being served by only 120,000 landlines. In addition to the infrastructure investment, the winning bidders agreed to pay the government an upfront license fee of US\$37 million. However, in the ensuing two years none of the RTOs [regional telecommunications operators] have actually paid its license fee or begun to build out its network." (Kane 2002:38)

Kane (2002) cites both exogenous and endogenous reasons for RTOs not taking up their licenses. While the international telecom meltdown undoubtedly impacted negatively on decisions taken to in-

5. For case study of Peru, see Cannock (2001).

6. For a full review of this process see Kane (2002).

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vest millions of dollars in infrastructure and license fees when the market was far more buoyant (as in South Africa), the telecommunications market conditions during the licensing process had changed dramatically within Kenya. "At the time of the license tendering process the only competition for potential operators in rural areas came from the outdated Telkom network. At that time SafariCom was Kenya's only mobile phone operator and they only served 20,000 customers in and around Nairobi. Under these circumstances the market for the RTOs looked promising. However, when the time came for the winning bidders to take up their licenses the boom in the mobile market had completely changed the market dynamics" (Mureithi in Kane 2002:45).

In addition the licenses did not allow operators to interconnect calls directly among regions, terminate calls to Nairobi, or place international calls. All of these services had to be offered through an interconnection with the incumbent's infrastructure (Kane 2002).

Although the head of Telecommunications Development at the Communications Commission of Kenya (CCK) stated that the issues of fees and interconnection have been resolved and that CCK officials were therefore optimistic that the RTOs would take up their licenses shortly, this has not occurred leaving the rural areas unserved either by the incumbent or the RTOs.

Telecommunications Cooperatives

Telecommunications cooperatives were another mechanism to extend access to rural communities in several parts of the world. In the United States and Scandinavia, co-ops were major contributors to the high levels of universal services enjoyed in these countries (Melody 2001). More recently in Bolivia, the 15 telecom cooperatives owned by local municipalities, with a monopoly on local services in their geographic territories, provide the majority of local service in both urban and rural areas. Each subscriber pays an installation fee to receive the service, which translates into equity in the company and entitles the subscriber to one vote, irrespective of the number of lines they have installed (NTCA and James 2001).

Cooperatives have also contributed to the improved teledensity figures in Poland, which sat at about 3% in rural areas in the 1990s. Following leg-

islation that allowed independent telephone providers to compete with the state-owned monopoly in the early 1990s, a number of cooperatives were successfully established to provide services to rural villages. Financing was secured from municipal governments, Polish banks, and international loan agencies. In some instances, loan guarantees were secured from equipment suppliers (NTCA and James 2001:4).

Revenues from tolls and special services enable the cooperatives to fulfil loan payments, hire office and maintenance staff and begin network build-out and subsequent upgrades. . . . Today, these systems service some 40,000 homes and businesses with modern, state-of-the-art digital technology including Internet. The resultant economic growth in these communities has been impressive. For example, local incomes rose some 30% in the first four years of some of the cooperatives' service territories and some 300 cottage industries reported opening on cooperatives' service area. . . . Perhaps most importantly, the success of building these locally owned and operated telecommunications systems energized the communities to undertake other self-help projects, such as financing and building sewage treatment plants and natural gas pipelines (5).

The extensive experience of cooperatives indicates, however, that a level of financial resources to support the co-op system and some existing or potential economic base are necessary conditions for the sustainability of cooperatives.

The U.S.-based National Telecommunications Cooperative Association (NTCA) has identified the following as necessary for an enabling environment for cooperatives (NTCA and James 2001:6):

- National policy in support of locally-owned telecommunications operators;
- A regulatory framework that supports interconnect tariff structures between local and national operators;
- Access to funding, and the establishment of institutional structures that can provide favorable loans for small operators;
- Affordability of service provision to consumers; and
- Institutional support in areas such as technical support, lobbying, training, and financial management.

The result of such conditions prevailing in the United States was the delivery, to large parts of rural America, of telecommunication services not provided by the large private telephone monopolies. Critical to the success of the cooperatives were the loans and technical assistance they received from the Rural Electrification Administration (REA) as part of a supportive national policy.

Although the NTCA model was initially moot in South Africa, final applications for licenses moved to more traditional commercial models. With the undermining of their business cases, and with offers of support from donor and development agencies, some USAL licensees are reconsidering this model with foreign support (Interview #8 2004).⁷

Build–Operate–Transfer

Another successful model used to leverage private investment into public infrastructure, used in Ghana, the Philippines, Thailand, and Indonesia is Build–Operate–Transfer (BOT). An investor builds out the network and accrues the revenues for a fixed period of time before transferring ownership back to the government or local operator. In some instances, foreign strategic investors partner with local operators. Very often, the license requires the installation of a certain number of phones within a particular period or to serve a targeted area within a specific period (see ITU 1998).

Where BOT models have been successful, emphasis has been placed, as in the other models, on the need for well-structured licenses, regulations, and transparent processes. Several commentators believe that few communities or small, medium and micro enterprises (SMMEs) will have the resources to successfully operate or manage even small networks. An experienced investor may be vital in providing wider access to capital markets, better management skills, and access to latest technology. A BOT model would allow local communities or SMME consortia to gain ownership of the licenses in the long term without having the necessary capital or skill to operate the network.

Lessons Learned

The following lessons arose from these experiences:

- Whatever the model used to access underserved areas, it needs to be supported by a

clear funding model—whether reverse subsidies, low interest loans, or government guarantees.

- Small amounts of state funding can be leveraged to secure local and international investment in support of access programs.
- Competition can be used to allocate limited resources effectively within a simple but clear regulatory framework.
- Areas regarded as unprofitable for traditional large-scale telcos can be efficiently and profitably serviced with the deployment of more cost-effective, new technologies and lower charges.
- Nevertheless, there will always be areas requiring state support for public access to communications services; however, this need for support can be reduced by mainstreaming many areas traditionally not perceived as viable markets.
- While a simple and flexible regulatory environment seems to be the key to successful remote access, it would appear that there are critical areas requiring regulatory intervention.
- Financial assistance seems to be most effective when it is linked to the timely completion of roll-out targets or penalizing non-performance through non-payment.
- In so far as possible, such regulation should be geared at alleviating market failure and challenging traditionally non-cost based pricing, both in tariffs and interconnection.

Role of USALs in South African Telecommunications Sector Reform

Before considering the success factors of mechanisms used in other parts of the world to assess South Africa's underserved area licenses, this section briefly sketches the telecommunications sector in the country in which these developments are taking place.

The first decade of democracy in South Africa saw considerable reform in the telecommunications sector with mixed results. Following a breakdown in negotiations on the issue of telecommunications at

7. All interviewees were promised anonymity. In return, they spoke freely and frankly with the author about sensitive issues.

the multi-party roundtable that set the framework for a peaceful transition to democracy in 1994, the telecommunications reform process only got underway again in 1995 through a highly-consultative policy process that resulted in the 1996 Telecommunications Act. Although the final legislation sought to claw back some powers for the new state, what remained uncontested was the objective of ensuring affordable access, which stood at a paltry 9% of the population for fixed services, and that of accelerating network development through the modernization of the network.

To do this the state had to secure significant capital and management and technological injection. So, as was global reform practice at the time, it privatized its incumbent through the sale of 30% of its stock to a consortium consisting of US-based SBC and Malaysian Telekom. The monopoly was extended for five years during which time it was to double the network to nearly 6 million lines. Telkom South Africa made significant progress toward this target in the first three years of its operation but by 2001, as the rebalancing of tariffs began to bite and local calls escalated, subscribers began to fall. The rise of more accessibly-packaged mobile services and a more efficient collection process at Telkom during the period of the exclusivity resulted in a loss of around 2 million subscribers from the fixed network. Despite the exponential growth of the relatively lightly-regulated mobile market, which stood at around 14 million in 2001 and is close to 20 million 10 years after it was first introduced in 1993, the state tried to introduced a range of measures to ameliorate the negative contribution of the Public Switch Telecommunications Network (PSTN) to the achievement of affordable universal access (Gillwald and Kane 2003:2, 16, 17).

Beside the intention to license a PSTN competitor to Telkom, the 2001 Telecommunications Amendment Act permitted small businesses to apply on invitation by the Minister of Communications for licenses to provide services and facilities to under-served areas. These areas are defined as having teledensities of less than 5%, and the Minister is responsible for determining such areas.

Implementing the Legislative Framework for USALs

Though the Ministry finally granted the first 4⁸ of the initial 10 applications, with another 3 granted conditionally in June 2004, delays by the Independent Communications Authority of South Africa (ICASA) in the issuing these licenses meant that the first licenses become operational in 2005,⁹ following which bids for the second round of licensing in 14 new designated areas were called for by the Ministry. The regulatory challenges arising from the 2001 Amendment have overwhelmed the regulator. It has been engaged with the Ministry in the chaotic joint licensing of the fixed-line competitor to the incumbent, Telkom, and the licensing of the incumbent broadcasting signal distributor, Sentech, to offer multimedia services and an international gateway.¹⁰ With the September 2004 ministerial policy directives¹¹ permitting voice on Value Added Network Services (VANS) the resale of bandwidth by them and Private Telecommunications Networks, and the deregulation of the pay telephone market, the business case of USALs has not only ceased to exist, but the regulator will again be forced to turn its attention to new developments that are underpinned by more powerful financial interests and will be diverted from issuing USAL licenses.

Section 40 of the Telecommunications Amend-

8. Four licenses were granted by the Minister to Bokone Telecomms (Limpopo, Capricorn District); Thinta Thinta Telecoms (KwaZulu-Natal, Ugu District); Kingdom Communications (KZN, Zululand District); and Ilizwe Telecoms (Eastern Cape, O.R. Tambo Municipality). Another three, which ICASA had originally recommended, were licensed subject to correction of certain conditions around their shareholding. They were Uqalo Consortium members from Amatole, Karabotel from North West Province and Bokamoso from Lejweleputswa District of the Free State (Government Gazette; Wiedemann 2003).

9. ICASA resulted from a merger of the Independent Broadcasting Authority (IBA) and the South African Telecommunications Regulatory Authority (SATRA) in 2000.

10. These licenses arose from the passing of the Amendment to the Telecommunications Act in 2001.

11. On September 2, 2004 the Minister of Communications issued a policy announcement (retrieved September 2 from www.doc.gov.za) indicating her intention to put in place several of the measures proposed in this section including lifting the restriction requiring the acquisition of facilities from anyone other than the incumbent fixed-line operator, Telkom (or the Second Network Operator when it became operative), including the self-provisioning of facilities by mobile operators.

ment Act requires USALs to provide telecommunications services, including Voice over Internet Protocol (VoIP), fixed mobile services, and public pay telephones. This had effectively created mini-PSTN operators—the only operators other than the PSTN operators permitted to do voice and VoIP. This has now been extended to VANs operators, without associated obligations, without the USALs even getting into the market. Long distance calls in the USAL areas however, must be transported through the trunk networks of any of the national fixed and mobile operators to the three potential international gateway licensees. The incumbent monopoly fixed-line provider, Telkom, has an international gateway, and the Second fixed-line Network Operator (SNO) will be entitled to operate an international gateway when it is eventually licensed. Sentech has been granted an international carrier license but may not directly connect to the USALs who have to connect through one of the national trunk networks.

On the basis of the 2001 legislative amendments the Minister declared 27 areas under-served, of which the first 10 were to be licensed in 2002 following the end of the incumbent's exclusivity. The process and selection of the license areas have been dogged by controversy as the incumbent operators argue that most of the areas are above 5%.¹² While this is probably the case in light of mobile expansion, the point remains that almost any area of sufficient dimensions identified in South Africa remains significantly under-served and would benefit from additional provisioning. Market research company BMI–Technowledge estimates that the average

teledensity in the USAL areas is about 48% lower than the average for South Africa with growth currently close to stagnant (Smit 2004:44)

Licenses have been granted to service the entire official district in which the very low teledensity areas have been identified. Several of the licenses have relatively large towns inside them and while this may be seen as an advantage most of the big centers are comprehensively serviced by the incumbent fixed and mobile operators. To optimize their viability, attention should have been paid to regional communities of interest including market and government centers, rather than around official borders.

Although the criteria for the identification of under-served regions may not be optimal, even the regions of the country with the highest telecommunication penetration do not have adequate service. There is no risk that any of the identified regions will receive too much service as a result of these licenses.

The 27 USAL areas combined constitute 47% (21 million) of the total population and currently account for about 25% (ZAR15billion) of the total telecom service market (Smit 2004:43). While this confirms that USALs have been given areas with major commercial or government centers, what needs to be remembered is that the economic segments of the market—government, business, and urban residential—are already serviced by Telkom and the mobile operators. Attracting these customers away from at least known, if not preferred services, is unlikely without very innovative pricing or bundling models, which have been eroded by unsupportive

12. The Minister drew on the newly demarcated magisterial districts and the teledensity figures from the 1996 census to identify the areas. Although there has been some outcry by the incumbent fixed and mobile operators in response to the identified districts, which in some instances include several bigger towns and cities, teledensity as historically used by the ITU relates to the number of telephones per hundred of the population within a specified geographical area, usually a country. Such figures always include some areas with higher and lower teledensities. In South Africa for example, while the total teledensity is 12%, the highest in Africa, most telephones are predominantly located in urban, historically white, residential and business areas. Black rural areas continue to have teledensities in line with the rest of rural Africa, or around 1%. Any formal or legally declared area is likely to include some developed urban centers and rural under-served hinterland. The incumbent Telkom has also argued that in some of the designated areas, it has installed lines in excess of the 5% teledensity threshold. This has also led to criticisms of the use of the outdated 1996 census figures and October household survey annual updates. However, despite the national census conducted in 2001, this data was not available to the Minister in early 2002, and the 1996 census remained the latest official figures. Mobile cellular companies have also indicated that some of the areas identified as under-served in terms of the recognized fixed line measure are in fact well-served by mobile telephony. While this may well be so, the problem is that the very nature of mobile telephony makes it difficult to assess exactly which subscribers are where. Phones may have been purchased in one area and are used in another. Even a physical assessment of the location only indicates where that phone is at that point in time, not where it is most consistently utilized. As argued by some of the operators, the Minister would not have been able to use figures supplied by operators without a time-consuming audit of those figures.

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regulatory frameworks, delays to market, and new competitors to the USALs.

So, while on purely technical legal grounds the areas identified could be challenged as having teledensities of more than 5%, there is little doubt that more communication services are needed in all the areas identified. Network expansion through the introduction of competition is generally good for everyone, including incumbents, whose customers have more calling opportunities, thus growing the market. While the introduction of new entrants must lead to some loss in market share, the total business of incumbents is often increased.¹³

The more pertinent question perhaps is that of how the first round of areas was selected and why the number was initially restricted to 8 and, finally, 10 license areas. Several potential players were anticipating that they would be able to select from the list of identified areas that they wished to service in terms of their own business case and on their assessment of the local economy. There is a strong case to be made in favor of this approach with regard to the viability of the operators, especially in the absence initially of a government subsidy. No formal reason for the restricted number of licenses was offered by state officials but it was suggested that not wanting to overburden the regulator with a flood of applications may have been one, or to use the first round of licensing to test the success of the regulatory framework and process before licensing all of the remainder. While there is validity to both these reasons, they assume a relatively complex, fully-competitive licensing process rather than a possibly more simplified process involving a form of class license, with certain thresholds established with which applicants would need to comply, as proposed later in the paper.

Licensing the USALs

Following an initial draft Invitation to Apply (ITA) (RSA 2001a), published for comment in December 2001, several submissions drew attention to the need for a very different licensing process to enable the success of these kinds of small scale operators. The proposed application fee, the licensing fee, the emphasis on the bidding price, and no state funding strategy were all identified as potential pitfalls. This

resulted in a revised ITA (RSA 2002) issued by the Minister in December 2002; while it did not address all these concerns, it did remove the financial offer as a heavily-weighted criterion in the draft ITA. This took care of the concerns that it was inappropriate for this type of license to be used to generate revenue for the state. However, without the introduction of any alternative competitive bidding mechanism, such as a reverse bid to qualify for the belatedly introduced subsidy there was no effective, neutral, competitive mechanism to determine the award.

While 'ownership and control' and 'empowerment' are significant public interest factors, they are not factors that in and of themselves make for viable business operations, yet they constitute 40% of the total evaluation criteria. The *business plan* and *technical plan* together with *experience and credibility*, which reflect the core activities of an operator, make up for an equivalent 40% of the total score. With five points for *Additional Features*—which also refer to business activities such as billing, directory services, consumer protection, and emergency services—it could be argued that the purely business aspects account for 50% at most.

However, the assessment of these criteria tend to be more subjective—assuming that any serious competitor would provide its real plans—and therefore more subject to legal review. There may also be some overlap from an assessment point of view with the critical criterion of *Consumer Benefits* (15%), which refers to service innovation and packaging, tariffs, quality of service, and coverage commitments. This criterion is at the heart of the USAL and, while it greatly improved in the final ITA from the initial 5% proposed in the draft ITA, it should have been rated more highly and as a relatively objective and quantifiable criterion in awarding the licenses.

Less significant to the viability of the licenses and to meeting the policy objectives is the issue of the application fee which remains perplexing from a social point of view. In the final ITA it was increased from R15,000 to R30,000. Although it is appropriate that the regulator deter frivolous applications, individuals and communities in areas with few such opportunities placed their private assets on the line in order to secure these licenses.¹⁴ As a first opportunity for small entrants to enter the market, there has

13. See Wellenius (1997, 2001) for the Chilean experience, and NTCA (2003) for the Polish experience.

14. In an interview with head of the lobby group the Under-Service Area License Group, and ultimately successful li-

been overwhelming interest in the licenses which are required to go to historically-disadvantaged individuals.¹⁵ Only one group in each area will get the license, several other bidders on each license will not. As the applicants are required to come from SMMEs and historically-disadvantaged groups, less easily able to absorb losses in their enterprises, the anticipated forfeiture of their application fee to the state does not seem well considered.

Following several extensions, bids were finally submitted to ICASA at the end of August 2003, following which ICASA held public hearings in each of the districts concerned and recommended seven licenses to the Minister of Communications in May 2004. ICT market research company BMI—Technowledge concluded that emphasis on *ownership and control and empowerment*, which constituted 40% of the total value of the bidding criteria with less attention being placed by ICASA on the actual business cases, could result in the business models of some of the applicants to be unrealistic and unworkable (Smit 2004:21).

Other aspects of the license that may affect the viability of the USALs is the license condition that 0.1% of turnover is to be paid after the first two years of operation in fees while they are still receiving subsidies and have not begun to break even. The other requirement that any 1800MHz and 3G radio spectrum licenses issued are required to pay the frequency spectrum use fees set by the Minister of Communications are generally regarded as reasonable as long as pricing is cost-based (Smit 2004; interview #8:2004).¹⁶

The foreign ownership limitation of 25% on any one USAL is also seen as not conducive to investment and none of the USALs interviewed were able to attract foreign investment. Cross-holding limitations were improved from initial restrictions prohibiting any cross-ownership to less than 5% in more than nine USALs. This appears not to have been leveraged by applicants who have been protective of their business strategies and reluctant to collaborate (Interview #8: 2004).

Drawing on some of the international experi-

ences cited above, an appropriate licensing procedure would ideally have no fees—the objective criteria to be bid on would be on rollout and tariffs over the next five year period—and the entrants would be supported through low interest loans or government guarantees in the absence of the option of a reverse bid funding mechanism which had regrettably been ruled out as an option as it had been in South Africa.

From Under-Served Area Licensees to Viable Operators

The USALs in South Africa have a dual purpose. They are intended to provide services to areas that have not been served by the incumbent due to the high cost of expanding the network in relation to the low purchasing power of households located within those areas. They have also been seen as a mechanism to allow the entry of small-scale entrepreneurs into the high-cost telecommunications industry. Particular focus is on historically disadvantaged communities and individuals who have been historically excluded from the industry and have not been beneficiaries of the large-scale empowerment licenses associated with the third mobile cellular license and second network operator license (Section 40(a) Telecommunications Act).

Such licenses also have the potential to contribute to job creation, to develop the telecommunications sector, and to improve the gross domestic product.

While sight of these important public interest objectives should not be lost, the focus on these public interest objectives appears to have happened at the expense of ensuring the viability of these marginal operations through government incentives and regulatory flexibility. This is critical if empowerment groups and SMMEs are not to be set up for failure. The licenses are being granted in areas that have traditionally been underserved by the incumbents, because they are perceived to be high-cost, low-profit areas. Unlike many other licenses aimed at improving universal service, these licenses are not be-

cencees, he said he knew of people that had lost their homes, and that in order to sustain the license application processes over the two-year delay he had personally invested .5 million Rands (\$75 000) as the expense of some of his small businesses which had gone under.

15. *Historically-disadvantaged individuals or groups are those that under apartheid were denied basic human rights on grounds of their race and those who were prejudiced in terms of opportunities, including women and the disabled.*

16. *See Tertia Smit's (2004) extensive market analysis for more details.*

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ing granted exclusively. New entrants will have to compete with a very strong incumbent PSTN, a Second Network Operator in due course, and three mobile cellular companies.

Even with the associated benefits of cost-effective technologies, operating a telecommunications network is a capital-intensive business. The average investment cost in direct exchange lines, including access technologies and exchange infrastructure but with no transmission backbone, is around \$1,000/line. The smallest USAL licensee is likely to require in excess of US\$5 million to capitalize its network and the larger licensees closer to US\$20 million (Emdon 2001). These figures greatly exceed traditional and legal conceptions of SMME activity and fall way beyond the SMME ceilings for state support of small enterprises in the communications sector.

Even some of the low-cost technologies that have recently come to the fore and are currently deployed in pilot projects are still large capital projects.¹⁷ Michael Best (2003) refers to low-cost wireless networks being deployed at a cost of US\$50,000 but these have relatively low radiuses—multiples of these would be required to service the large regional areas licensees are required to service. The average investment cost per direct line however is considerably lower at around US\$300, which is far more feasible for poorer rural areas although this figure is calculated for higher-density rural areas of India (Best 2003:118).

Unfortunately the lack of early state support for license applicants together with the delays that have depleted their resources means that the space was never created and the incentives were never there to encourage the exploration of such innovative options. By and large, most USALs will operate as extensions of the national GSM mobile operators—most with Vodacom and one with MTN to date.

In some countries unlicensed 2.4GHz and 5GHz spectrums have been used by communities to build their own wireless networks to provide their basic voice and data services without billing users. Permitting such initiatives is generally seen as threatening the business case of the USALs, but many of those building these networks in other countries would not be able to afford broadband services. As licensed network operators USALs could have played

a role in providing the backbone to interconnect such initiatives while providing the high-quality paying services that those who can afford them generally prefer.

The next section highlights the major issues arising from the licensing regime that emerged for the USALs and argues that it did not create an enabling regulatory environment for their entry and viability in the market (see ICASA 2003).

Funding

Though the Universal Service Agency has subsequently indicated that it will make subsidies and loans available to the successful applicants, despite the high costs of entry, there was initially no clear funding framework attached to the policy or licensing framework to support the applications and start-up process for under-serviced areas. While the final Invitation to Apply has dropped the financial bid from the evaluation criteria, the licensee will face several potential constraints, such as ownership restrictions and rollout undertakings, in order to secure the license without any state funding arrangements to leverage in support of a business plan.

As previously discussed, all indications are that such initiatives are only successfully implemented, and often sustainable, on the basis of direct or indirect state support. In some countries where such licenses or concessions have been granted, they have been granted on an exclusive basis. In South Africa the USALs will be competing with the public fixed-line incumbent and the highly successful mobile operators. Where licenses have been granted for remote, low-income areas, many countries have provided subsidies to operators to provide relief. Some of the traditional inefficiencies associated with subsidies have been removed through competitive allocation, such as in the reverse bids used in Latin America. Evidence indicates that substantial private capital can be leveraged from such subsidies. This is true of cooperative models in the United States, Latin America, and Central Europe where government guarantees and low-interest loans have been used.

The use of the Universal Service Fund in South Africa for this purpose—at least R100 million should be available annually—would seem obvious. It

17. Navas-Sabater, Dymond and Juntunen (2002:18) provide a technology cost outline for the different technologies available but which demonstrates for low density areas the prices remain high.

would benefit all industry players and indeed the economy by extending the reach of existing networks and creating a multitude of new calling opportunities. In addition the multiplier effects of improved communication in previously underserved areas have been well documented (Grace et al. 2001).

Due to changes in leadership and an adjusted approach to universal access by the Universal Service Agency, those granted licenses did belatedly receive financial support. Following an initial innovative funding proposal which failed to receive state approval, the Agency moved to a far less incentive-based mechanism for the USALs to access Universal Service Fund support (Interview #2). On receipt of their license, each USAL will, on a non-competitive basis, receive a grant of R15 million over three years and upon achievement of performance targets.¹⁸ While this has provided USALs with some relief, the timing and amount have not been very effective in leveraging the further capital required to demonstrate their viability (Interviews #7 and #8 2004). This indiscriminating, equal hand-out to all is unlikely to be as effective as a reverse bid with the associated allocative efficiencies associated of a competitive process. Therefore only those who have access to capital and resources and are already in the licensing process are likely to be the beneficiaries of the grant.

Even with the USF grants, the fixed amount over three years is not substantial in the telecommunications business; USALs will require substantial private sector funding, primarily through venture capital. Other than the Development Bank of South Africa, which has an obligation to consider loans for infrastructural development, there was little private investment interest in the licenses. Licensees indicated that private funders either did not understand the potential of this market or simply regarded it as too risky (Interviews #7 and #9 2004). The risk profile of these licenses could have been reduced by demonstrating a clear regulatory framework that was not burdensome on the new entrant with re-

gard to license fees, reporting requirements, and tariff filings but which would ensure rapid entry into a market that can demonstrate likely revenue streams. With the lack of market certainty and stringent cross-ownership rules, regulations need to be reviewable and not too restrictive.

In addition, significantly higher charges for terminating calls on USAL networks than on largely amortized incumbent networks have been pivotal in demonstrating a business case for the USALs (African Venture Partners 2002:14).

Another limitation on the subsidy is that it can legally be used only for the acquisition and construction of infrastructure. In fact the greatest barrier to entry and success is not the financial capital which is available domestically and internationally but the human capital needed to secure it. While the USALs greatest advantage is the local knowledge that big national operators lack in their areas, their biggest challenge is specialized telecommunications and business skills capacity. "USALs won't ever get to financing the infrastructure without being able to buy in know-how to build business models, pilot their way through the legal and regulatory hoops and negotiate critical co-operation with other operators and competition agreements, such as interconnection, and we have not been able to access this funding, prior to the granting of the licensing or for non-infrastructure use" (Interview #8 2004). In the U.S. this was acknowledged with the state support cooperative extension of networks, with the state providing not only financial support but technical support from the point of application for licenses.

Regulatory issues critical to the building of a feasible business plan for USAL operators can be summarized as:

- The sharing and leasing of existing facilities of major carriers;
- The sharing and aggregation of USAL operator facilities and services;
- Cost-based asymmetrical termination charges

18. Following external consulting advice, the Universal Service Agency tried to implement a more effective subsidy/loan mechanism but their intention was vetoed by the Attorney General whose narrow interpretation of the law regarded it as ultra vires. GG 24917 issued in May 2003 proposed a two pronged approach including firstly a low-interest equity access loan, regarded as fiscally more prudent than a straight grant of R5million. Once 50% was repaid, full title to the shares were to be transferred from the Agency to the registered owners of the USAL. In addition in order to reduce the risk exposure of Development Fund Institutions and commercial banks approached by USALs, the Universal Service Agency intended to take upon itself the capital risk of the first R10 million of borrowing by each USAL licensee.

between the USAL and PSTN on national long-distance calls/lines;

- Access to specialized human capital and technical support.

Facilities Sharing and Asymmetrical Interconnection

Allowing facilities sharing was key to the viability of the USALs both with regard to sharing existing network operators' facilities at reasonable rates and sharing a common platform to provide certain services. The high entry costs associated with operating a telecommunications network, even on the basis of new, cost-effective technologies, makes network capital costs a significant barrier to entry. As a report on the Financial Viability of the Under-Serviced Area Licensees commissioned jointly by the Development Bank of Southern Africa and the International Development Research Centre indicates, the shared platform "converts a major capital cost into an incremental capital cost and incremental lease cost" (African Venture Partners 2002:13). A shared platform further provides a number of efficiencies resulting from increased scale of operations including facilities and trained personnel to provide all customer activities for the USAL operators. Interconnect is critical, both as a direct cost for outgoing calls and as a revenue stream for incoming calls. This will require a firm regulatory regime that compels major carriers to provide facilities and interconnection speedily and at fair cost and that recognizes USAL operators as public operators with the associated benefits of wholesale pricing.

An interconnection regime that recognizes the asymmetrical cost of terminating calls in high-density, low-cost urban areas and low-density, high-cost rural areas was argued to be central to the business plans of most applicants. Traditionally, and largely due to a monopoly provision that the sender and receiver be on the same network, costs have failed to recognize both origination costs and termination costs, and geographical averaging has even been seen as a welfare contribution. This means that underserved areas are denied the investments that might have flowed into those areas through

operators being able to receive a decent return on their investment in genuinely high-costs areas.¹⁹

The principle of asymmetrical costs was at the heart of the dispute over international settlement rates in the mid-1990s. Following protracted debate the ITU finally recommended that the asymmetrical costs associated with terminating international calls in developed and developing countries be recognized. While it remains a contentious issue in many jurisdictions, it has long been an accepted practice. In Rhode Island, United States, for example, in 2002 termination of traffic in rural areas was 38% higher than urban terminations in peak time and as high as 315% higher in off-peak time; in Maine, peak termination rates in rural areas more than double those in urban areas. In Chile, the cost of terminating a call in rural areas is more than 18 times higher during peak time and nearly 10 times as higher during off-peak than in cities.²⁰

Without cost-based asymmetrical interconnection prices, a sustainable business case cannot be made for USALs. A financial viability study of the USALs in South Africa concluded that the 30% proposed in the draft regulations would compromise the viability of the USALs and that the differential would need to be at least 70% for the USAL to be viable (African Venture Partners 2002). There are limited revenue streams and without these there is no sustainable rollout. If it is forced to rely on the revenues from symmetrical origination and termination charges, the only way a USAL will survive is to control its costs by minimizing rollout. At best it will survive as a niche player, but even this is unlikely considering that it will be competing with five operators in the designated areas and, presumably, had some rollout undertakings to have won the license. Asymmetrical interconnection rates, together with a degree of regulatory flexibility, have the potential to dramatically improve the viability of USAL operators. Increased revenues from termination fees should also permit new entrants to reduce origination prices in order to compete with the incumbents, which should spur greater demand for their services, permit greater rollout and create more revenues, and

19. Andrew Dymond (*Dymond and Oestman 2003:63*) argues that on average the cost of delivering services to remote, low population density areas is around 6–10% more than in formal urban areas.

20. Rhode Island tariffs were retrieved May 7, 2002 from www.ripuc.org/rulesregs/; Maine tariffs were retrieved May 7, 2002 from www.maine.gov/impuc/industries/telecom/telephone_laws_rules.html. For Chile see Wellenius (2002:36 Table IX).

create a virtuous cycle of sustainability. Price competition results in faster rollout. Origination price competition in Morocco's mobile duopoly led to an 1,800%-a-year growth with over three million new customers—of which over two million were new incumbent subscribers (Samarajiva 2001).

Flexible entry could also result in innovation of new services and business opportunities, generating further revenue in the designated under-served area. For example, with even a small operating profit on each call resulting from termination in the under-served area, USAL operators might induce ISPs to relocate to underserved areas for marginal incentive payments for incoming traffic terminated by the USAL operator.

Several presentations at the ICASA public hearing on this matter argued that it was important that the regulator prepare a default interconnection agreement in case of any delay in the negotiation process with incumbents. Following these hearing ICASA issued the draft Supplementary Interconnection Guidelines in October 2002 (ICASA 2002) but these were subsequently withdrawn without explanation. It was believed to have come under pressure from the incumbents who threatened to take the matter on review (Interviews #9 and #7 2004).

Some operators believed this to be to an effective regulatory framework critical to their business plans that they hired a consultant to prepare a pro-forma Reference Interconnect Offer that would provide USALs without automatic interconnection within 60 days of having indicated their desire to interconnect. However, it fell on deaf ears. "This is really the missing link in the regulatory regime that has been created for USALs. It is vital to enhancing the competitive environment for us" (Interview #8 2004).

Dymond and Oestman (2003:63) reinforce the importance of allowing differential geographical access charges to acknowledge the real difference in costs interconnection and encourage investment by operators in those areas. However, they draw attention to the regulatory burden associated with such regimes and the additional technical problems that may arise in relation to numbering, call accounting, and inter-operator billing, all of which were raised during the ICASA public hearings.

Although not permitted by the legislation, direct access to the international gateways could also have bolstered the viability of the USALs,²¹ especially with an asymmetrical termination charge for international calls terminating on their networks (Emdon 2002).

Ownership and Control

Ownership restrictions, while understandable from a public interest point of view and facilitating the entry of an increased number of players, have the potential to undermine the viability of operators. While technological gains have made possible the provision of telephone services at much lower cost than ever before, network economies still require a critical mass of people to justify the relatively high cost of network development. Many aspirant licensees were hoping to have at least significant ownership in a number of licenses in order to benefit from economies of scale. Some aspirant licensees have indicated that as much as 50% of network costs would be duplicated in each license and could not be justified in terms of the potential market in each area. The final ownership rules restrict the ownership and control to only 5% in any one other license, which provides little relief in this regard (Interview #7 2004). It may still be necessary for the regulator to adopt a very flexible approach to the sharing of facilities and services among operators to encourage viable enterprises.

Licensing Process

While the viability of these licenses might be regarded as questionable by industry pundits, for many SMMEs and other interest groups in rural areas, these licenses present a once-in-a-lifetime opportunity with people likely to put their personal wealth on the line. The licensing process should be as simple, predictable, and incontestable as possible.

An excellent case study is provided by the GSM license awarded in Morocco in 1999. US\$1.1 billion was paid for the 15-year license to operate under "relatively unfettered competition" (Wellenius and Rosotto 1999). One of the highest fees per capita ever paid for a mobile cellular license has been attributed to the leadership, clarity, transparency, and lack of subjectivity in the process. Not that USAL licenses should be determined on the basis of a competitive financial bid, but it demonstrates the high

21. For success of international gateways in extending rural access see Sri Lanka at www.regulateonline.org/intelecon/2003/January_2003/A-Sri%20Lanka-030120.htm

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level of credibility and transparency in the licensing system as the market was not in and of itself one of the most lucrative.

To ensure that the license award process is as objective as possible and that the terms of the license are clear and unequivocal, the rights and obligations of the licensee, together with the undertakings made against the evaluation criteria, should be transparently translated into the terms of the license, as was the case in Morocco.

Drawing on the Moroccan experience but accounting for local policy, the license could consist of three primary areas to include the special requirements of South African policy such as empowerment requirements—the license description, the rights attached, and the license obligations.²²

Rights

In terms of the South African law the rights should include:

- the licensee's right to operate and maintain a network capable of and limited to the provision of the services identified as permissible and technically capable of interconnection with the public switch telecommunications operators and mobile cellular operators; and
- the right to provide subscribers with services in accordance with the terms and conditions of the license and limited to the geographic area to which the license applies.

In terms of the existing legislation, Section 40A(3) of the Act allows for the provision of the following telecommunication services: Voice over Internet Protocol services; fixed mobile services; and public pay telephones. Although this is quite extensive and renders the USALs fully-fledged public operators, from the point of view of providing as few barriers as possible to entry for this type of license, one would ideally wish to have no license restrictions at all.

In addition, technology should not be prescriptive, but licensees should be able to offer subscribers all the services listed above, and technology should be compatible with existing frequency usage and capable of transition to next generation services. Licensees should also have rights to access numbers within the confines of the South African numbering plan to bill their subscribers according to their busi-

ness plan. The license should also be for a period that will allow the investor to get a decent return on investment, probably 10 to 15 years with the option of renewal.

Obligations

USALs should not be required to contribute to the Universal Service Fund but should be required to operate and maintain pay phones in each community with over 500 citizens that do not currently have pay phone access within the first five years of its license.

Rather than a straight competition, the bidding for the licenses should take the form of a least subsidy auction whereby the applicant for a particular area who demonstrates that it is able to provide the most cost effective service, and therefore requires the lowest or no subsidy, wins the bid. Payment should be made incrementally to create incentives for network completion and operation. A portion could be held over for annual payment against roll-out and service performance.

The licensee should have been required in the bidding process to commit to a ceiling for tariffs within the first five years, which should become a condition of the license.

The licensee should also have been exempt from license fees of 0.1% of total turnover from year three until it becomes profitable, or not within the first five years.

Evaluation criteria

The evaluation criteria applied by the regulator in assessing the bids arise from the Objectives of the Telecommunications Act as amended and its associated regulations, but their weighting is critical to the success of the licenses.

A standard requirement of most applications in a competitive license process is that the entity provides an operational description and its business plan. This was uncritically included in the USAL license which appears to have been drafted within the same licensing framework as the larger commercial licenses (Interview # 6 2004). In this situation such a requirement should have been used only to allow the applicant to demonstrate certain threshold competencies required to operationalize the license and for the coherence of the bid as a whole to be considered. Other than disqualification for failure to

22. For detailed account, see ITU (2001).

meet minimum informational and legal requirements, this component should not have been evaluated directly. Seldom do serious competitors declare their business plans and seldom do assessors have the competence to weigh one plan against another other than in the most subjective terms.

With regard to ownership and control, applicants should demonstrate that they qualify for the license in terms of S40 (1) and (2) (a) of the Act which has specific social objectives, both with regard to the participation of small business and historically-disadvantaged individuals, especially women.

A critical criterion should have been the applicant's commitment to roll-out targets achievable within the first five years of operation and the technological means to achieve its commitment. This should indicate the estimated population coverage and the geographic spread. The commitments should be measured in terms of working connections, not just potential access point or disconnected lines.

Another important criterion should have been the applicant's commitment to affordable tariffs and quality of service. The regulator should be looking for a realistic commitment to an annual price ceiling over the first five years and use that as a criterion in consideration of consumers.

Finally, a criterion such as *coherence of the offer* would allow the regulator to use some discretion in determining the feasibility of the proposal. Are commitments towards rapid network expansion sup-

ported by intended revenue streams or loans? How are low tariffs going to be achieved in relation to network expansion undertakings?

Using these simple criteria and a process by which the quantitative commitments of the applicants are assessed to determine the outcome of the award, the licensing process could have been kept relatively simple and less contestable. The licensees may have become operational much earlier, giving them a considerable advantage in an increasingly competitive market. If these undertakings automatically become the terms of the license, very little further negotiation with the regulator would be required, which has been the cause of the delays between the Ministerial granting the licenses and ICASA issuing them.

This simplified process could be reduced to a bid template that is completed and translated directly into an evaluation score and directly provides the terms and conditions of the license (Figure 1).

Conclusions

A window of opportunity was opened with the decision to allow the entry of small-scale operators into the market in South Africa. This opportunity however was only to be realized if the necessary conditions were created to promote the viable entry of these relatively high-risk operations. The entry of multiple smaller players in the market under favorable regulatory and business conditions had the potential to fulfill a number of public interest objectives and to invigorate the industry. It could

have resulted in providing services to those currently without; providing choice to customers; and even driving down prices to more affordable levels, all with the associated multiplier effects on the communities reached. With the right processes and incentives the introduction of this particular type of license had the potential to result in innovative business models, alliances, and partnerships with existing operators and businesses. It could have stimulated the growth of regional

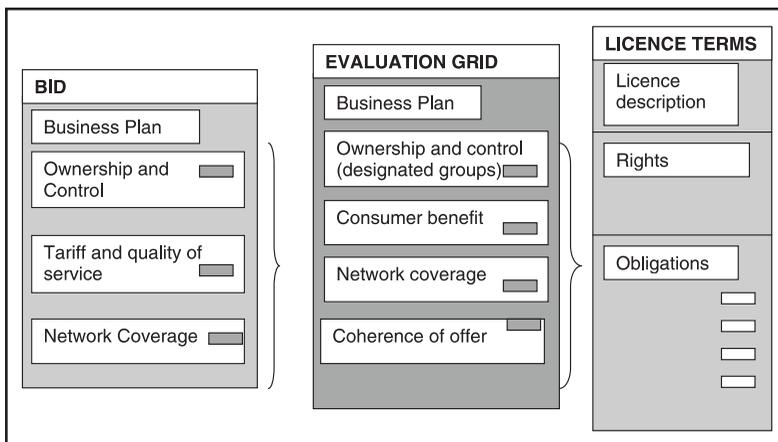


Figure 1. Simple and transparent licensing process and terms
 Source: Adapted from Moroccan Regulator ARTEL GSM licensing regime.

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ISPs and resulted in other business stimulation and job creation. Most of those granted licenses under the prevailing disabling policy and regulatory environment have become little more than mobile cellular operator franchisees, likely to be running marginal business with little surplus to innovate, compete, or extend services.

In order to be viable, not even outrageously successful, the USALs required the development of a licensing and regulatory regime that was flexible and supportive of this significant initiative. The areas being licensed are those that have traditionally not been served by the incumbent due to the high cost of rolling out services to low-density areas inhabited by low-income populations. Furthermore, the licenses are being offered to groups that historically have been without access to capital and other resources. While new, cost-effective technology and low transaction cost business models provide some solutions, it is the responsibility of policy and regulatory decision makers to create conditions under which new entrants are most likely to make effective business cases.

If the historically disadvantaged beneficiaries of these licenses and other SMMEs who have been kept out of the telecom industry for so long are not to be set up for failure, the licensing regime should have been made as certain and attractive as possible to investors. This means providing guarantees, in advance of the licensing process, that the regulator will act swiftly and effectively to ensure the new entrant's timely access to incumbent facilities and interconnection at fair, wholesale prices. The key to making an effective case for rural access will be the creation of an asymmetrical interconnection regime which recognizes the higher cost of terminating services in lower-density remote areas. Termination charges should not be regarded as subsidies; they are cost-based and are simply reverse discrimination by allowing the same treatment for USALs as bigger operators receive.

Besides the differential between urban and rural termination charges being the real cost difference, it may allow the USAL to bring down the origination price, which is the key to attracting subscribers and retaining them with affordable services. This would result in increased revenues to further expand the network. It may also have allowed the development of various associated business opportunities that lev-

erage the differential rate in the termination charges.

Together with such upfront guarantees that would facilitate local operators securing an investment and technology partner and bringing in critical know-how, the regulatory environment should be rapidly instituted, be flexible, and have low transaction costs as possible. Their reporting mechanisms should be kept simple and should be primarily focused on the new operators meeting their roll-out targets. Following an initial price-ceiling offer in their license, they should not be required to file for any tariff changes below the ceiling.

With regard to the network operations, the license and regulatory regime should facilitate a high degree of collaboration among USALs to aggregate their services and facilities so as to build their business case and be competitive in their districts. Ideally, the offering of uneconomic licenses should be supported by a funding model allowing for government subsidies awarded through some form of competitive process or for no- or low-interest state loans. Evidence from other countries indicates that these are key to leveraging further investment, far in excess of the initial amounts provided by the state.

While those immersed in economics of the sector might steer clear of these licenses for many communities, SMMEs, and individuals such licenses represent a once-in-a-lifetime opportunity on which people have staked their personal assets. There can only be a certain number of winners for these licenses; there will be several losers. While application fees should demonstrate serious commitment, they should be kept low enough so that unsuccessful applicants do not suffer significant financial losses. These licenses should not be viewed as a revenue-raising opportunity for the state but as a developmental opportunity. Application and license fees should therefore be kept in line with administration costs incurred by the regulator.

For the same reasons, the regulator comes under even greater pressure from various interest groups during the licensing process and, subsequently, when unsuccessful bidders count their losses. It is critical therefore that the licensing processes be kept simple and objective. These licenses should not be treated the same way as major national licenses. Keeping the process simple and incontestable would also ensure that licenses are less likely to be delayed

by lengthy decision-making processes or legal reviews.

The timing and protection afforded any licensee will determine their sustainability. At the time the USALs were legislated in South Africa they had the advantage of being the only other category of operators that could offer voice, including VoIP, services. Toward the end of 2004, as the USALs faced the prospect of their third Christmas since the licensing process began without being operational, the Ministry of Communications announced policy directives aimed at further liberalizing the market. Much needed as they were by the sector, these may have finally closed the window of opportunity for the USALs. "It is the lack of policy and regulatory planning that has killed us. To have us licensed on time, the entire process should have begun 18 months earlier and 18 months ago. We should have already have been in the market for a year" (Interview #9 2004).

With many of them having invested or lost more than they could ever have afforded to in the protracted licensing processes, with little prospect of fulfilling their dreams of offering profitable services in innovative ways in the under-served areas, and with no licenses issued at that time, talk was turning to recovering their losses through legal action against the state (Interviews #8 and #7). Ever tenacious, more entrepreneurial and innovative licensees-designate are already developing alternative revenue streams, with the establishment of complementary businesses, such as financial and insurance services, that they can co-brand and leverage in their local areas. With few opportunities for people of limited means to enter this market, those granted licenses put on a brave face. "The opportunities have diminished but not vanished completely. Our biggest advantage is in our local knowledge—we can still leverage that in this changed environment" (Interview #8 2004).

But largely the drivers of innovation have been absent as many operators surveyed their remaining resources and weighed these against the environment in which they were to operate. Most appeared to opt for arrangements with mobile operators that would do little more than extend these relatively high-cost services into these areas.

Faced with this bleak scenario, the question of how this window of opportunity opened by a gov-

ernment legendarily committed to development, the poor, and redress through black economic empowerment could swing shut so unceremoniously, remains on observers lips. Why has the country not drawn on international experience and ensured the success factors now in place in a range of countries? Is this the result of a grand conspiracy by more powerful, long-protected interests to quash the rights of those who might nibble on the edges of their super profits? Or is it simply neglect?

The reasons for the suboptimal outcome of this policy intervention are multiple and complex, but it echoes trends within the broader dynamics of political economic transformation in the country. The country is guided by one of the most progressive constitutions in the world which reflects the desire of the country not only to protect the rights of its citizens but to ensure equity among them in order to redress the legacies of inequality and injustice. The fulfillment of such grand, national imperatives has often resulted in over-reaching policy that cannot realistically be implemented. It is not only the telecommunications sector which is characterized by over-promise and under-delivery.

Nor is it reform inertia that prevents the sector from delivering the major policy objective of achieving affordable access through limited competitive entry. In the last decade there have been three major reform interventions; the last is currently still underway. The blame therefore has often been laid at the door of the regulator for the lack of implementation. There is little doubt that the regulator is woefully ill-equipped to fulfill the mandate of the policy and law from a resource, and particularly human capital, point of view. This is certainly a major reason for the licensing delays that have impacted on investment and effective competition within the sector. But policy that cannot be realistically implemented is not good policy.

The intended institutional arrangements resulting from these policy reforms, together with the unintended consequences emerging from them, have resulted in a de facto monopoly in the backbone network of the country which has not been regulated effectively. This is a result of the asymmetries of information associated with access and competition regulation; it is also a result of the structural conflict of interest in the policy and legal framework that requires the Minister of Communication not

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only to serve as national policy formulator for the sector but to represent the state, which remains the dominant shareholder of a highly-profitable incumbent after partial privatization and the public listing. Imperatives to protect the value of state assets, which have been realized in the soaring share price of the incumbent, have not only resulted in the veto of critical competitive regulations by the Ministry that were perceived to be prejudicial to the incumbent, but also put pressure on the regulator to license other new-entrant, state-owned enterprises. The second round of legislative reform required the regulator to issue a multimedia and international gateway license to the state-owned broadcasting signal distributor, and the communication arms of the national power company and the rail network, who were to be compulsory partners in the second network operator.

It was this round of reform (Telecommunications Amendment Act of 2001) (RSA 2001c) mandating the licensing of this panoply of licenses that also ushered in the USALs. The decision by the regulator to prioritize the licensing of these 'bigger interest' licensees over the USALs severely prejudiced their viability. Although the process to license the USALs by the regulator started with good intent in 2002, it was overwhelmed by other more powerful interests representing much bigger purses. This was compounded by a change in the decision-making council within the regulator and the departure of those councilors that had started the USAL licensing processing.

There cannot be any express intention by the state to sabotage its own efforts. The licensing crisis in the sector results from policy and institutional failure. By the middle of 2005 the prioritized second network operator remained unlicensed.

Despite this unsupportive licensing and regulatory regime for USALs there were more than 43 applicants for the 14 available license areas in a new round of licenses following the Minister's call for applications in January 2005 (RSA 2005). If the current USALs do succeed in South Africa, it will be despite the policy and regulatory environment not because of it. It is incumbent on the Department of Communications and ICASA to learn from the hard lessons of the first round of licensing and create an environment for the next round that will induce the introduction of innovative and affordable services to

those who currently do not have access to and cannot afford existing services. ■

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