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# Managing Universal Service Funds for Telecommunications

An ASEAN Manual for Output-Based Aid

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# Executive Summary

New technologies and competition in markets for basic telecommunications markets have led to new models for universal service. Whereas the old models were based on build-out requirements in a monopoly environment, the universal service funds of today are technology neutral, competition friendly, rely on the private sector for decisions on technologies, and are far more efficient at targeting unprofitable parts of the network in need of subsidies. These programs also adhere to the language of the WTO Reference Paper on Telecommunications regarding universal service.

The new models involve universal service funds and are sometimes characterized as output-based aid or smart subsidies. By 2005, seven developing countries had licensed rural operators using such funds and several others were at various stages of planning, had held competitions, or were implementing pilot projects. In addition, several ASEAN countries now have legislation for universal service funds and are at various stages of implementation

For fund administration, governments establish autonomous agencies with many of the characteristics of best practice independent telecommunications regulatory agencies. These characteristics include independence from day-to-day political pressures and the influence of operators, and transparent implementation of universal service programs. Implementation often requires amendments to telecommunications legislation and separate authorizations to tax and spend money on universal service projects.

A key element of best practice universal service programs is the use of minimum subsidy auctions to allocate subsidies. Auctions ensure that only the unprofitable parts of the network are subsidized, have led to subsidies that are less than 50 percent of the maximum subsidies estimated by fund administrators, and leverage additional capital into telecommunications. Although it is preferable to fund universal service programs from the government budget, most countries rely on small levies of less than one to two percent of operator revenues, net of intercompany payments.

Program plan begins with a diagnostic study, which also helps determine the maximum subsidy for each universal service project. Winning bidders are granted a non-exclusive license to provide service in their project area and are automatically allowed, but not required, to provide enhanced services, such as domestic and international long distance service. Interconnection to the public services telecommunications network at cost-based rates is essential to the program's success and is a requirement of the WTO Reference Paper. Many countries apply higher interconnection and retail rates in universal areas than elsewhere because of the higher costs.

Universal service funds are typically used to provide basic telecommunications service in high cost areas where incomes and population densities are so low that service will not be provided under even the most efficient market conditions. With the declining cost and new business models that use the advanced digital features of cellular technology, many markets are receiving service without the aid of subsidies. The access problem has been solved in many urban areas and is being solved at an accelerating pace in rural areas. One result is that many universal service programs have been expanded to include Internet points of presence. Another is that many of these new developments are particularly pro-poor. New developments in Wireless Fidelity (WiFi) and other broadband technologies may lead to even greater advances in the future.

# 1. Why Universal Service?

Modern telecommunications networks are fundamental to ASEAN's economic integration and to the overall economic development of Member States. Telecommunications enable faster and cheaper transfers of information, reduce costs, and can expand markets. Many modern supply-management techniques now depend on ubiquitous telecommunications networks with high bandwidth, and many developing countries are developing niche export sectors that rely on such networks. Telecommunications also provide new possibilities for offering education, health, and other social services in both urban and rural areas. They can enhance social cohesion and political stability.<sup>1</sup>

In spite of the benefits, developing countries often invest far too little in telecommunications.” One reason is that developing countries are caught in an income-investment trap. Low per capita incomes means consumers spend little on telecommunications. Low consumer spending means that domestic funds for investment are lacking. In ASEAN, this is reflected in widely divergent penetration rates for fixed line telecommunications, which vary from 0.2 lines to 42.2 lines per 100 people, and even more divergent international Internet bandwidth, which varies from 1 bit to 7,000 bits per person across Member States (Magiera 2007). The overall effect is a “digital divide” between poorer and richer nations.

## **ACHIEVING UNIVERSAL ACCESS IN THE ASEAN REGION**

To narrow the digital divide, ASEAN's developing countries must find alternative sources of investment to build-out their networks. Since telecommunications is no longer a “natural monopoly,” one way to do this is to lower regulatory barriers to entry and to allow competition to develop. The explosive growth of mobile communications exemplifies how open markets and rising competition can attract investment and raise penetration rates. In 2000, there were 4.3 mobile subscribers per 100 people in ASEAN; by 2005, there were 25.9 per 100 (Magiera 2007). In many countries, the access problem has been solved in urban areas and is being solved at an accelerating pace in rural areas (ITU 2003).

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<sup>1</sup> Per capita income growth is more than 0.5% higher for each 10-percentage point increase in the number of people with access to telephones (Waverman 2005). Gains accelerate as networks expand since every additional subscriber benefits more and more existing subscribers.

## **ASEAN FRAMEWORK AGREEMENT ON SERVICES**

To attract investment, ASEAN is taking steps to eliminate trade barriers in priority service sectors with the ASEAN Economic Community. Communications is one of the priority sectors. Steps include eliminating restrictions on overseas consumption and cross-border supply of telecommunications services by 2010, and raising the minimum allowable foreign equity limits in telecommunications companies to 51% by 2008 and 70% by 2010. Member States have also agreed to improve their regulatory frameworks for telecommunications by adopting the WTO Reference Paper in full. The Reference Paper is annexed to the WTO's Basic Agreement on Telecommunications, and lays out principles on transparency and conditions for competition.

## **SIEM RIEP DECLARATION ON UNIVERSAL ACCESS**

In addition to liberalization and regulatory reform, many countries have programs devoted to universal service. With this in mind, ASEAN Ministers for Telecommunications and Information Technology, at their annual meeting in Siem Riep, Cambodia in August 2007, declared "Enhancing Universal Access of ICT Services in ASEAN: ICT Reaching out to the Rural Areas" as their theme for the following year (ASEAN 2007).

The Declaration recognizes the importance of universal access to ICT services for the people of ASEAN, particularly those living in remote rural communities (Appendix A). It commits ASEAN Member States to accelerating the development of ICT services and ICT content. In particular, states agreed to strengthen or establish programs for enhancing universal access. The programs are to provide equal access to all at affordable cost, be based on fair and healthy competition, and be technologically neutral. The Declaration also mentions contributions to universal service funds. Such funds, which have been established in numerous countries in ASEAN and elsewhere in recent years, are used to extend basic telecommunications services and the Internet into rural areas.

To ensure sound management of such funds, the Declaration calls for a "best-practices handbook" on universal service programs and principles for effective management, disbursement and monitoring of funds. In Chapter 2 of this manual we describe the new types of programs that governments are using to achieve goals for universal service, and in Chapter 3 present best practices for preparing competitive bidding on output-based aid or subsidy programs. Chapter 4 describes best practices in establishing legal and administrative frameworks for universal service funds. Best practices for implementing minimum subsidy auctions and aid from universal service funds are presented in Chapters 5 and 6.



## 2. New Models for Providing Universal Access

### **NATURAL MONOPOLY AND BUILD-OUT REQUIREMENTS**

Telecommunications was long considered a natural monopoly because of the high capital cost of network build-out and because of substantial returns to scale. In this monopoly environment, many developed countries used mandatory build-out requirements to achieve equity goals and to extend access into unprofitable areas. The telecommunications monopolist was required to use excess profits from its profitable networks to subsidize the unprofitable ones.

Build-out requirements have become increasingly unsustainable in competitive environments. Among the many issues are:

1) Historically, build-out requirements were imposed as a condition of license and usually relied on revenues from international and long distance services to subsidize unprofitable local services. However, competition, new technologies, and international accounting rate reform have eroded these subsidies in most countries.<sup>2</sup> One result is that telecommunications is no longer considered a natural monopoly.

2) Build-out programs are inherently unsustainable since companies first build-out profitable segments while ignoring or delaying build-out of segments that are to be subsidized. Eventually, competition from new entrants in mobile and fixed line services reduces funds available from profitable segments. Even in countries that have managed to maintain high, uncompetitive prices for international and long distance services, build-out programs are being called into question since such countries have some of the lowest teledensities in the world (Module 6, Infodev, 2002).

3) In effect, mandatory build-out requirements are a tax on operators and do not lead to an overall increase in telecommunications investment. Governments tax one part of the telecommunications network to provide investment and operating funds for another. But it is unlikely that the telecommunications network can generate enough tax revenues from within itself to overcome the low penetration rates in low-income developing countries. As mentioned earlier, developing

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<sup>2</sup> International accounting rates are the basis for international long distance charges. Recent reforms have moved accounting rates towards costs and thus eliminated the ability of countries to use high international rates to subsidize local telephone rates.

countries are in a low income–investment trap. To escape from this trap, alternative sources of investment funds are necessary.

4) The taxes inherent in build-out requirements lack transparency. At one extreme, the entire cost of the build-out, including most operating costs, might have to be subsidized by the profitable parts of a network. At the other extreme, the build-out might be profitable enough to occur without a subsidy. Since the tax incidence of the build-out depends on so many different factors, it is extremely difficult to estimate the “implied” tax and to ensure that it is levied equally on all operators. This can also stifle reforms since some companies may find it easy to meet their requirements and thereby argue against reform, while others may find it impossible to meet their requirements.

5) The taxing mechanism is itself inefficient when compared to more targeted programs. Poor workers without phones are forced to pay higher long distance rates in order to subsidize higher income consumers with phones. For subsidized parts of the network, all users benefit from the subsidy even if they can afford to pay the full economic cost.

## UNIVERSAL SERVICE FUNDS

As a result, many countries are phasing out build-out requirements and replacing or at least supplementing them with more efficient targeting mechanisms, known as universal service funds, output-based aid, and smart subsidies. Often used interchangeably, these three terms each refer to a particular element of a universal access program.

- Universal service funds are set up by governments to provide subsidized finance for universal service programs.
- Output-based aid is the provision of subsidies on the basis of performance or output.
- Smart subsidies target only those segments of the market that would not be profitable under efficient market conditions, and are the minimum necessary to provide service to these markets. This usually means that the subsidies are allocated using least-cost auctions (de Silva 2006). Under a least-cost auction, the operator which bids the lowest subsidy is granted the right to provide service in a universal service area.

Best practice universal service programs usually have all these elements. Such programs are intended to foster competition and are often administered by bodies specifically set up to handle universal service funds. Monies for the funds may be obtained from a variety of sources as discussed in Chapter 3, but usually are obtained from fees or levies on telecommunications operators (See Table 1).

## Characteristics of Best Practice Universal Service Funds

In the monopoly environment, countries planned nearly every aspect of universal service. This included the identification of service areas, the selection of technologies, and the selection of companies. In the case of a pure monopoly, the single company was often state-owned, and thus under the control of the communications ministry.

Today's universal service funds are technology-neutral, pro-competitive, rely on the private sector to decide on major technologies, and are far more efficient in that they target only unprofitable parts of the network. Modern universal service programs leverage as much private capital as possible in building out networks, do not substitute for private investment, do not discriminate among operators, and abide by the WTO Reference Paper.

**Technology-Neutral.** Technological neutrality is critical to program success. Programs that prescribe technology are prone to getting it “wrong” when technology is changing rapidly. Early on, public phones using fixed line technologies or satellite were subsidized in remote areas. Many of these same areas can now be reached with cheaper cellular technologies and some are profitable even without subsidy. And in the future, low-cost wireless technologies, such as WiFi, that allow individual, unlicensed networks to develop and then mesh might make cellular obsolete. Very small subsidies could jumpstart this process (see Implications of Technology Trends, below).

**Pro-Competition.** Well-designed universal service programs do not discriminate among operators or favor an individual operator. They ensure the most efficient use of public resources while leveraging the largest amount of private sector funding possible. Least-cost subsidy auctions offer several advantages. First, they help ensure that only the unprofitable parts of the network are subsidized. If a particular project area is profitable, then operators should bid zero subsidy for the right to build in that area. Second, government officials may have little idea of the actual cost of building out networks in rural areas. In the Latin American projects of the 1990s, for example, the subsidies granted were often less than 50 percent of the maximum estimates of fund administrators. Third, auctions use subsidies as incentives to private telecommunication operators and are one way to leverage additional capital into telecommunications. During the first auctions in Chile, for example, \$6 of private investment occurred for every \$1 in subsidy (Sepulveda 2002). Thus, they are one way for developing countries to attract capital into the sector.<sup>3</sup>

**Consistent with WTO Reference Paper.** These above characteristics are also consistent with the requirements of the WTO Reference Paper on Telecommunications. All ASEAN Member States have agreed to adopt the Reference Paper in full by 2009. The Paper states that “Any Member has the right

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#### Access Programs of Chile and Peru

In the 1990s, Chile and Peru established universal funds to subsidize telephone access in rural areas. Chile's goal was to provide service to 6,000 localities between 1995 and 1999 using a program financed by the national government budget. A basic premise of the programs is that access is a social policy best financed by the government, not operators and subscribers. Peru's goal was to provide service in 4,500 localities between 1998 and 2004 using a program financed by a one percent levy on the gross revenues of the telecommunications sector. Both programs used auctions to determine who obtained subsidies. After meeting program goals, both countries broadened their programs to include telecenters with internet access (Infodev, Module 6, 2002).

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<sup>3</sup> When universal service projects are financed by a tax on operators or when auctions are won by existing companies, it is not clear how much new capital is being brought into the sector. The programs may simply redirect investment from areas favored by operators to areas favored by fund administrators.

to define the kind of universal service obligation it wishes to maintain. Such obligations will not be regarded as anti-competitive per se, provided they are administered in a transparent, non-discriminatory and competitively neutral manner and are not more burdensome than necessary for the kind of universal service defined by the Member.” Competitive neutrality implies that universal obligations should not result in discriminatory treatment of one operator vis-à-vis another (WTO Reference Paper).

### **Examples of Best Practice Funds**

Universal service funds originated in Latin America during the 1990s and are now fast becoming integral to universal service programs elsewhere. By 2005, seven developing countries had licensed rural operators using universal service funds and several others were at various stages of planning or implementation (Intelecon 2006). India, Nepal, and Uganda had held competitions; Mongolia and Nigeria were implementing pilot projects; and Russia was bringing a universal service fund into operation (See Table 1). In addition, several ASEAN countries now have legislation for funds and are at various stages of implementation.<sup>4</sup> These include Brunei, Cambodia, Indonesia, Thailand, and Vietnam. Malaysia and Singapore also have universal service programs, but because of the developed state of their communications infrastructure, their programs are designed to meet policy objectives different from those discussed here.

Universal service funds are used for two types of programs: (1) the provision of basic telecommunications service and Internet access; (2) e-development, including multipurpose telecenters, ICT training, e-education, and business incubators. Basic telecommunication projects tend to be larger and use least-cost auctions to allocate subsidies (Intelcon 2005). E-development projects, on the other hand, are usually funded by grants. A fund administrator specifies program objectives and then solicits proposals that are evaluated using a “beauty contest.”

The universal service programs of the 1990s focused on fixed line technologies. Declining costs for mobile telephony have made it the preferred technology in many countries, especially developing countries with no legacy wireline network in rural areas. In addition, more and more rural areas can now be reached using wireless. As a result, some universal programs are being adjusted to include Internet access as part of the universal service. An example is the universal service fund in Uganda (Intelecon 2005).

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<sup>4</sup> Based on papers presented at the ASEAN Workshop on Universal Service Obligation, Phnom Penh, July 31, 2007.

Table 1  
*Examples of Universal Service Funds*

Country	Status	Funding Source	Fund Disbursement
<b>L A T I N A M E R I C A</b>			
Argentina	Planned	1% of operator gross revenues (option to build-out)	Government
Brazil	Operational	1% of operator gross revenues from telecom services	Competitive bidding, but monies not yet allocated because of legal issues
Chile	Operational	Government budget	Competitive bidding
Columbia	Operational	5% of national and long distance revenues plus funds from license fees	Competitive bidding
Dom. Rep.	Operational	2% of operator levy	N.A.
Guatemala	Operational	Spectrum auctions	Competitive bidding
Nicaragua	Operational	2% operator levy	N.A.
Peru	Operational	1% of gross revenues of all operators and CATVs	Competitive bidding
<b>A F R I C A</b>			
Burkina Faso	Operational	2% of service provider revenues	N.A.
Ghana	Planned	1% of fixed operators' net revenue	N.A.
Kenya	Planned	Government transfers and operator levies	N.A.
Mozambique	Planned	N.A.	N.A.
Nigeria	Planned	Operator levy	Competitive bidding
South Africa	Operational	0.17% of revenues of all operators	Telecenters/areas of need
Tanzania	Planned	Contributions by communications or postal licensees not to exceed 4.5% of revenue	N.A.
Uganda	Operational	1% levy on operators, postal service, couriers, ISPs, etc.	Competitive bidding
<b>A S I A</b>			
China	Planned	N.A.	N.A.
India	Operational	5% of all operator revenues	Competitive Bidding
Indonesia	Planned	0.75% tax on the revenues of operators, net of bad debts and interconnection fees.	Competitive bidding, levy is being collected but not yet distributed because of legal issues.
Malaysia	Operational	6% of weighted revenue from certain services of fixed and mobile network operators.	Competitive bidding.
Mongolia	Planned	State budget, license fees, spectrum auctions, 1-2% of operator taxable income	Competitive bidding
Nepal	Operational	2% levy on revenues of incumbent, ISPs, and mobile operators	Competitive bidding
Sri Lanka	Planned	Levy on international calls	N.A.

*N.A. = Information Not Available.*

*Sources: Intelecon (2006), Dymond (2007).*

## IMPLICATIONS OF NEW TECHNOLOGIES

Although the government should rely on the private sector for critical decisions regarding network design and technology, it must still establish the goals of universal service programs. The government may also need to evaluate technologies and other aspects of the program to determine overall feasibility and to place limits on subsidies. Therefore, administrators should have a good grasp of market trends. For example, the tremendous growth of wireless technologies has made universal service goals far more attainable. It is no longer true that providing telecommunications in poor urban and rural areas cannot be profitable without subsidies.

Historically, providing universal access in rural areas was impeded by the high cost of equipment (e.g., longer cables) and installation (e.g., due to poor roads), and by the weak revenue base that results from low incomes and population density in rural areas. As a result, revenues could not offset costs. But some of these problems have been overcome with cellular technologies. The cost of equipment has declined and costs per subscriber declines continually as more subscribers share the service of the cellular base station. Cellular services can also be had at much lower prices than fixed line services because of falling handset prices, the low cost and ease of obtaining prepaid cards, and the availability of new types of services, such as short message service (SMS). In addition, the minimum monthly number of calls needed to maintain a subscriber identity module (SIM) card is often cheaper than monthly rental of a fixed line (Intelecon 2005). And in most countries, cellular services have developed under competitive conditions with limited regulation. Providing service in rural areas is no longer just an obligation, but a profitable business opportunity.

Cellular technology also provides an opportunity for additional incoming traffic to pay for network build-out. Examples are urban customers who are traveling in rural areas or wish to call their rural relatives. Technical features, such as caller identification, beep and call back, and SMS can also be used to transfer costs to higher income urban consumers.

Moreover, cellular technology has spurred development of “shared-access” business models that raise demand for services and the revenues generated in rural areas. Under these models, demand is aggregated across more people who do not all have to own a handset. As a result, operators need issue fewer telephone numbers and SIM cards. Examples of shared-access models include individual entrepreneurs reselling airtime, such as the “umbrella” people of Nigeria or village phone operators of Bangladesh,<sup>5</sup> mobile franchise businesses, and networks of small entrepreneurs (Intelecon 2005).

Many shared-access models are financed by separate programs of microcredit, as in Nigeria, Bangladesh, and Uganda. For example, the Grameen Village phone model of Bangladesh integrates rural telephone services with rural-based microfinance that provides loans for mobile

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<sup>5</sup> Refers to entrepreneurs in Nigeria who set up a table, chairs, and umbrella on the street and resell GSM airtime (ITU 2003).

phones and supporting equipment. This model is being replicated in several other countries in Asia and Africa. In addition, telephone operators themselves have established new franchise packages of Global System for Mobile communications (GSM) desk sets that can be located in kiosks or small stores, or operated by individual entrepreneurs reselling airtime in restaurants or shops. These new models allow low-cost calls, receiving of messages, and call back from urban customers, and are therefore particularly pro-poor (Intelecon 2005).

In addition to business models for reselling airtime, other models increase demand by offering new types of services using mobile phones. These include mobile banking services that tie the SIM card to a bank account number and allow cashless transactions in rural areas that do not otherwise have credit card or payment infrastructures. Interestingly, it is developing countries that are driving these innovations (Bell 2006).

Finally, inexpensive and easy to use subscriber equipment has made it possible to use WiFi to widen access to broadband Internet. Just as with cellular, new business models may also develop for this technology. For example, small unlicensed WiFi operators could run overlapping networks on the same frequencies for free. As their numbers increase, so also does the overall capacity of the network since each new provider increases the number of pathways between any two points. This enables the expansion of networks to rural areas by the activities of the community itself (Negroponte 2002).<sup>6</sup>

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<sup>6</sup> At the time of writing, new models offering broadband services using WIMAX are being developed and implemented.





# 3. Output-based Aid Programs and Competitive Bidding

## DECIDING ON FUNDING SOURCES

Funding sources for universal service programs include the government budget, levies on the revenues on telecommunications operators, licensing and spectrum fees, and fees on subscribers. In recent years, donors have also contributed to such funds.

Since most universal service programs have underlying social objectives, the first-best policy is to fund universal service out of general tax revenues.<sup>7</sup> Social objectives include social cohesion, public health, the provision of safety and emergency services, and achieving greater equity by bringing telecommunications services to the poorest members of society. As such, universal access should be part of the government's social policy, not an obligation of telecommunication carriers. It seems inconsistent to say that universal service is a major goal of policy, then tax operators to fund build-out programs. Furthermore, taxing them to build-out telecommunications may not have much impact on access since there is not enough money in the sector. The tax might simply shift investment from one part of the network to another.

Nevertheless, most countries fund their universal service programs by taxing operators. When operators were monopolists and charged excessive prices in some markets, taxation seemed justified. Now, the justification sometimes put forward is that telecommunications networks give rise to externalities that the universal service provider does not always capture from one new subscriber. Some of these benefits occur to other providers whose customers can now connect to the USO network (Xiaochun He 2005). In such cases, taxes should only be applied to the basic network services where the externalities might occur.

To prevent double taxation, the revenue base for taxation should be net of intercompany transfers, like interconnection fees and payments for leased lines. The government should also ensure that levies are equal for all operators and are technology-neutral. Using spectrum fees to fund universal service programs is not technologically neutral since spectrum is an input for many, if not most, of the technologies now being used for telecommunications build-out. Thus, funding universal service from spectrum fees would represent a tax on the very technology now often used for rural build-out.

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<sup>7</sup> Chile funds its program from the general government budget.

## **SETTING TAX RATES FOR UNIVERSAL SERVICE FUNDS**

Ideally, governments determine the amount of funding needed to meet targets for universal service and then set tax rates accordingly. Especially when fixed wireline and satellite were the only technologies for extending service into rural areas, this was not feasible. The taxes needed to raise teledensities to any where close to universal access would have been prohibitive. Instead, tax rates for most programs are set politically and at fairly low levels (See Table 1). Low rates are necessary to garner the support of operators, and are advisable when governments are just beginning to implement universal service funds. In some programs, monies coming into the fund accumulated for several years before universal service projects were implemented. Most countries have set levies at one to two percent of operator revenues.

## **DECIDING WHAT TO INCLUDE IN UNIVERSAL SERVICE PROGRAMS**

Nearly all universal service programs make access to basic telephone service a key component. Here, access is defined as a public telephone of a certain quality and reliability within reasonable proximity of the local population. It may also include certain public service enhancements, such as emergency calling and directory assistance. Other service enhancements, such as SMS and voice mail, increase revenue and thus the attractiveness of rural build-out, and should help reduce the need for subsidies. Such enhancements should be encouraged and should be automatically licensed, but would not be required as part of a universal service program.

As noted earlier, Internet service is now being included in many universal service programs. However, access may be defined differently than for basic telephone service. Internet is often beyond the means of rural households that lack computers, electricity, and money to pay for high-cost bandwidth. As a result, Internet access programs have aimed to develop Points of Presence (POP) in rural areas with high concentrations of potential users and where profit-oriented Internet cafes are more likely to develop. Uganda's program, for example, subsidized high-speed wireless access using existing cell towers in district centers. Anyone within line of sight of the POP can have high quality Internet access at the same price as in the capital city Kampala (Intelecon 2005).

Early universal service programs targeted wireline build-out and included the cost of a public phone. This is likely to remain necessary when wireline and satellite are used for build-out. But in many rural areas now within range of a cellular signal, the problem is lack of income to purchase end-user equipment, not infrastructure. In such cases, government programs should focus on overcoming income constraints rather than infrastructure. Recent, multiples access business models can be used to finance end-user equipment. Examples are Grameen Village Phone in Bangladesh (Grameen Technology Center 2005) and the rural phone packages in Uganda (Intelecon 2005). The latter provide loans covering phones, power sources, and equipment to boost signal strength.

The ICT action plans of many countries include programs to develop e-government and e-services in education and medicine. Access to communications infrastructure can be critical to such services. Thus, the universal service fund can be used to subsidize the roll-out of

infrastructure to rural government institutions involved with these services. It is important, however, to distinguish between underlying infrastructure and the services themselves. For schools, for example, the universal service program would fund Internet access but not end-user equipment, content, and applications software, which should be funded out of the government budget for education.<sup>8</sup> Achieving consistency in this regard requires close coordination between the fund administrator and officials from relevant government departments.

There has been much government and donor interest in multipurpose community telecenters either under independent funding or as part of universal service programs. Such centers sometimes offer a full range of telephone, computer, Internet, data, fax, and other technical services to local populations. However, programs have for the most part been unsustainable.<sup>9</sup> It is also unclear why universal service programs funded by taxes on operators should be used to finance telecenters.

## **CONDUCTING A MARKET DIAGNOSTIC STUDY**

A diagnostic study of the market aids program planning and the placing of bounds on its cost. On the supply side, the study should identify the number and location of entities lacking access as defined in the program objectives. These are the target areas for universal service. If the program objective is “universal village access to basic voice service”, the study should survey the number of villages without telephones, without access to fixed lines or a cellular signal, and without adequate infrastructure to support a telecommunications network, particularly electricity.<sup>10</sup> For cellular services, the study should also cover the location of base station towers. Finally, the study should determine the types of technologies that might be used to provide services and whether it is feasible to bring cellular or other terrestrial based services to universal service areas. If a terrestrial solution is not possible, more expensive satellite technologies may be necessary.

On the demand side, the study should provide information on the number and location of current subscribers to fixed and mobile networks, household incomes, the portion of household income spent on telecommunication services, and the number and types of businesses and government offices likely to use communications. Often the demand for services is estimated as a simple percentage of household income, but this percentage can vary significantly by type of service and by type of economic activity in a region. For example, financial and trading centers are likely to have a higher demand for communication services as a proportion of their income than farming communities. The fund administrator should also work closely with the government’s statistics bureau to ensure that telecommunications is adequately covered by the national economic surveys. Changing technologies have given rise to new types of data that should be included in surveys, such as expenditures on cellular handsets and on public telephone and Internet services.

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<sup>8</sup> Procurement programs for e-learning and e-medicine with local content can also be used to promote the domestic applications industry.

<sup>9</sup> Colombia successfully developed a telecenter. It had already implemented a program for basic services before moving to end-user centers. One reason for success is that Columbia targeted the development of hundreds of centers, thus allowing operators to achieve economies of scale.

<sup>10</sup> Villages with television sets are sometimes used as a proxy for electricity.

## **ESTIMATING MAXIMUM SUBSIDY AND RANKING PROJECTS**

Information from the diagnostic study can also be used to estimate a maximum subsidy for each universal service project. The fund administrator can use this information for planning purposes and include it in request for proposal in order to help potential bidders decide whether or not to participate in the competition.

For a given mandatory service in a specific geographical area, the maximum subsidy is the net present value of the difference between costs and revenues over the project period, discounted using the prevailing cost of capital. Costs can be estimated using an engineering cost model, or from national or international benchmark rates from similar regions. For a simple public phone with fixed line, revenues are the expected number of outgoing and incoming minutes multiplied by the relevant price.<sup>11</sup>

In the past it was probably far easier to estimate maximum subsidies for wireline or satellite technologies. Now, fund administrators have more technologies to consider and costs may depend on specific elements of a technology. For example, the cost of cellular service, per subscriber, will depend on the frequency band used to provide the service as well as the terrain surrounding the cell towers. Revenue estimates are also more complicated and should take account of the many features of digital technologies that enable different types of business models to develop. The roaming features of cellular are also likely to lead to increased incoming calls to the universal service area.

Projects with costs less than revenues need not be subsidized and should not be funded by the universal service fund. Subsidy bids for such projects would in any case be zero. Ideally, universal service funds should only subsidize projects that the private sector finds unprofitable without a subsidy, but which have a positive social value. Projects with a social return less than zero should not be financed (Wellenius 2002). Projects might also be ranked according to those with the highest value to society. Because of the difficulties of providing reliable estimates of net social value, most administrators are likely to rank projects based on a couple of key economic indicators, such as localities with population above a certain threshold, or on other qualitative and political grounds.

## **DETERMINING EXCLUSIVITY AND BUILD-OUT OBLIGATIONS**

Many countries introduce universal service funds during periods when incumbent operators still have exclusive rights to the national market, or when other types of universal service obligations are in effect as part of license. An incumbent with an exclusive license could argue for compensation when the universal service program opens the market to new competitors. Compensation would be measured by profits that will be lost as a result of licensing new operators. The contrary argument is that the geographic areas targeted for universal service are by

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<sup>11</sup> In Chile, the expected revenues for each location were obtained by multiplying per capita income by the proportion of income people are willing to spend on telephone calls and by the number of people serviced by the payphone. Incoming calls were assumed to be 30% of outgoing calls (Wellenius 2002).

definition unserved. Thus, the value of exclusivity in these unserved areas is zero and no compensation should be necessary.

The most common obligations in existing licenses pertain to incumbents' build-out requirements.<sup>12</sup> Here, the incumbent could argue that it should be compensated for losses resulting from its build-out obligations, or that it not be required to participate in the fund. Indeed, some countries give operators the option of either contributing to the universal fund or rolling out their networks into designated universal service areas.

The contrary argument is that roll-out obligations usually occur in markets where there is market power to set prices above costs. When this is the case, the incumbent is already being compensated for the obligation. When there is no market power to cross-subsidize or when competition is eroding that power, build-out obligations are unsustainable. Universal service funds, on the other hand, are pro-competitive and work best when they are accompanied by other reforms to liberalize the market, such as the elimination of build-out requirements.<sup>13</sup> It is also difficult to ensure that the tax implications of build-out obligations are identical to the tax being levied for the universal service fund.

## Operator Licenses

Licenses for universal service operators will contain the mandatory service obligations in universal service areas, as well as rights to provide enhanced services. In addition, the government must decide whether the licenses will contain the other obligations and fees that normally apply to other operators. These obligations and fees will affect the expected cost and revenues in universal service areas, and thus the subsidies.

Although the government might consider waiving obligations in order to reduce the cost of serving universal service areas and to thereby reduce subsidies, this might create problems in the future as cost-reducing technologies enter the market or as regions develop economically. Providing special considerations to universal service operators might give them an unfair competitive advantage in the future if a universal region becomes economically viable to other operators. It would seem best therefore to require that universal operators follow standard licensing procedures regarding the establishment of a commercial entity, foreign equity restrictions, and licensing fees.

One possible exception is the fee charged for the use of spectrum in universal service areas. Spectrum fees in many countries are set above the cost of administration in order to generate revenues for the government or for other policy purposes. However, these fees are also a policy

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<sup>12</sup> Requirements to build-out into unprofitable universal service areas are in contrast to "use it or lose it" requirements often included with the right to use frequency.

<sup>13</sup> Continued use of mandatory build-out requirements in countries that are moving toward competitive markets with many players can stymie policy reforms. Incumbent operators that have already implemented requirements argue against eliminating obligations for new competitors. They also argue against adopting policies that bring more competition to the market and thus erode their ability to cross subsidize. Examples are cost-base interconnection and reforms in international service that might include VoIP (Magiera 2005).

instrument for universal service. Since the new, low-cost technologies for expanding access are likely to be based on wireless, low fees help promote universal service. Thus, fees for spectrum in universal service areas could be waived, or set at administrative cost. This needs to be reconciled with policy goals that use spectrum fees for other purposes.

A second set of issues concerns the types of services that operators are allowed to offer. To attract bidders and lower the cost of subsidies, operators could be automatically licensed but not required to provide enhanced services and domestic and international long distance in universal service areas, including call origination and termination for national long distance (NLD) and international long distance (ILD), long distance services between any two points in universal service areas, and gateway rights for ILD within designated universal service areas.

### **Operator Exclusivity**

Offering exclusivity in universal service areas might seem like a good way to attract bidders and to lower subsidies. Two possibilities should be considered. On the one hand, if the area is unlikely to attract new competitors, exclusivity will have negligible value and negligible impact on subsidies. This will often be the case since universal service areas are typically high cost with limited revenue potential. On the other hand, if the area is likely to attract competitors, exclusivity will lower subsidies, but only because operators will not have to face competition. So, while the government pays less in subsidies, consumers eventually pay more in higher prices or lower service quality because competition cannot develop. If exclusivity is granted, it is recommended that the period of time be relatively short, such as less than three years.

## **PROMOTING SMES WITH UNIVERSAL SERVICE PROGRAMS**

Countries may sometimes attempt to achieve other policy objectives with universal service programs. An example is to “reserve” the program for small and medium enterprises (SMEs) by excluding incumbents from bidding on universal service areas or by requiring them to collaborate with SMEs. Such policies tend to raise costs and may lead to other inefficiencies. If a government wishes to favor SMEs as providers, it would be preferable to provide direct incentives, such as low licensing fees or a special unified universal service license that allows SMEs to provide any type of network or service in universal service areas with a single unified license. This would also allow ISPs to build network facilities under an ISP license. Another option would be to develop programs for downstream application industries where SMEs may have an advantage.

## **SETTING TARIFFS AND INTERCONNECTION CHARGES**

Tariffs and interconnection charges are two important variables affecting the financial viability of universal service projects and the subsidies needed to support service in these areas. Potential bidders need information on these variables for their business plans. Thus, the government’s intent on these charges should be included in requests for proposals.

First, all operators should be obligated to interconnect their networks with universal service providers at cost-oriented rates, and vice versa. Without such a requirement, universal service programs involving new operators cannot succeed. Furthermore, this requirement is necessary for

competitive neutrality and is a major obligation of the WTO Reference Paper, which all ASEAN Member States have agreed to adopt by 2009.

Two interconnection rates must then be determined. For outgoing calls from the universal service network that terminate on the existing public service telecommunications network (PSTN), rates should be the standard PSTN termination rates. For calls that terminate inside the universal service network, costs are likely to be higher and so rates can be set asymmetrically at a higher level. This also lowers subsidies since higher income consumers outside the universal service area pay more of the cost. This is especially relevant with today's mobile technologies. These technologies allow operators to develop the incoming call market and achieve a much higher proportion of incoming traffic in universal serviced areas.

The most important retail rate is the rate for local calls in the universal service area. One option is to allow operators to set their own rates. Operators would presumably set rates to maximize profits and thereby minimize the subsidies required. The government, however, might find such rates objectionable and contradictory to its goal of affordable communications prices. Another option is to set prices to be similar to those for the PSTN. Because this might not recover costs, the government will have to provide ongoing operational subsidies in universal service areas.

Retail rates for national long distance (NLD) and international long distance (ILD) would then be the universal service retail charge plus the charges for terminating NLD and ILD calls. Where a single carrier dominates the NLD and ILD markets and there is monopoly pricing, one could argue for revenue sharing on calls from universal service areas. In such cases, the build-out in rural markets represents new incremental demand that would not otherwise occur. Revenue sharing would allow universal service operators to share in the profits from this increased demand (Sepulveda 2002).

## **SHOULD OPERATIONS AND MAINTENANCE BE SUBSIDIZED?**

All universal service funds subsidize the capital costs of building out a network. Whether subsidies should also be provided for network operation and maintenance is more controversial and may depend on other program parameters, such as retail tariffs and interconnection arrangements. Since the goal is to provide affordable access to telecommunications, there is no *a priori* reason to exclude operational subsidies. This also allows winning bidders to offer lower retail prices in universal service areas.





# 4. Legal Framework and the Fund Administrator

## ENABLING LEGISLATION

It is important to have adequate enabling legislation framework for universal service funds. This may require amending telecommunications laws or other legislation. For example, the legislation should contain general authorizing language to enable establishment of the fund, its goals, administrative body, funding source or other obligations of operators, authorization to collect funds, authorization to spend on universal projects, and the main mechanisms or types of programs. A universal service fund that uses operator levies may require special authorization that allows the fund administrator to tax operators and to ensure that all such funds are used for universal service, rather than being passed back through the tax authorities at the Ministry of Finance.

## THE FUND ADMINISTRATOR<sup>14</sup>

The fund administrator should have full authority to carry out the government's universal service policies, while being independent of day-to-day political pressures and the influence of operators. The administrator would have its own mandate to carry out policies, including all responsibilities needed to administer the universal service fund, and have many of the same characteristics of independent regulatory bodies, as defined by international best practice. Fund administrators may also become involved with many of the same regulatory issues as the regulatory body, such as pricing and interconnection. For these reason, many countries have established semi-autonomous units, some within the independent regulatory body for telecommunications, to administer universal service funds. Broad policy goals for universal service, including fund contribution levels, would continue to be set by the government agency responsible for telecommunications policy, such as the Ministry of Communications.

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The fund administrator should be a semi-autonomous unit, possibly within the independent regulatory body for telecommunications; should have full authority to carry out the government's universal service policies; and be independent of day-to-day political pressures and the influence of operators.

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<sup>14</sup> See (Townsend 2002) for a detailed discussion of the fund administrator.

**Mission Statement.** The mission statement for the universal service fund administrator might include the following goals (Townsend 2002):

- To promote universal access and to advance the use of information and communications technology;
- To contribute to national economic development and social well being;
- To promote technological innovation;
- To promote competition;
- To promote sustainable economic development.

**Organization.** The universal service fund administrator requires its own autonomy and has distinct functions requiring its own management structure. This is the case even when the fund administrator is part of the telecommunications regulatory agency as a special line unit. The management structure of the fund administrator might appear as follows (Townsend 2002):

- Board of Directors (provides overall direction, approves annual operation plans and budgets, annual reports, and audits, appoints senior fund management);
- Advisory Committee (consists of industry groups, consumers, government and other stakeholders in information communications technology);
- Director and Assistant Director;
- Project managers (responsible for implementation and management of universal service projects);
- Accounting and Legal Departments.

**Transparency Principles and Financial Recording.** The universal service fund administrator must establish a high level of public trust. As a result, its operations should be subject to many of the same “international best practice” transparency principles as the regulatory body itself. To ensure transparency,

- All universal service fund procedures and decisions should be open to public evaluation and subject to annual independent audit.
- As is the case of the regulatory body, administration of the fund should be subject to annual review.
- Monies collected for the fund should be kept in accounts that are separate from those of the telecommunications regulatory agency or the accounts of any other government agency, and should be used exclusively to provide subsidies (Townsend 2002).

**Tasks.** The universal service fund administrator designs, implements and monitors the universal service program. Examples of the tasks of the fund administrator are as follows:

- Determines funding allocations and develops an annual operating plan
- Manages day-to-day operations of the USF;
- Specifies the universal service being auctioned, locations, the maximum subsidy and other criteria for the granting of awards;
- Issues the RFP and oversees the competitive bidding process for USF subsidies;
- Selects the winning operator and provides the applicable subsidy;
- Monitors implementation.

# 5. Implementing a Least-Cost Subsidy Auction

## **AUCTION PROCESS**

When designing the auction process, the principal objectives of fund administrators are to attract the largest number of qualified bidders while covering the cost of administration. Bidders may also be subject to prequalification requirements and bid guarantees. In preparing and undertaking an auction, the fund administrator may consider the following (Sepulveda 2002).

- To ensure transparency principles and efficiency, the auction may include a notice of intent and invitation to comment, as well as public consultations to obtain stakeholder inputs;
- The auction should be advertised on the universal service program website or other international sites in order to attract the largest number of bidders;
- Fees should be kept to a minimum and be based on cost of administering the auction;
- The auction should follow a simple and transparent competitive process based on internationally accepted procurement procedures.<sup>15</sup>
- Bidders could be subject to pre-qualification requirements for projects requiring significant technical expertise, such as operational experience of similar size projects elsewhere in the world and/or proof of financial capacity;
- Bidders could be subject to a small bid guarantee which would be forfeited if a bidder is successful, but then withdraws before a license is issued.

## **REQUEST FOR PROPOSALS**

The request for proposals (RFP) will lay out the criteria that will be used to evaluate proposals submitted for project. Documents accompanying the RFP will also contain the obligations and rights of winning bidders. Based on the foregoing, the some of the more important elements that should be contained in the RFP are as follows (See also Appendix A):

- The geographic localities (towns, villages, etc) and/or population targets that are to be served by the project. Larger projects are likely to involve lower administrative costs, per locale, than many smaller projects;

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<sup>15</sup> In the draft report to the ITU on universal service, Sepulveda argues against using government procurement procedures since these are designed for other purposes and may be too cumbersome for use with universal service funds (Sepulveda 2002). Fund administrators in ASEAN have made similar comments.

- The types and quality of service -- e.g. voice grade access to the telecommunications network in order to make and receive local, national long distance, and international long distance calls, and including free access to operator assistance and emergency service;
- Length of service period;
- Whether enhanced services such as voice messaging and dial-up Internet are included;
- For Internet services, bandwidth and transmission quality requirements;
- Maximum subsidy amounts;
- Whether subsidies are to cover only capital costs, or whether operational costs are also to be covered;
- Licensing obligations of winning bidders;
- Rights of winning bidders to offer enhanced and other services, such as DLD and ILD;
- Interconnection requirements and rates;
- Retails rates.

As noted earlier, it will be up to operators to determine the least cost technology and to develop business plans that meet the terms of the RFP.

## **PERFORMANCE GUARANTEE**

After selecting a project winner, the fund administrator may require a performance guarantee to ensure that the project is undertaken as proposed by the winning bidder. The timing and magnitude of the guarantee is related to the disbursement schedule for the subsidies. If the subsidies are provided at the start of the project, there is more risk of default and a higher performance guarantee may be required. If the subsidies are provided after the network is constructed and operational, a guarantee is needed only to ensure that the operator provides the service over the entire designated period. Alternatively, subsidy payments could be based on a set of milestones, but back weighted to ensure quality of service and other government objectives. The project administrator should also lay out conditions of failure and who owns assets constructed using Government monies (Sepulveda 2002).

## **BIDDING ON MULTIPLE PROJECT AREAS**

There may be cases where there are returns to scale when a single operator is responsible for the build-out and operation of multiple universal service projects. By allowing applicants to combine these project areas into a single bid, the USF can capture these scale economies in terms of lower subsidies. For example, operators would be allowed to bid on all villages in a district as well as individual or a subset of villages. This should give rise to lower bids on a per village basis.

## **MAXIMIZING BUILD-OUT VERSUS MINIMIZING SUBSIDIES**

Most countries to use competitive auctions to “minimize the subsidy” needed for universal service areas. An alternative is to determine winners based on the “maximum build-out” for a given amount of subsidy. In other words, the fund administrator first determines the geographic regions covered by the universal service auction and the total amount of subsidy that will be granted for these regions. The winning bid is the one that offers the maximum universal service coverage for the amount of subsidy. Since fund administrators may not know the best, least-cost combinations of project areas, “maximum build-out” leaves for more flexibility for the private sector to design project areas. It should be simpler to administer when the government has limited

monies during the first rounds of auctions and when these monies are insufficient to provide access to all universal service areas.<sup>16</sup> In other words, basing auctions on “maximum build-out” rather than minimum subsidy can be easier to administer and lead to more efficient outcomes during the first couple of rounds of auctions (Magiera 2003).

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<sup>16</sup> In mathematical programming terms, maximizing build-out is the “dual” to minimizing the subsidy. When funds are not a constrained and when the auction system is efficiently designed with perfect knowledge, duality theory concludes that “maximum build-out” and “minimum subsidy” will lead to identical results. Since knowledge is imperfect, fund administrators may not know the best, least-cost combination of project areas. Under such circumstances, “maximum build-out” may lead to more efficient outcomes.



# 6. Implementing a Universal Service Fund – A Summary

The following are the broad, chronological steps necessary to implement targeted subsidies from a universal fund (Magiera 2003):

1. Establish the legislative and regulatory framework necessary to establish and implement a universal service fund.
2. Establish a body to administer the fund. In many countries, the fund is administered by a special autonomous board attached to the telecommunications regulatory body.
3. Establish a mechanism for financing the universal service program. The best policy is to finance the fund from general revenues. Many countries fund programs from small levies on revenues, net of interconnections and intercompany payments, of telecommunications operators.
4. Define the types of projects that will qualify for universal service funding and performance criteria for the service. Most programs focus on the provision of basic voice telephone service with emergency and directory assistance services. Some are now including Internet Points of Presence.
5. Determine what enhanced services will automatically be included as part of universal service licenses and whether universal service operators will be allowed to provide domestic and international long distance service in universal service areas.
6. Establish licensing, interconnection, and other requirements for universal service operators as follows:
  - Establish an interconnection regime for operators terminating calls on the public service telecommunications network, and vice versa. Rates should be cost-based and can be asymmetric to reflect higher costs in universal service areas.
  - Specify the regulated price for retail services in universal service areas. Universal service operators are obligated to provide service at these prices for a specific number of years (e.g., 10 years).
  - Do not place restrictions on technology.
  - Provide any required spectrum free of charge, or at the cost of administration, as one way to reduce costs.

- Provide universal service licenses that are nonexclusive and that are valid for a specified number of years (e.g. 30 years).
  - Guarantee that no other carriers will receive subsidies to compete with the universal service provider for the period of the latter's license.
7. Request universal service proposals from local and regional governments, neighborhood associations, NGOs, private institutions, telephone operators, and the general public, etc.
  8. Group proposals into projects for universal service funding. Grouping projects into fairly large areas permits economies of scale and lower subsidies.
  9. Determine whether the program will subsidize operational costs, in addition to the cost of building out the infrastructure. Subsidizing operational costs allows lower prices for consumers.
  10. Determine the maximum subsidy that can be granted for each project.
  11. Auction the universal service projects. The winning projects are those that bid the lowest subsidy. This subsidy could include the discounted present value of the future operating subsidies needed to keep the project viable for a specified number of years (e.g. 10 years).
  12. An alternative to least-cost subsidy auctions is to base the competition on the maximum build-out in universal service regions for a given amount of subsidy. This may be easier to administer since it involves the private sector more in the design of universal service projects within the broad target areas of the program.
  13. Determine a timetable for providing subsidies to winning bidders.
  14. Have the universal service administrator monitor all projects for compliance with bid documents and service requirements.
  15. Have the universal service administrator itself subject to independent audits on the management of universal service funds.



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# Appendix A. Sample RFP

## *Output-Based Aid Using Minimum Subsidy Auctions*

The following request for proposal (RFP) was developed by Sepulveda for the International Telecommunications Union (Sepulveda 2002, pgs 34-41).

### **PART I. DEFINITIONS**

Provides relevant definitions from laws, regulations, etc., to ensure regulatory consistency.

- May reference definitions in other documents (e.g., laws, regulations, regulatory guidelines).
- In some cases, definitions are included as an annex to the RFP.

### **PART II. GENERAL INTRODUCTION**

#### **Brief background**

Identifies the

- Type and number of license(s) that will be issued pursuant to the RFP.
- Regulatory body issuing the RFP and the funding agency (if any).
- Relevant statutes and regulations.

#### **Schedule**

- Provides a timetable for the RFP process, identifying events, number of days between the event and the start of the process, and the calendar date of the event.
- Provision should be made for the possibility that an event falls on a holiday.

#### **Address for Correspondence**

- Identifies addressee and provides address for all correspondence related to the RFP.

## **PART III. BACKGROUND ON NATIONAL TELECOMMUNICATIONS SECTOR**

### **Incumbent Network**

- Describes incumbent network, and may identify current operator(s), number of lines, technology employed, and penetration rates.

### **Rural Telecommunications Service Policy**

- Describes rural telecom service policy (if any) or universal services policy (if any).
- Relevant policy statements from statutes, regulations, or policy documents may be presented in an annex.

### **Tariffs, Numbering, and Other Licensees**

- May refer to annexes that contain detailed information about tariff structure and policies, current tariffs of operators, the numbering plan, and other licensees.

## **PART IV. RIGHTS AND OBLIGATIONS OF LICENSEE**

### **Exclusivity**

- Defines precisely, including time limits of exclusivity (if any), grounds for terminating exclusivity, possible extensions of exclusivity, and preconditions for extensions.

### **Network Rollout Requirements**

- Defines precisely the network rollout obligations, including the rollout schedule, requirements in terms of services and geographic localities, and how rollout will be verified (e.g., through certification of an independent technical consultant appointed by the regulator).
- The measure of network rollout may vary, depending on the type of license. Examples include number or percentage of lines activated and number or percentage of localities served. The Universal Service Fund (USF) Administrator may also specify the geographic regions that must have priority in rollout.
- Clearly specifies the consequences, including penalties, for failing to meet rollout requirements. The RFP should contain a clause protecting the licensee from the application of penalties where rollout is delayed solely because of a *force majeure* event.

### **Subsidy Payment Schedule**

- Defines precisely the schedule for payment of the subsidy, including the nature of the subsidy (e.g., a one-time grant), the maximum subsidy that will be paid, and any preconditions for payment.
- The disbursement schedule may be front-end loaded or back-end loaded.
- The subsidy may be payable in tranches. In this case, specify the payment schedule for each tranche, the amount of each tranche as a percentage of the total subsidy payment, and the conditions for payment.

- Include a provision that grants the funding agency the right to choose the bank instrument used to pay the subsidy.

## **Service Quality and Availability Obligations**

- Specifies obligations for service quality:
  - Indicators (e.g. call completion rates, fault rate per line per annum and fault clearance rates) and relevant definitions, if applicable.
  - Standards to be met by specified dates.
  - Reporting procedures.
- Specifies obligations for service availability:
  - Hours of operation of public call offices and communications of such hours to the public.
  - Number of lines that must be activated and in operation in each region for the duration of the license.
- Specifies clearly the consequences of failing to comply with service quality and availability obligations.
- May be addressed or supplemented in other documents annexed to the RFP.

## **Scope of Service**

- Approaches to licensing may differ (e.g., licensing of facilities or services).
- Defines precisely the mandatory services that the licensee will be required to provide, where applicable.
- Depending on the nature of telecommunications regulatory environment, the licensee may be restricted from providing certain services such as national long distance (NLD) or international long distance (ILD). Restrictions should be clearly specified, including their nature and duration.
- As an incentive to submit an application, licensees may be given the right to acquire licenses for restricted services such as NLD or ILD after a certain period. Any such right should be clearly identified, along with the preconditions and qualifications on the right to acquire such licenses.
- Defines precisely the optional services that the licensee will be authorized to provide pursuant to the license, including the region in which the licensee will be authorized to provide such services, where applicable.

## **Regulation of Incumbent**

- Indicates that the incumbent will be regulated by the national regulatory authority (NRA) to ensure fair competition between the incumbent and the licensee.

## **Interconnection**

- Outlines rights and obligations to interconnect.
- Refers to documents pertaining to interconnection (e.g. rates, reference interconnection offer, policies, etc), which may be annexed to the RFP.

- Requires applicant to provide a best estimate of number and size of interconnection circuits and point(s) of interconnection that it will require during first 2-5 years of operation.

### **Regulation of Licensee's Consumer Tariffs**

- Outlines regulations governing the licensee's tariffs, including but not limited to process of tariff approval, maximum tariffs allowable, restriction on charging tariffs higher than those approved by the regulatory authority, indexing formula, if any, to protect licensee from local currency devaluation, and a requirement to post tariffs.
- Refers to documents pertaining to tariffs (e.g., maximum tariffs permitted, statutory and regulatory provisions and policies), which may be annexed to the RFP.

### **Authority to Construct and Use Facilities**

- Outlines rights and obligations of licensee to construct and use facilities for the provision of services, including
  - General authorization to construct and use facilities
  - Identification of authorized technology and technical requirements
  - Restrictions on equipment that may be used (e.g. type approval, equipment must be new when installed, etc.)
  - Rules on procurement procedures, if any.

### **Access to Public and Private Lands**

- Outlines rights of licensee to access public and private land, including expropriation rights, if applicable.
- Cites legal authority for any such rights.
- Includes rules of access, if not stated elsewhere (e.g., payment, if any, public safety and convenience, aesthetics, compliance with applicable law).

### **Cooperation among Licensees**

- Specifies obligation to cooperate with the incumbent, other licensees, and any other telecommunications service providers to ensure compatible and consistent types and quality of service to users across the country.

### **Transfer of Control of License**

- Provides rules and restrictions on the transfer of control of the license and the change of ultimate control of the licensee. Cross references applicable statutory and regulatory provisions.
- Often, transfer of the license and change of ultimate control of the licensee are not permitted (at least not without consent).

### **Compliance with Law**

- Requirement to comply with all laws of the issuing country.

### **Term of License**

- Duration of license and renewal terms, if applicable. Preconditions for renewal should be clearly stated.

### **Fees Payable by the Licensee**

- Specifies all fees the licensee will have to pay, including type of fee, when payable, and basis on which fee will be calculated.

### **Frequency**

- Spectrum is often licensed separately from license issued pursuant to the RFP.
- Specifies process and fees for obtaining spectrum authorizations. This provides certainty for licensees who will use wireless technologies.
- Requires applicants to specify spectrum requirements of their proposed service, including frequency bands, number of channels and anticipated use.
- Refers to application for spectrum and any applicable policies and regulations, which may be annexed to the RFP.

## **PART V. INSTRUCTIONS TO APPLICANTS**

### **Selection of Successful Applicant**

- Specifies clearly the basis for selecting an applicant for issuance of license and award of subsidy.

### **Meaning of "Qualified Applicant"**

- Outlines clearly the criteria that applicants must satisfy in order to advance in licensing process. May cross-reference other sections of the RFP, such as sections on eligibility and qualifications and grounds for disqualification.

### **General Eligibility and Qualifications**

- Describes general eligibility and qualification requirements for the application for license and the applicant.
- There may be limitations on the number of applications in which any one person may participate.
- Each requirement should correspond to an obligation to provide evidence in the application for license (AFL) that the applicant has met the requirement. The obligation to provide such evidence should be outlined in the section concerning the content and format for subsidy and structure requirements.

### **Eligibility of Applicants**

- Describes specific eligibility requirements, such as legal status of applicant, national participation (may be done before or after license is issued), financing capacity, and operational experience, including field-proven equipment.

- Specifies clearly what the applicant must demonstrate and the evidence used to demonstrate compliance. This promotes transparency and certainty in the RFP process.
- Each eligibility requirement should correspond to an obligation to provide evidence in the AFL that the applicant has met the requirement. The obligation to provide evidence should be outlined in the section on the content and format for subsidy and structure requirements.

### **Period of Validity of Application**

- Specifies the application validity period from the closing date specified in the RFP. This prevents applicants from altering or withdrawing applications midway through the licensing process.
- May include a provision to extend the period of validity. Identify procedures for extending the period, including the length of the extension period and whether the applicant's consent is required.

### **Bid Security**

- Clearly specifies mandatory validity period of bid security, including the possibility of extension.
- Identifies procedures for extension, including length of extension period and whether the applicant's consent is required.
- Specifies when the bid security of successful and unsuccessful applicants will be released (e.g., 30 days after the license is issued) to promote certainty in the licensing process.
- Specifies clearly the conditions under which bid security may be forfeited.

### **Grounds for Disqualification**

- Clearly identifies grounds for disqualifying applicants. Grounds may include failure to register with the USF Administrator; to submit the application by the deadline, to complete the application in accordance with the RFP, to comply with RFP procedures and requirements, to submit the bid security; misrepresenting facts in the application; illegal conduct; corrupt practices; and fraudulent practices.
- Specifies whether USF Administrator evaluation team will have discretion to disqualify applicants.
- May subsequently disqualify a successful applicant and revoke the license without compensation if evidence arises after the issuance of the license of any of the grounds for disqualification.

### **Content and Format of Application for License (AFL)**

- Sets out the content and form of the application in general terms.
- Generally includes two components: the “qualifications and service proposal” and the “subsidy proposal.”

### **Structure Requirements**

- Describes clearly the documents and information that must be included in the AFL.



- All documents and information necessary to establish that the applicant has met the eligibility and qualification requirements described in the RFP should be a required component of the AFL, including:
  - Cover letter, including a description of the applicant and the proposed licensee; an indication of a firm commitment to apply for the license and subsidy; the bid security; powers of attorney; and a formal application for the license.
  - Information and documentation pertaining to the bid of the applicant, if applicable.
  - Information about the proposed licensee, including information and documentation about the proposed licensee’s legal status and organization.
  - Information and documentation about the requirements pertaining to national participation; financing capacity; technical expertise and professional skills; equipment; and operational experience.

### **Network description**

- Information about operations, including how the applicant proposes to run the business; a summary of any land that must be procured; a description of the proposed licensee’s procedures and systems for quality standards, performance monitoring, call metering, and billing and maintenance.
- Pro forma financial statements.
- Proposed tariffs.
- Interconnection requirements.

### **Subsidy Proposal**

- Includes instructions on the required form for the bid proposal.
- The bid proposal should be submitted in a sealed envelope clearly marked “bid proposal” in the AFL.
- A bid proposal form may be annexed to the RFP.

### **Compliance Checklist**

- Require applicants to complete a “compliance checklist” that lists all required information and documents, indicates whether the applicant has included the relevant material, and cross-references specific parts and page numbers of the AFL with the required information and documentation.
- Provide checklist as an annex to the RFP.

### **Submission of the AFL**

Provides clear instructions concerning AFL submission, including:

- A summary of what documents and information comprise the AFL.
- Number of copies to be submitted.
- Particular instructions concerning the bid security.
- Delivery instructions, including delivery address.
- Instructions on labeling and sealing the AFL package.
- Closing date and time of submission.

- Information about any pre-proposal information meetings.
- The date, time, and location for the opening of the AFLs.

### **Evaluation of Applications**

- Specifies clearly the procedure for evaluating the applications to promote transparency and certainty.
- Specifies when bid proposals will be opened. Approaches vary. Sometimes proposals are opened at the same time as the general AFL package. At others, the proposals of qualified applicants are opened only after the National Regulatory Authority determines which applicants meet the qualification and eligibility requirements.
- Specifies procedure to be followed in case of a tie between applicants.

### **Issuance of License**

- Issuance of license involves first sending a letter of intent to issue the license (LOI), then issuing the license, provided that LOI conditions have been met.
- Though the LOI confirms the authority's intent to award the license to an applicant, it makes issuance contingent on number of conditions, such as submission of a performance guarantee. All such conditions should be clearly specified.
- Specifies that the LOI does not give the applicant the right to obtain the license and subsidy. The applicant must comply with all provisions of the RFP and the LOI before a license is issued.

### **Performance Guarantee**

- Provides requirements for the performance guarantee, including the amount of the guarantee, financial institutions approved to issue it, the validity period, and the schedule for release. Sometimes a certain percentage of the guarantee may be released before the end of the license term if certain conditions are met.
- Identify circumstances under which the guarantee will be forfeited, such as failure to meet requirements for rollout, service quality, and availability.
- The guarantee form may be annexed to the RFP.

### **Attendance Register and Minutes of Meetings**

- Outlines requirement of the National Regulatory Authority (NRA) to maintain an attendance register for any pre-proposal meetings, as well as for the meeting where the AFLs are opened.
- Outlines responsibility of the NRA to prepare minutes of such meetings.

### **Information Provided by Universal Service Fund (USF) Administrator**

- The USF Administrator will try to ensure that all applicants are provided the same information during the application process.
- Limitation of liability of the USF Administrator, its employees, etc., with respect to use of information provided in the RFP process.

## **Communications and Requests for Clarification**

- Outlines procedures for communicating with the USF Administrator concerning the RFP.
- May include a procedure for posing questions of clarification to the USF Administrator.

## **Confidentiality of Applications**

- Describes how applications will be treated with regard to confidentiality.
  - Approaches to confidentiality differ. In some cases, applicants claim total confidentiality and in others the USF Administrator determines what information will be treated confidentially.
  - Sometimes, a hybrid approach is taken. For example, applications are treated as confidential throughout the RFP process. After a license is issued, the USF Administrator may place some or all AFLs on the public record, but must first give applicants an opportunity to request that commercially sensitive or proprietary information be treated as confidential.
- Typically includes a limitation of liability of the USF Administrator, its employees, etc., with regard to damages or harm resulting from a failure to maintain confidentiality.

## **Use of Applications**

- Reserves right of the National Regulatory Authority to use or reproduce ideas and information in an AFL without notice or payment to the applicant.

## **Cost of Application and Bidding**

- Clearly allocates responsibility for AFL preparation and submission costs to the applicant.

## **Modification of Terms of License**

- Reserves the right of the National Regulatory Authority to modify the terms of the draft license annexed to the RFP.
- Once the license is issued, it may only be modified in accordance with the terms of the license.

## **Reservation of Rights**

- Reserves the right of the USF Administrator to modify or terminate the application process or to revoke the LOI at any time before the license is issued.
- Typically includes a limitation of liability of the USF Administrator, its employees, etc., with regard to damages or harm resulting from any action or decision taken in connection with the evaluation or disqualification of an application.

## **Legal and Formal Requirements**

- Identifies the governing law of the RFP and any license issued pursuant to it.
- Identifies procedures for settling disputes (e.g., UNCITRAL Arbitration Rules).
- Identifies in what language an AFL, accompanying documents, and correspondence with the Fund Administrator must be.

- Identifies currency for payment amounts identified in the RFP.

## **PART VI. ANNEXES**

1. List of Localities to be served
2. Telecommunications Law
3. Telecommunications Regulations (or Guidelines)
4. Telecommunications Policy
5. General Guidelines on Interconnection
6. Reference Interconnection Offer of Incumbent
7. Tariff Guideline
8. Existing Consumer Tariffs of Incumbent.
9. Map of Country
10. Description of Incumbent Network (including map/diagram switching/transmission network)
11. National Numbering Plan
12. Subsidy Proposal Form
13. Application for Frequency
14. Bid Security Form
15. Performance Guarantee Form
16. Draft of Proposed License (license terms should mirror relevant provisions in the RFP.)
17. Compliance Checklist (provisions should mirror relevant provisions in the RFP.)