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## **Under-serviced Area Licences in South Africa: Steps to achieving viable operators**

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## **Abstract<sup>1</sup>**

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 to remote areas in Latin America, Central Europe and Asia traditionally thought unserviceable by incumbent telcos. In a policy move in line with this increasing number of success stories in other parts of the world the South African government has allowed for the introduction of smaller-scale participants into the telecommunications market to provide services in under-served areas. Emerging from the latest telecommunications policy reform round in 2001 it is anticipated that these special operators will be licensed 2003. These licences have two major public interest imperatives. The first is to increase access to telephone services in areas that have not been adequately serviced by the incumbent fixed line operator, largely because they are remote, low density and in many cases are inhabited by low per capita income communities. Secondly, they are aimed at bringing small business and particularly historically disadvantaged groups into a sector from which they have been excluded. The key question is whether the conditions can be created through the ensuing licensing and regulatory regime to promote the viability of these operators and to facilitate their evolution as business and developmental models? Drawing on international experience this paper identifies what are likely to be some of the policy and regulatory constraints that may serve to undermine the viability of these licences. It identifies key success factors in other jurisdictions and how these might be applied to increase the sustainability of the under-served area operators. Specifically, it presents a funding framework that can leverage financial commitments of the state whether through subsidies, low interest loans or government guarantees to attract investment; an asymmetrical interconnection regime that will allow for cost-based termination rates on the substantially higher cost USAL networks to build a business case for investors; a flexible low-cost regulatory regime; and a licensing process that is kept as simple as possible.

### **1. Background and procedure**

As a result of the latest policy reform process and specifically the resulting 2001 Telecommunications Amendment Act, small businesses may apply on invitation by the Minister of Communications for licences to provide services and facilities to under-served areas. These areas are defined in the

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<sup>1</sup> This paper arises from a project commissioned by the Canadian International Development Research Centre (IDRC) to determine the policy, regulatory and financial environment most conducive to the sustainability of Under-served Area licensees in South Africa and 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

legislation as having teledensities of less than 5% and it is the responsibility of the Minister to determine such areas.

Section 40 of the Act requires that the Under-serviced Area Licensee (USAL) provide telecommunications services, including Voice Over Internet Protocol (VOIP), fixed mobile services and public pay telephones. Long distance calls must be transported by any of the national fixed and mobile operators and through the trunk network of the incumbent public switched telecommunications network of the incumbent, Telkom, or in future the SNO, to the three potential international gateway licensees. Telkom has an international gateway, the signal distributor Sentech has been granted a carrier of carrier licence and the SNO will be entitled to operate such a service when it is eventually licensed.

On the basis of this, the Minister has declared 27 areas under-serviced 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 licence areas have been dogged by controversy as the incumbent operators argue that most of the areas are above 5%.<sup>2</sup> While a more reflective measure of the actual access and usage of telephones, particularly with regard to mobile cellular telephony which is increasingly the dominant form of telephone access in African the point remains that almost any area of sufficient dimensions identified in South Africa would be significantly under-serviced. Universal service targets are not set at 5% teledensity.

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also wish to express my appreciation for the constructive comments from Prof Bill Melody and Heloise Emdon and to Sean Kane from the LINK Centre for his assistance with the preparation of this paper.

<sup>2</sup> 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 with a specified geographical area, usually a country. Such figures are always include subareas 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 centres and rural under serviced 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 indicted that some of the areas identified as under-serviced in terms of the recognised fixed line measure, are in fact well serviced 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 be 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 utilised. 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.

The purpose of this licensing process is not to define regions so narrowly as to make them unviable. Regions must be classified as potentially viable areas and attention paid to regional communities of interest and include market and government centres. Even the regions of the country with the highest telecommunication penetration do not have universal service by international indicators. There seems no risk that any of the identified regions run the risk of receiving too much service as a result of these licences.

So, while on purely technical legal grounds the areas identified could be challenged, there is little doubt that more phones are needed in all the areas identified. To challenge the areas would be a self-serving act on the part of incumbents and not in the national interest. It would probably also be short-sighted in terms of incumbents' own business expansion. Evidence from around the world indicates that network expansion through the introduction of competition is 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.

The more pertinent question perhaps is that of how the first round of areas were selected and why the number was restricted initially to eight and finally ten, as this is not indicated in the gazette. 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. There is a strong case to be made in favour of this approach from a viability position, especially without a government subsidy, to offer services in these areas which may have relatively low teledensities but which without the economies of scale associated with larger networks, may find themselves unable to build a business case on the basis of the local economy.

Possible reasons for the restricted number of licences might be to not overburden the regulator with a flood of licensing or to test the success of a first batch of licences before granting all of them. While there is validity to both these reasons they do assume a relatively complex, fully competitive licensing process rather than a possibly more simplified process involving a form of class licence with certain thresholds established with which applicants would need to comply, as proposed later in the paper.

Following an initial draft ITA 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 and licensing fee and the emphasis on the bidding price together with no state funding strategy were all identified as potential pitfalls. While the latest ITA issued by the Minister in December 2002 does not address all these concerns, the financial offer, a heavily weighted criterion in the draft ITA has been removed, which responds to the concerns that this

type of licence was being used to generate revenue for the state. However, without a reverse bid for a subsidy there is now not a very 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. There are a further five points for ‘Additional Features’ which also refers to business activities such as billing, directory services, consumer protection and emergency services, which it could be argued takes the purely business aspects to 50%. However, as discussed below these tend to be more subjective to assess - if any serious competitor provides their real plans at all – and therefore more subject to review. There may also be some overlap from an assessment point of view too 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 purpose of the USAL and while it greatly improved in the final ITA from the initial 5% proposed in the draft ITA, it could well have been rated even more highly and as a relatively objective and quantifiable criterion used as a key determinant in making the award.

Less significant to the future viability of the licences and the meeting of the policy objectives is the issue of the application fee which remains perplexing from a more social point of view. It has been increased from R15 000 in the draft to R30 000 in the final ITA. Although one would wish to dissuade frivolous applications it is likely that individuals and communities in areas with few such opportunities may well place their private assets on the line in order to secure these licenses. Only one group in each area will get the licence, the others, mainly more vulnerable SMMEs and historically disadvantaged groups less easily able to absorb losses into the enterprises, will forfeit their application fee to the state.

Drawing on some of the international experiences cited below an appropriate licensing procedure, discussed in more detail later in the paper, 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 and government guarantees, assuming the decision not to use the Universal Service Fund for a reverse bid has already been ruled out as an option. What have been the success factors in mechanisms used in other parts of the world to increase remote access?

## **2. Models used in other parts of the world to address rural access**

### *2.1 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 liberalisation of their markets to provide governments subsidies to stimulate telephone access in remote rural areas.

In Chile, licences 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 liberalisation of the sector in the early nineties, the rural areas remained underserved due to the high cost of reaching remote areas, the low income levels of people in the rural areas 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 achieving public access for 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 programme of projects eligible for funding on the basis of competitive bidding.<sup>3</sup> 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 they were drawn to the attention of the private sector to apply for licences. Where they were found not to be commercially viable they were 'ranked by NPV per unit of subsidy need to make them viable and by other factors'<sup>4</sup>. Forty-six projects covering 1285 locations throughout the country with subsidies totalling US \$4,3million, were launched in 1995 and ultimately provided service to about a third of the population without access, just below half a million people. Rollout of services was encouraged by the subsidy for projects, which averaged around US\$3 500, being paid for only once the facilities had been built. This programme resulted in the proportion of Chile's population living in places without access to basic voice communications to decrease from 15% to 1% in 2002.<sup>5</sup> According the 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."<sup>6</sup>

Although Peru began a similar process much earlier in 1992 with the establishment of a dedicated telecommunication fund, Fondo de Inversión en Telecomunicaciones (Fitel) and the regulator,

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<sup>3</sup> Wellenius, B (1997) Extending Telecommunication Service to Rural Areas – the Chilean Experience, Public Policy for the Private Sector, World Bank Group, Washington [www.worldbank.org/html/fdp/notes/notelist/html](http://www.worldbank.org/html/fdp/notes/notelist/html)

<sup>4</sup> Ibid at par4.

<sup>5</sup> Wellenius, B (2002) Closing the Gap in Access to Rural Communication: Chile 1995 – 2002, Info 4.3 p29. Emerald, <http://www.emeraldinsight.com/1463-6697>

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 5000 rural towns and public access to the Internet in all 554 district capitals within ten years.<sup>7</sup> 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, tendering and monitoring performance.<sup>8</sup>

The decision was taken to divide the country into six regions, each with more than 700 towns, and then 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 access to Internet 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 five 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.<sup>9</sup>

Payment of subsidies is tied to project implementation and service quality with partial payment at the beginning of the project, another quarter once facilities are installed and the remaining amount in instalments over the five year period. This allows the regulator to penalise operators for failure to meet operational deadlines or for payphone or system outages.<sup>10</sup>

Lack of political will together with institutional infighting stalled a very promising process but by March 2001 three competitive tenders had been conducted for six projects covering all 5000 rural towns to be connected by 2003.<sup>11</sup> Despite these delays the first pilot project revealed some interesting outcomes. Firstly, "the winning bid requested a subsidy 41% lower than Osiptel had estimated and 74% lower than a previous offer from the incumbent operator".<sup>12</sup> Traffic also exceeded Osiptel's forecasts by 32% in the first year. The pilot project mobilised private investment at a rate of US\$22 per inhabitant while requiring only a US\$11 subsidy per inhabitant.<sup>13</sup>

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<sup>6</sup> Ibid. For a detailed description of the Chilean experience see Wellenius, B (2001) Closing the Gap in Access to Rural Communication: Chile 1995-2002 at [http://www.infodev.org/library/WorkingPapers/chile\\_rural/Chile](http://www.infodev.org/library/WorkingPapers/chile_rural/Chile)

<sup>7</sup> Cannock, G (2001) Telecom Subsidies: Output-based Contract for Rural Services in Peru, Public Policy for the Private Sector, World Bank Group, [www.worldbank.org/html/fpd/notes](http://www.worldbank.org/html/fpd/notes)

<sup>8</sup> Ibid at par 2.

<sup>9</sup> Ibid at par 5

<sup>10</sup> Ibid at par 7

<sup>11</sup> Cannock, G (2001) Telecom Subsidies: Output-based Contract for Rural Services in Peru, Public Policy for the Private Sector, World Bank Group, [www.worldbank.org/html/fpd/notes](http://www.worldbank.org/html/fpd/notes)

<sup>12</sup> Ibid at par 12

<sup>13</sup> Ibid at par 17

The project was not without operational problems however. Despite meeting deadlines for initiating services in all the nearly 200 localities, the operator failed to meet service reliability targets resulting in fines equivalent to over one and half months revenue. Failed grade of service targets also resulted in delays by Osiptel in the first annual subsidy payment until problems were rectified, which were equivalent to nearly two months revenue.<sup>14</sup>

## *2.2 Telecommunication co-operatives*

Telecommunications co-operatives have been another mechanism of extending 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 those countries<sup>15</sup>. More recently in Bolivia, the fifteen telecom co-operatives 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.<sup>16</sup>

Co-operatives have also contributed to the improved teledensity figures in Poland, which sat at about 3% in rural areas in the 1990s. Following the passing of legislation that allowed independent telephone providers to compete with the state-owned monopoly in the early nineties, a number of co-operatives 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.<sup>17</sup>

“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 home 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 territory and some 300 cottages industries reported opening in on cooperative’s service area.... Perhaps most importantly, the success of building these locally owned and operated telecommunications systems energised the communities to undertake

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<sup>14</sup> Ibid at par14 and 15.

<sup>15</sup> Melody, W (2001) Issues for Consideration by South Africa in Developing the New Policy for Universal Access/Service in a Changing National, Regional and International Environment. (Unpublished)

<sup>16</sup> NTCA and James T (2001) Telecommunications and Integrated Rural Development in South Africa: Telecommunications Cooperatives as a mechanism for Supporting Sustainable Development, NTCA, Arlington (unpublished).

other self-help projects, such as financing and building sewage treatments plants and natural gas pipelines.”<sup>18</sup>

The extensive experience of co-operatives all 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 co-operatives.

The United States based National Telecommunications Co-operatives Association have identified the following as necessary for an enabling environment for co-operatives:

- 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 favourable loans for small operators;
- Affordability of service provision to consumers; and
- Institutional support in areas such as technical support, lobbying, training and financial management.”<sup>19</sup>

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

### *2.3 Build Operate Transfer*

Another successful model used to leverage private investment into public infrastructure, used in Ghana, the Philippines, Thailand and Indonesia is that of the Build Operate Transfer (BOT). In this arrangement 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 terms of the licence require that installation of a certain number of phones within a particular period or to serve a targeted area within a specific period.<sup>20</sup>

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<sup>17</sup> Ibid at p4

<sup>18</sup> Ibid at p5

<sup>19</sup> Ibid at p6

<sup>20</sup> See ITU World Telecommunications Development Report 1998: Universal Access <http://www.itu.int>

Where these have been successful, emphasis has been placed, as in the other models, on the need for well-structured licences and regulations, transparent processes. Several commentators believe that few communities or SMME 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 licences in the longer term without the having the necessary capital or skill to operate the network currently.

#### *2.4 Lessons learned*

The lessons arising from these experiences are that:

- whatever the model used to access under-serviced areas, the models needs to be supported by a clear funding model whether reverse subsidies or low interest loans or government guarantees;
- small amounts of state funding can be leveraged to secure local and international investment in support of access programmes;
- 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;
- there are nevertheless always likely to be areas requiring state support for public access to communications service, however this need for support can be reduced by mainstreaming many areas traditionally not believed to be 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 to penalise non-performance through non-payment; and
- 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.

### **3. From Under-serviced Area Licences to viable operators**

The Under-serviced Area Licences 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 to those areas in relation to the low purchasing power of households located within them.

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 not been beneficiaries of the large-scale empowerment licences associated with the third mobile cellular licence and second network operator licence.

Such licences also have the potential to contribute to job creation, the development of the telecommunications sector and more generally improve the Gross Domestic Product.

While sight of these important public interest objectives should not be lost it is important for decision-makers to sell the concept as an innovative and viable business option. The focus on the public interest objectives has highlighted the policy imperatives of the introduction of these licences rather than on 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 licences are being granted in areas that have traditionally been underserved by the incumbents, because they perceived to be high-cost, low-profit areas. Unlike many other licences aimed at improving universal service, these licences are not being granted exclusively. New entrants will have to compete with a very strong incumbent PSTN, a Second Network Operator (SNO) 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 \$1000 a line. The smallest USAL licensee is likely to require in excess of US\$5 million to capitalise their network and the larger licensees closer to US\$20 million.<sup>21</sup> These figures greatly exceed traditional and legal conceptions of SMME activity.

### *3.1 Funding*

Despite these high costs it appears that there is no clear funding framework attached to the policy to licence under-serviced areas. While the final ITA 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 licence without any state funding arrangements to leverage in support of a business plan.

Indications from across the globe are that such initiatives are only sustainable on the basis of direct or indirect state support. In some countries where such licences or concession have been granted, they have been granted on an exclusive basis. In South Africa the USALs will be competing with the

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<sup>21</sup> Emdon, H (2001) Acacia Submission to ICASA on Draft Regulations for Underserved Areas Licences.

public fixed line incumbent and the highly successful mobile operators. Where licences 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 from there indicates that substantial private capital can be leveraged from such subsidies. This is true of co-operative models in the United States, Latin America and Central Europe where government guarantees and low interest loans have been used.

This use of the Universal Service Fund in South Africa for this purpose - now that the R20m ceiling on the universal service levy has been lifted, and at least R100million should be available - would seem obvious. It 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 under-serviced areas have been well documented.<sup>22</sup>

While the Universal Service Agency has recently indicated that it would be able to fund communities wishing to apply for USALs, there has been no indication of how much or how such funding will take place. This lack of certainty has inhibited the potential of state support to spur interest and leverage private capital.

With no loan guarantees or capital grant subsidies, one must assume that the initiative will be private sector funded through venture capital. Besides the Development Bank of South Africa which has an obligation to consider loans for infrastructural development there appears to be little private investment interest. Without the introduction of the state funding mechanisms mentioned above, how can the investment environment be made more conducive?

The risk profile of these licences could be reduced by demonstrating a clear regulatory framework that is not burdensome on the new entrant with regard to licence fees, reporting requirements and tariff fillings but which will ensure rapid entry into a market that can demonstrate likely revenue streams. With the lack of certainty of this market, cross-ownership rules need to be not too restrictive and reviewable. This is critical for investors, who need to have a clear indication of their options should the operator fold.

In addition a substantively differential termination charge for terminating calls on USAL networks will become pivotal in demonstrating a business case for the USALs.

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<sup>22</sup> Grace, Jeremy, Kenny, Charles, Qiang Christine, Liu Jia, and Reynolds, Taylor (2001). *Information and Communications Technology and Broad-Based Development: A Partial Review of the Evidence*. World Bank. Available at <http://wbln0018.worldbank.org/ict/resources.nsf/eDocsPublications?OpenView>

Regulatory issues critical to the building of a feasible business plan for USAL operators can be summarised 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 between the USAL and PSTN on national long-distance.

### *3.2 Facilities sharing and asymmetrical interconnection*

Facilities sharing will be critical to developing a viable USAL business case both with regard to sharing existing network operators' facilities at reasonable rates but also the sharing of a common platform to provide certain services. As indicated earlier the high entry costs associated with operating telecommunications network, even on the basis of new cost effective technologies, makes network capital costs a major barrier to entry. As the DBSA/IDRC Financial Viability of the Under-served Area Licences Report indicates, the shared platform "converts a major capital cost into an incremental capital cost and incremental lease cost". A shared platform further provides a number of efficiencies resulting from increased scale of operations. Not only does it provide the facilities but the trained personnel to provide all customer activities for the USAL operators.<sup>23</sup>

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 USAL operators are recognised as public operators with the associated benefits of wholesale pricing.

It will also require 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. Traditionally, largely due to monopoly provision and the send 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 pricing charges have become more cost based, the reality of the differential costs in the provision of services has become apparent. In the US, recognition of this has long been evident in the asymmetrical charges between major centres and more remote areas. In Rhode Island for example termination of traffic in rural areas is 38% higher than urban terminations in peak time and as high as 315% higher in off-peak time. In Chile the cost of terminating a call in rural areas is more than 18 times higher in peak time than terminating in a city and nearly 10 times as high off-peak. Even internationally, with the dispute over settlement rates, the ITU through protracted discussions in Study

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<sup>23</sup> DBSA and Acacia (IDRC) study on The Financial Viability of the Under-served Area Licences in South Africa, 2002, p14.

Group 3 has recommended asymmetrical costs associated with terminating international calls in developing countries.

Without cost based asymmetrical interconnection prices a sustainable business case cannot be made for USALs. A financial viability study of the Under Serviced Area Licences in South Africa concluded that the 30% proposed in the draft regulations proposed by the regulator would compromise the viability of the USALs and that the differential would need to be at least 70% for the USAL to be viable.<sup>24</sup> 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 the USAL will survive will be to control its costs by minimising 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 it will presumably have some roll-out undertakings in order to have won the licence. 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 the new entrant to reduce origination prices in order to compete with the incumbents, which should create greater demand for their services, permitting greater rollout and creating more revenues, which provides a virtuous cycle of sustainability. Price competition results in faster rollout. Origination price competition in Morocco's mobile duopoly led to an 1800% a year growth with over 3 million new customers (over which over 2 million were new incumbent subscribers).<sup>25</sup>

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

The matter is of such critical importance that the regulator should prepare a default interconnection agreement in case of any delay in the negotiation process with incumbents.

Although not permitted by the legislation, direct access to the international gateways, could have bolstered the viability of the USAL, especially with an asymmetrical termination charge for international calls terminating on their networks.

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<sup>24</sup> DBSA/IDRC submission to ICASA public hearings on Supplementary Interconnection Guidelines for Under-service Area Licences.

### *3.3 Ownership and control*

Ownership restrictions, while understandable again from a public interest point of view and facilitating the entry of an increased number of players, again has 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 licences 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 licence and could not be justified in terms of the potential market in each area. If ownership rules are going to restrict ownership and control to one or two licences with minority ownership in one or two more, 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.

### *3.4 Licensing process*

While the viability of these licences might be regarded questionable by industry pundits, for many SMMEs and other interests in rural areas these licences present once in a life time opportunities and with people likely to be putting their personal wealth on the line, the licensing process needs to be as simple, predictable and incontestable as possible.

An excellent case study in this regard is provided by the GSM licence awarded in Morocco in 1999. US\$1.1 billion was paid for the fifteen-year licence to operate under ‘relatively unfettered competition’.<sup>26</sup> One of the highest fees per capita ever paid for a mobile cellular licence has been attributed to the leadership, clarity, transparency and lack of subjectivity in the process.

To ensure that the licence award process is as objective as possible and that the terms of the licence are clear and unequivocal, the rights and obligations of the licensee, together with the undertakings made against the evaluation criteria, should become the terms of the licence.

Drawing on the Moroccan experience, but accounting for local policy, the licence could consist of three areas to include the special requirements of South African policy – the licence description, the rights attached to that and the obligations.

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<sup>25</sup> Samarajiva, R (2001) Presentation on Interconnection at LIRNE/LINK Telecom Reform Executive Training course in Johannesburg, South Africa.

<sup>26</sup> Wellenius, B and Rossoto M (1999) Introducing Telecommunications Competition through a Wireless Licence: Lessons from Morocco, *Public Policy for the Private Sector* at [www.worldbank.org/html/fpd/notes/](http://www.worldbank.org/html/fpd/notes/) For detailed account see ITU (2001) Effective Regulation Case Study: Morocco at <http://www.itu.int/ITU-D/treg/>

### 3.4.1 Rights

The rights in terms of the South African law would 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 to provide subscribers with services in accordance with the terms and conditions of the licence and limited to the geographic area to which the licence applies.

While from the point of view of providing as few barriers to entry for this type of licence one would ideally wish to have no licence restrictions at all 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.

Technology should not be prescriptive, but should be able to offer subscribers all the services listed above, 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 business plan.

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

### 3.4.2 Obligations

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

The bidding for the licences should take the form of a least subsidy auction, whereby the applicant that demonstrates that he is able to provide the service most cost effectively and therefore requires the lowest or no subsidy, wins the bid. Payment should be made incrementally in order 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 be required in the bidding process to commit to a ceiling for tariffs within the first five years, which should become a condition of the licence.

They should be exempt from licence fees until they become profitable or not within the first five years.

### 3.4.3 Evaluation criteria

The evaluation criteria to be applied by the regulator in assessing the bids generally arise from the Objects of the Telecommunications Act as amended and associated regulations but their weighting will be critical to the success of the licences.

A standard requirement of most applications is that the entity provides an operational description and its business plan. This should be used however only to allow the applicant to demonstrate certain threshold competencies required to operationalise the licence and for the coherence of the bid as a whole to be considered. Other than disqualification for failure to meet minimum informational and legal requirements, this component should not be evaluated directly. Seldom do serious competitors declare the 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 they qualify for the licence in terms of S40 (1) and (2) (a) of the Act both with regard to the participation of small business and historically disadvantaged individuals, especially women.

A critical criterion should be the applicant's commitment to roll-out targets achievable within the first five years of operation and the technological means to achieve their commitments. These 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.

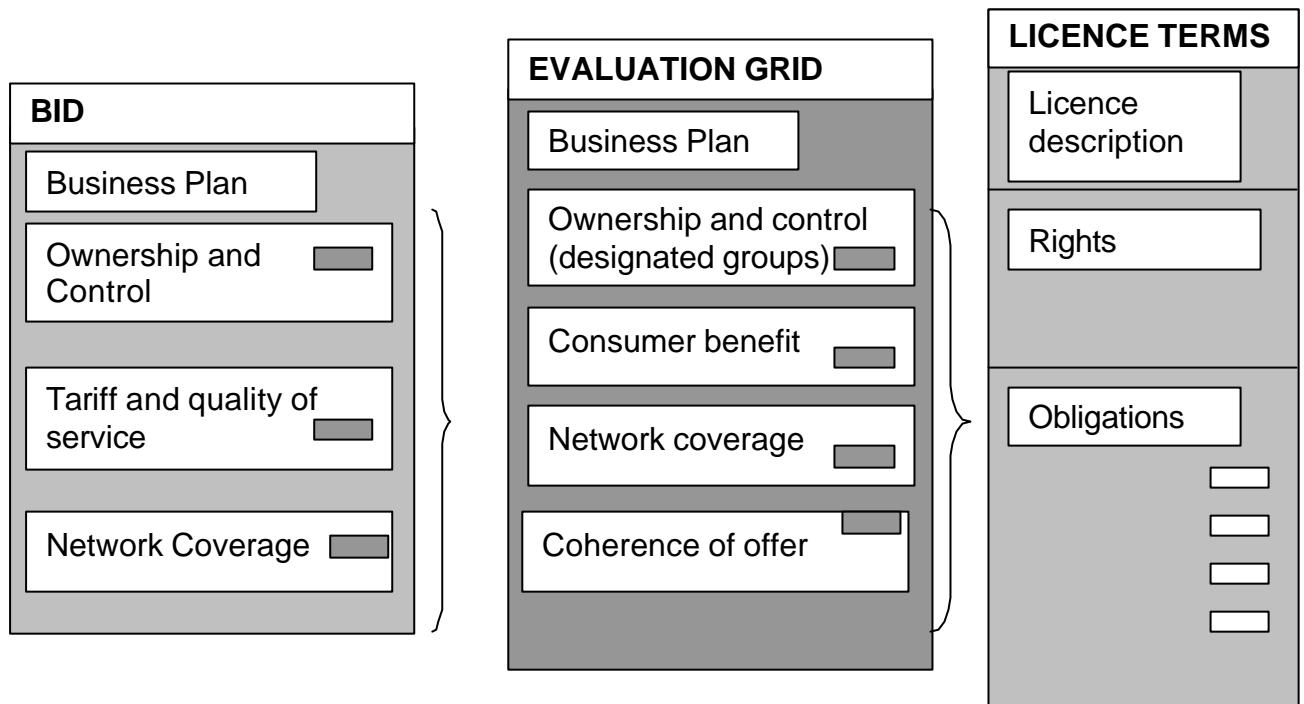
Another important criterion is the applicant's commitment to affordable tariffs and quality of service. The regulator should be looking for a realistic commitment to an annual price ceiling over the first five years and use that as a criteria in consideration of consumers.

Finally, a criterion such as "coherence of the offer" would allow the regulator to use some discretion in determining the feasibility of the proposal. For example, are commitments towards rapid network expansion supported by intended revenue streams or loans, or how low tariffs are going to be achieved in relation to network expansion undertakings.

Using these simple criteria and the process by which the quantitative commitments of the applicants are assessed against the limited criteria in order to determine the outcome of the award, the licensing

process can be kept relatively simple and incontestable. These undertakings then become the terms of the licence, requiring very little further negotiation with the regulator.

This simplified process could be reduced to a bid template that is completed and translated directly into an evaluation score and which then directly provides the terms and conditions of the licence.



#### 4. Conclusions

The decision to allow the entry of small-scale operators into the market represents a window of opportunity in South Africa. This window however is open only for a period of time and the opportunity will not be realised if the conditions are not created to promote the viable entry of these high-risk operations. The entry of multiple smaller players in the market under favourable regulatory and business conditions has the potential to fulfil a number of public interest objectives and invigorate the industry.

It could result in the provision of services to those currently without services, provide choice to customers and could even drive down prices to more affordable levels, all with the associated multiplier effects on the communities reached. It has the potential to result in innovative business models, alliances and partnerships with existing operators and businesses. It could stimulate the growth of regional ISPs and should result in other business stimulation and job creation.

All of this will depend on the development of a licensing and regulatory regime that is 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, 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 be able to make effective business cases. If the historically disadvantaged beneficiaries of these licences and other SMMEs kept out of the telecom industry so long are not to be set up for failure, the licensing regime should be made as certain and attractive to investors as possible. This means providing in advance of the licensing process guarantees that the regulator will act swiftly and effectively to ensure the new entrants 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 recognises the higher cost of terminating services in lower density remote areas. Termination charges should not be regarded as subsidies. They are cost-based and simply reversing a discrimination by allowing for the same treatment for USAL as bigger operators receive.

Besides the differential between urban and rural termination charges realising 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 will result in increased revenues to further expand the network. This may also allow the development of a range of associated business opportunities that leverage the differential in the terminations charges.

Besides these upfront guarantees that will facilitate local operators securing investment and technology partner, the regulatory environment for these operators should be flexible with as low transactions costs as possible. Their reporting mechanisms should be kept as simple as possible and should be primarily focused on the new operators meeting their roll-out targets. Following an initial price-ceiling offer in their licence they should not be required to file for any tariff changes below the ceiling.

With regard to the network operations the licence and regulatory regime should facilitate as high a degree of collaboration between USALs as is needed to aggregate their services and facilities, in order to build their business case and be competitive in their districts. Ideally, the offering of these licences should be supported by a funding model allowing either for government subsidies, awarded through some form of competitive process, or no-or low interest state loans. Evidence from elsewhere in the

world indicates that these are key to leveraging further investment far in excess of the initial amounts provided by the state.

Finally, while those immersed in economics of the sector might steer clear of these licences, for many communities, SMMEs and individuals, this represents a once in a lifetime opportunity that people may be staking their personal assets on. There can only be a certain number of winners for these licences; there will be several losers. While applications fees should demonstrate serious commitment, they should be kept low enough so that unsuccessful applicants do not suffer significant financial losses. As is discussed above, 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 will come under even greater pressure from various interests during the licensing process and subsequently when unsuccessful bidders count their losses. It is critical therefore that the licensing processes be kept as simple and objective as possible. These licences are of a particular kind, they should not be treated in the same way as the major national licences. Keeping them simple and incontestable will also ensure that these licences are less likely to be delayed by lengthy decision-making processes or legal reviews. The sooner they come on board the sooner they can make the significant contribution they have the potential to make.

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