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INTERNATIONAL TELECOMMUNICATION UNION (ITU) AND COMMONWEALTH TELECOMMUNICATIONS ORGANISATION (CTO) MODEL UNIVERSAL SERVICE/ACCESS POLICIES, REGULATIONS AND PROCEDURES

PART I: UNIVERSAL SERVICE/ACCESS POLICY, AND CREATION AND OPERATION OF UNIVERSAL SERVICE FUNDS

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Foreword

We are pleased to present the draft version of the International Telecommunication Union (ITU)-Commonwealth Telecommunications Organisation (CTO) Model Universal Service/Access Policies, Regulations and Procedures. The models were prepared in three parts. Part I focuses on universal service/access policy and the creation and operation of universal service funds. Part II focuses on universal service project funding through minimum subsidy auction mechanisms and tariff/interconnection regulation for the promotion of universal access. Part III describes telecentre options and strategies. The models propose the creation of a universal service fund as a central mechanism within a broader market-oriented approach to achieving universal service/access in developing and least developed countries. The models foresee that universal service funds may be used both for projects to provide basic services and for projects providing more advanced communications.

Why the need for such universal service/access models? A growing number of ITU Member States recognize the importance of ensuring access to information and communication technologies (ICTs) by all segments of society. Globalization and rapid technological change have made information and knowledge critical determinants of competitiveness in the new world economy. To compete successfully, a country must have connectivity. Access to the information society can stimulate economic growth by creating new products, increasing productivity and opening the way to new administrative and marketing methods. In addition to economic development, connectivity fosters social development, including education, health and increased citizen participation in civil society. In short, universal service/access policies, regulations and procedures are central to countries' efforts to bridge the digital divide.

How can countries achieve these goals? As a first step, many countries have embarked on the path of market reform, opening their communications markets to competition to stimulate network development, encourage the spread of innovative technologies and promote high quality, affordable service. Many countries have witnessed considerable success, especially in mobile communications. The sharp rise in mobile subscribers throughout the developing world has increased access - at least to voice services - at unprecedented levels. This year, the number of mobile subscribers worldwide outpaced that of fixed line subscribers.

Despite these promising gains, many rural areas throughout the developing world remain un-served by any communications network, fixed line or mobile. Access to high-speed Internet services also remains out of reach for most citizens of developing countries, especially in rural areas. Many countries, therefore, have begun drafting universal service/access policies aimed at increased access to ICTs. A surprising number of these policies call for the creation of universal service funds as a means of bridging the digital divide.

These models, therefore, aim to provide guidelines for the growing number of countries contemplating the creation of a universal service fund as a means of improving access to ICTs. The creation of universal service funds requires policy makers and regulators to make a series of key choices, including whether the source of such funds should come

from the government or the private sector, and if the private sector, should all ICT service providers contribute, or only some service providers? In addition, policy makers must decide who should administer the fund, a separate universal service agency, the national telecommunication regulatory authority or some other entity? How should universal service projects be identified and which kinds of services funded, basic or advanced or both? How can funds be used most efficiently? These models identify promising and best practices in the area of universal service funds. Moreover, the models aim to explain the consequences of each choice to facilitate decision-making on the part of policy makers and regulators. The models recognize, however, that ultimately each nation must make its own set of choices to best meet its national ICT development goals. These models are expected to develop as a useful and practical tool for policy makers and regulators alike, given their detailed descriptions of the various elements of creating and implementing universal service/access policies, regulations and procedures. While the models may be adopted in whole, as part of a comprehensive package of universal service/access policies, regulations and procedures, they may also be used in a modular fashion with countries utilizing only selected recommendations.

Universal service funds, of course, are not the only means of reaching national universal service/access goals. There are a variety of other measures that can be implemented to improve access to ICTs, ranging from further market reforms, to licensing alternative technology service providers to promoting infrastructure sharing. Of course, universal service funds may be used in conjunction with a variety of other measures aimed at increased access. It is also important for policy makers at the highest levels to recognize that even the best universal service/access policies will not, on their own, bridge the digital divide. Basic education, training and poverty reduction remains key to ensuring equal access and use of ICTs by all members of society. Policy makers and regulators, therefore, should ensure that the human and financial resources devoted to the telecommunication sector in general, and universal service/access in particular, are commensurate with their overall development goals.

These models were verified in a workshop for the Telecommunication Regulators' Association of Southern Africa (TRASA) held in Dar Es Salaam, Tanzania in July 2002. Preparation of these models was sponsored by the ITU and CTO, which have entered into a cooperation agreement to prepare a series of regulatory models designed to provide regulators in developing countries with tools to enable them to become more effective. ITU and CTO plan to develop additional models in 2003 on other key regulatory issues. ITU plans to publish these models and those developed next year in the 2003 edition of Trends in Telecommunication Reform.

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The views expressed are those of the authors and may not necessarily reflect the opinions of ITU or its members.

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I. Introduction

The perspectives of the international telecommunications community concerning the opportunities and mechanisms for expanding network development and access in developing and least developed countries have changed significantly in recent years. The assumptions and practices that dominated operator behavior and policy deliberations for more than a generation have been rapidly eroding in the face of increasingly dramatic technological and market changes. In particular, as carrier privatisations and market liberalisation are becoming the norm in almost every region, the notion of a state-run, monopoly telecommunication administration constructing telephone networks purely as a public service – irrespective of market or economic considerations – has become an anachronism.

Indeed, it is generally recognised that, as the importance and value of all forms of communication continue to increase throughout the world, and as economic demand for telecommunication services commensurately rises, the *market* is proving to be the best mechanism for serving nearly all levels of user needs. The challenges of "universal access" to information and communication technologies (ICTs) – and the related objective of "universal service" (i.e., individual/residential telephone service) – thus involve more questions about facilitating and promoting market-based development than issues of broad and untargeted public subsidies or mandated construction programs.

But for most societies, the transition from monopoly to competitive markets typically begins at the high end of the spectrum, among the lowest cost/highest revenue customers; investor enthusiasm for reaching out to underserved locations and populations has been mixed at best, despite the potential attractiveness of large numbers of customers and little immediate competition. The reasons for this, of course, are related to the historical costs and risks of rural and low-income markets, particularly in times of economic uncertainty.

Thus, telecommunication policy makers have recognised an ongoing need for at least interim measures to accelerate the rollout of telecommunication infrastructure and information technologies in the least developed areas, as a core element of both liberalisation and development policies. The newer thinking is that essentially all participants in the market can and should take part in the collective effort to achieve universal access, since in theory all are in a position to benefit as public networks expand. And by the same token, no carrier should be expected to bear the risks and costs of universal access when its competitors are not similarly obligated.

These are the principles behind the establishment of industry-wide Universal Service Funds (USFs) or Telecommunications Development Funds (TDFs). By requiring equitable contributions toward the national objective of infrastructure and service development, and then allowing for fair competition among all participants for the use of collected funds, these mechanisms seek to create the extra level of economic incentives necessary to spur private investment in network expansion, while maintaining competitive market conditions. The specific form, responsibilities, and practices of the many such Funds that have recently been established around the world vary greatly, although there are a number of relatively common features. Above all, these Funds are committed to the notion that industry resources should be aimed as aggressively as possible at including previously ignored regions and populations

within the scope of national ICT development. Universal Service Funds are not intended as a substitute for private market incentives and investments and should not interfere with competitive market forces. Nor are they inconsistent with other market-based measures to improve universal service/access and may be implemented in parallel with other such measures..

This document is Part I of a three-part report, plus Appendices. This section describes a "model" Universal Service Fund policy and procedures, based upon extensive research into and experience with a wide range of USFs in developing and developed countries around the world. The model features seek to bring together the apparent Best Practices (or "promising practices") for each of the various elements and activities that should comprise such a Fund. The following sections describe the main features of this model Fund, and the recommendations for administrators and policy makers to consider when implementing, or revising, their own USF policies. Part II provides further detail on processes for soliciting competitive bids to construct new access network facilities in rural areas. Part III elaborates upon options for supporting Multipurpose Community Telecentres as a key application of USF funds.

Terminology, Institutional Framework

In this report, we utilise certain standard terminology and acronyms to represent what can be different institutions, functions, or roles depending upon the country involved. Specifically, we use the following terms:

Universal Service (US): The long-term objective of making communications facilities available to every member of society on an individual or household basis.

Universal Access (UA): The more immediate goal of providing convenient and affordable access to communications on a community or local basis, through combinations of public facilities (pay phones, telecentres, etc.) and individual private service.

Universal Service Fund (USF): A public fund established to support communications development goals. Other equivalent terms used in different countries include Universal Access Fund, Telecommunications Development Fund, and the like.

Ministry of Communications: The chief Government agency or department responsible for establishing and overseeing communications policy, including the determination of development goals and priorities. In some countries, these objectives come under multiple Ministries or agencies, such as those addressing Economic Development generally, Culture, Information, Science and Technology, and so forth. We presume a single Ministry for discussion purposes.

National Regulatory Authority (NRA): The regulatory agency with direct responsibility for the telecommunications sector, particularly oversight of economic and market conditions such as tariffs, licensing, competition, interconnection, and operator investments and development.

USF Administrator: The organisation or unit authorised to implement and manage the Universal Service Fund.

II. Model USF Policy

This section describes the parameters of a model USF Policy, incorporating various best and promising practices from around the world. The Policy elements are intended to outline the key considerations and decisions that should be pursued in the establishment and operation of a Fund, the principles and objectives it should serve, and the range of authority, responsibility, and activities that should be assumed by the different participants in the process. For each subject area, we define the main characteristics of the model USF Policy's recommended terms, provide a general rationale for this proposal, and then briefly describe possible alternative approaches that might qualify as options in some contexts.

2.1 Authorising and enabling laws and policies

All key development programs begin at a high level of **national legislation, Presidential decrees,** or **Ministerial policy statements**, which establish the framework and limitations in which the policy must be implemented. Such a foundation is necessary to ensure the credibility and authority of the policy, as well as to ensure that its terms are consistent with other national priorities and ongoing programs. The model Universal Service Fund policy should be based upon fairly general authorising language and statutory obligations, to ensure that the basic objectives and operation of the Fund are achieved, but without placing burdensome restrictions on its functioning. The following sections identify key topics to be addressed in such enabling provisions.

Define principles of the right to communications access

The entire basis for Universal Access policy should be established as a principle that access to communications is a common right of all citizens. This can be stated in general language, such as:

> "The Government considers that it is a fundamental right of all citizens to have access to diverse and unrestricted sources of information and means of communication. The nation's information infrastructure will not be complete until it reaches all locations and people throughout the country, and provides reasonable and affordable access to the full range of traditional and emerging information and communications technology (ICT) and services, taking account of different needs among the user population, including considerations of gender, age, ethnic and linguistic distinctions, and handicaps."

Define objectives and obligations for national telecommunications development

The mandate should outline the general objectives for infrastructure development, in line with the statement of citizen rights, as well as overall national economic and social goals. The ever-changing nature of the telecommunications industry makes it unwise to specify precise types of technology, or numerical or economic targets, in the framework of a governing statute or policy. Such target objectives should be set by the Fund Administrator (which this model recommends should be part of the Regulatory Authority), consistent with

the principles of the law, but adjustable to changing industry conditions. In addition, the law may specify a minimum threshold of access to be pursued as a basic priority of universal service policy. Representative language could be as follows:

> "The Government intends to promote all appropriate measures to ensure the rapid and equitable expansion of information and communication technologies (ICTs) for purposes of national economic and social development. The first objective of this policy shall be the provision of access to a basic level of telephone service in all rural and low-income urban areas. The [Regulatory Agency] shall develop specific indicators of ICT access, consistent with international experience and precedent, and shall identify appropriate targets for moving toward universal access nationwide within a reasonable time frame. It shall periodically evaluate the progress of the industry toward achieving these targets, and shall adopt such policies and mechanisms as may be necessary to ensure their achievement, in coordination with national economic policy, and fair market principles."

In addition to outlining these objectives, the law and policy should clearly define the basic obligations of industry operators to support their achievement. Although the specifics of implementing these obligations, in terms of licensee roll-out commitments, USF contributions, interconnection, and so forth, should be left to the regulator to define, the law must provide an unambiguous assertion of the obligations, so that there can be little chance of carriers manipulating or avoiding the system due to legal ambiguities. Potential language could be the following:

> "Every licensed ICT operator or service provider (as defined in this Act) will be obligated to contribute to the achievement of national Universal Access objectives as a condition of its license or authorisation. The [Regulatory Agency] shall define these obligations in the course of exercising its licensing and regulatory responsibilities.

Note that in many countries, policies, laws, and license provisions may already exist that define certain roles and responsibilities for network development, carrier of last resort, and Universal Service. Where traditional state monopoly telephone operators remain dominant, these obligations typical fall primarily or solely upon such carriers. In these cases, or where development obligations are spread among several existing entities, the enabling statutes and their implementation need to take into account the transition from previous roles to the new regime. This includes defining a clear timetable for introduction of the new Fund, and for removing or modifying current operators' obligations, as well as introducing the new ones. Where certain mandated construction programs may already be underway under the old policy that generally conform to the Fund's objectives, these might be taken into account by the Fund Administrator as sufficient, for some interim period, to fulfill an operator's Fund contribution requirements.

Mandate establishment of Universal Service/Development Fund

The establishment of a USF should be explicitly required under the statute or policy, although its specific parameters and implementation should be defined by the Fund administrator. The establishment provisions should also set forth a timetable for initiating the Fund, and refer to the objectives and obligations as the basis for the Fund's activities. Representative language:

> "A Universal Service Fund (USF) [or equivalent] will be established on or before [DATE]. All funds collected by the USF will be allocated to assist in the rapid development of ICT infrastructure and services in areas that are inadequately served by present operator networks and services. All licensed or authorised operators and service providers shall be required to contribute to the Fund."

Define responsibilities for implementing and administering the Fund

The enabling statute must identify, or create, the institution that will administer the Fund, and define the responsibilities and authority of that entity, and any advisory board or committee. Assuming the administrator will be the National Regulatory Authority (as recommended below), other key provisions should also be laid out in the law, such as the use of separate budgets and accounting, including the source of the Fund's administrative budget, and the general responsibilities for utilising the Fund. Representative language:

> "The Fund will be administered by the [Regulator], and shall be separately identified under the [Regulator's] operating budget. The [Regulator] will establish a committee of operators, service providers, users, and government officials to advise it on the most effective use and operation of the Fund. The amounts and uses of the Fund will be made public, and subject to independent audit. The precise form and working of the Fund will be determined by the [Regulator], following consultations with the Government, the public, and the ICT industry. The [Regulator] shall establish specific procedures for identifying qualified locations, and for inviting competing proposals from operators to utilise USF funds in support of investments in those areas. The administration costs for operating the Fund shall be determined annually by the Administrator, and paid from among collected funds, subject to audit and review by the [Regulator]."

Note that it is preferable that the statute not define in much greater detail the operating provisions for the Fund, including the precise amounts of contributions or expenditures, and other implementation details. A well organised and properly qualified Fund administrator should be authorised to make those decisions on the basis of its analyses of the market. Thus, the majority of provisions recommended in the following sections of this model USF policy should be determined by the Fund administrator/regulator itself, following the general authorisations and obligations set forth in the statute or national policy.

Emphasise market-oriented, non-discriminatory principles

It is important, from the outset, to establish the clear principle that the Universal Service Fund is not intended as a substitute for private market incentives and investments, nor should it interfere in any way with competitive market forces. This principle should be clearly stated in the enabling legislation, to ensure that the Fund's activities always conform to market-oriented and non-discriminatory standards. Sample language can include the following:

> "Competing operators in the same market may not be subject to different levels of obligations to support Universal Access that would result in discriminatory treatment of one operator versus another. No USF funds will be utilised to support investments that would otherwise be made by private operators on purely commercial terms, nor shall funds be utilised to the competitive advantage or disadvantage of any operator. To the greatest extent possible, USF funds will be employed to facilitate investment in market-oriented, sustainable operations, which will not require public subsidy following initial start-up funding."

Establish enforcement and dispute resolution powers

The authority of the Universal Service Fund's management to implement and enforce its decisions, especially the collection of payments from all mandated contributors, must be strongly established in the law. Similarly, it should be clear that the Fund administrator has final authority over Fund disbursement decisions, subject only to appeals concerning misapplication of the Fund's own rules. It is important to design this aspect of legislation and policy to minimise frivolous legal maneuvering and stalling by reluctant participants or strategic competitors. Some possible language (subject to legal review in each country) includes:

> "The Fund administrator shall have full power and authority to implement the provisions of this Policy/Act, subject only to the oversight of the [Regulator] Board of Directors [or equivalent]. The administrator shall be explicitly empowered to demand and collect payment of required Fund contributions from designated service providers according to the requirements of their licenses, and of the Fund's rules. The administrator shall also have final decision-making authority over Fund allocations and disbursements, with appeals to the Board permitted only with respect to alleged violations of the Fund's own mandate or procedures. The administrator shall mediate and resolve any disputes that may arise concerning collection and uses of the Fund, and shall have the authority to enforce its provisions through its general enforcement powers." [Specific enforcement powers (fines, sanctions, etc.) would be defined elsewhere in the Regulator's general authorising legislation.]

2.2 Sources of contributions to the Fund

The USF policy (as defined by the Fund administrator in keeping with the enabling provisions of the law) must clearly define the sources from which funds will be obtained to accomplish its objectives, and the precise obligations and terms under which such funds will be collected. The most common practice among Funds being instituted around the world, and the recommendation of this model policy, is to require **direct contributions from all telecommunications service companies**, in terms of a defined portion of their revenues. (Often other sources are also included, especially at the outset to help launch the Fund, such as direct Government or even donor contributions, and revenues from spectrum auctions or carrier privatisations.) Beyond this basic principle, there are many detailed provisions of this component of the policy that need to be determined. Among the key elements recommended for the model policy are described in the following sections.

Equitable contribution by all market participants

The most equitable and competitively neutral practice for obtaining Fund contributions is to require all market participants to contribute an "equivalent" amount, by setting a **fixed percentage of designated revenues** as a common obligation. The key questions to be clarified under the policy are: what constitutes a "market participant"? Which "designated revenues" are covered by the percentage? And, is there a basis for differential treatment of different types of services or operators? This model policy recommends the following provisions in response to these questions. (Note that these are general recommendations, not necessarily exhaustive or specific. Each country's laws would have to describe explicitly the definitions of which types of companies and activities must contribute to the Fund, in relation to the market structure and range of licensees. Legislative language should be as unambiguous as possible to avoid conflicts over which firms may be obligated to contribute. .)

Who Should Contribute?

Generally, the range of companies and operators that should be required to contribute to the Fund are those which come under the regulatory auspices of the telecommunications regulator, and/or which offer services considered to be included within the definition of "basic and enhanced communication", irrespective of whether they are dominant or non-dominant competitors, and without regard to which technologies (e.g., wireline, wireless, VSAT) they may employ. These would include, at a minimum:

- Fixed telephone service providers (local and long distance);
- Mobile telephone and paging service providers;
- Data and leased line network and service operators;
- Internet service providers;
- Communications equipment suppliers;
- Other value-added service providers.

Where "Convergence" policy opens the market for new traditional two-way communication service operators to be offered by multimedia companies, and vice-versa, it may be appropriate to expand this list to include:

- Cable television network operators;
- Broadcasters (radio and TV);
- Electronic publishers; and
- E-commerce and information technology suppliers.

(Again, legislative language must be as specific and unambiguous as possible.)

What Revenues Should be Covered?

In principle, operators should contribute a portion of all revenues derived from services that are directly or indirectly linked to the basic and advanced ICT infrastructure and services to be supported by the Fund itself. These should include, at a minimum:

- All basic local and long distance telephone services and related features;
- All data transmission, private network, and value-added communication services;
- Mobile services, including owned and affiliated systems;
- All revenues from interconnection, settlements, and other services rendered to outside (non-domestic) operators;
- All revenues from communications equipment sales and rentals;
- All retail and wholesale Internet access and related services;
- Cable TV and other "Convergence" service revenues provided by competitive communications operators.

Revenue categories that should potentially be excluded from Fund contributions are those derived from firms' activities that are essentially unrelated to telecommunications services, as well as inter-operator payments among domestic operators for facilities and services. Non-telecom revenues may include real estate transactions, outside investments, consulting and advisory services, and third-party marketing deals, among others. Domestic inter-operator payments would include interconnection charges, wholesale facility lease payments, charges for unbundled network elements, and payments for other relevant services such as third-party billing, directory listings, and so on. As communications suppliers become increasingly diversified, it will be more difficult to identify precisely what portion of company revenues should fall under the contribution requirement. Clear and precise accounting records will be required to ensure accurate compliance, and must be defined by the Fund Administrator in advance, by examining the current year accounts of contributing carriers, and identifying appropriate categories in keeping with the contribution policy mandate. When companies seek to change their accounting procedures, or when they add new services, subsidiaries, or other revenue sources, there must be a requirement to file a report proposing how the changes would affect the carrier's contribution formula, which would be subject to the approval of the Administrator.

Should Anyone Receive Special Treatment?

The goals of competitively neutral, equitable treatment of market participants (see Section 2.5) suggest that all firms participating in the communications business should contribute comparably to the USF. There could be circumstances, however, in which specific operators or service groups might merit special consideration, and potential exemption from Fund contribution. This could apply to two particular types of situations:

- Small, start-up companies in new markets seeking to develop business opportunities that the Fund views as valuable to sector growth (one important example of this category could be Internet Service Providers (ISPs); and
- Service providers offering communication services in locations and to users that are within the scope of the Universal Service mandate itself.

In general, it is potentially a conflict of policy objectives to promote development through fair competition, while at the same time supporting favored operators in relation to USF policy. The ideal approach would be to provide incentives and support to these types of activities through means *other* than exemptions from USF contributions (e.g., tax policy, tariff or interconnection discounts, public or private grants, etc.), so as to maintain the strict neutrality of the Fund's practices.

Contribution amounts determined through appropriate market analysis

The determination of the necessary amounts of Fund contributions by industry operators should ideally reflect a careful analysis of market conditions, and of the key economic factors that will influence the Fund's success. Most developing countries have to date not followed such an approach, and have instead mandated from the outset essentially arbitrary contribution levels, such as 1% to 5% of gross revenues, or similar factors.

This model USF policy recommends that the Fund administrator be responsible for conducting the initial and ongoing analysis of appropriate Fund contribution levels, subject to some basic parameters and objectives. In sum, the Fund should seek to collect the "optimal" amount of income needed to accomplish its mandated goals in the shortest time possible, while minimising any adverse, distorting effects upon contributing carriers and the market. The analysis that should be undertaken (and periodically revised) includes the following elements:

- ***Needs assessment***. A thorough analysis of the levels of unmet and underserved demand for basic and advanced information and telecommunications services (including assessments of operator-provided data, and independent research), identifying locations, populations, and business sectors with the greatest needs, and the areas and types of services that the market is least forthcoming to provide.

- ***Cost analysis***. A study of the probable levels of investment and operating costs required to deliver needed services to the target user populations. This should

seek to estimate costs over at least a 5-year horizon, taking into account projected changes in demand conditions and other evolving factors.

- ***Revenue/demand forecasts and fee calculations***. Forecasts of the revenue streams likely to be earned by all participating (and anticipated) industry operators during the study period, adjusting for any price elasticity effects resulting from the imposition of USF charges, and other expected market changes. Based on these estimates and the cost results, the Fund administrator should set the fee percentage required to generate the necessary income, but without creating too burdensome an obligation.

Limited options for "in-kind" alternatives to direct financial contributions

The objective of universal access policy is not to collect and spend money, but to promote direct investment in infrastructure and service development. It may therefore be desirable, under appropriate conditions, to encourage "in-kind" investment by industry operators as a potential alternative to financial contributions. The principle of in-kind investment is that an operator may expend its own capital to construct new telecommunications facilities in designated underserved areas, and may deduct at least some of the costs of these investments from its calculated USF contribution requirement (this option is sometimes referred to as "pay or play"). Where this is permitted, it is important that the economic value of such investments be equal to the value of funding contributions that would otherwise be required of the operators. The nature, location, and scope of in-kind investments must be equivalent to those undertaken through the use of USF funds.

These considerations are the responsibility of the administrator, and can lead to complex accounting and economic evaluations, as well as potential misuse of the practice. The in-kind option, therefore, should be introduced only when the Fund has been fully established, and its administrators have sufficient experience and information to evaluate proposed in-kind projects according to appropriate criteria.

2.3 Management and administration of the Fund

The fundamental administrative issue with regard to the Fund is the question of what entity or authority will have responsibility for managing its operations. Here again, there is fairly strong consensus among a majority of countries implementing such policies, that USF fund administration should come under the control of the national telecommunications regulatory agency, where it is separate from the incumbent operator. This model policy thus recommends such an arrangement, assuming such an independent regulator exists within each country implementing the policy. Where no such regulatory authority has been established, it will be necessary to create a new agency or institution to administer the Fund, at least on a transitional basis until a new regulator can take over those responsibilities.

Management autonomy

Within the regulatory institution, the operation of the Fund should be a stand-alone function, separate and distinct from the other regulatory activities relating to licensing, tariffs, competition, spectrum, and so forth. This suggests the creation of an autonomous Division or Office within the regulatory agency, reporting directly to it senior director(s), and with its own clear authority mandate to carry out the requirements of the Universal Service Fund policy.

The Fund's management officials should be able to draw upon other resources of the regulator to support their activities, such as market studies and economic analysis, but there should be no bureaucratic barriers to dispensing USF funds and pursuing mandated projects. This implies, for example, that day-to-day approval and disbursement decisions of the Fund should not require review or formal approval by agency authorities outside of the USF office itself; the agency director should chiefly take the role of overseeing and coordinating USF policy in connection with other regulatory initiatives.

Independent budget, separate accounting

The imperative to establish the autonomy of the Fund administration similarly requires that its budget be maintained entirely separate from the Regulator's operating budget. This implies that a wholly independent bank account and accounting records be established, solely for the collection and disbursement of the Fund, with no co-mingling with other regulatory or government funds. There should be no circumstance, for example, whereby the Regulator (or any other entity) "borrows" from the Fund, or uses its as security, or otherwise has access to this money. The administrator must issue an annual, public report of all Fund contributions and expenditures, and there should be an annual independent audit as well.

2.4 Fund mission, objectives and priorities

This section addresses some of the core issues that must be decided in establishing and operating a successful Universal Service Fund. In sum, the key questions are: **What is the Fund seeking to accomplish?** and **How should its resources be allocated to achieve these objectives?** There are several important elements to consider; the following discussion describes the components recommended to be included in a Fund mission statement..

Overriding mission and vision

The mission and vision of the Fund should be derived largely from the enabling legislation and policy, but these governing philosophies should still be clarified and expanded by the Fund administration itself. They form the basis for the decisions and priorities that the Fund will pursue during its operation. A representative mission statement could be:

The USF's mission is to promote progress toward the realisation of Universal Access to basic and advanced ICTs throughout the country. In allocating funds toward specific project financing, the Fund will seek to promote the following goals:

- Contribute to national economic development and social well-being;
- Promote technological innovation in the telecommunications sector;
- Promote competition in the telecommunications market;

Establish efficient, self-sustaining, market-oriented businesses, which will continue to expand access to ICTs on their own initiative, requiring the minimum amounts of short- and long-term Fund support possible.

Practical objectives and priorities

Telecommunications technologies are essential to developing countries not merely as means for citizens to communicate with each other, but as a foundation for numerous other activities that are of critical importance to the economy, culture, and social well being of all nations. Thus, any Universal Service Fund must concern itself with the broader impact of telecommunications resources, beyond the mere geographic deployment of basic telephone facilities. In determining the types of activities and investments that the Fund will support, its administrators must seek to create an effective balance among a range of objectives, which in combination will bring the greatest short- and long-term benefits to the society.

In this regard, there are **four major categories of infrastructure and service development projects** that should be supported by the Fund, which are described on the following pages. One key responsibility of the administrator must be to conduct ongoing research and monitoring of the sector to assess on a regular basis public needs in each of these areas, and to structure its allocation of resources to address those areas that are most appropriate and highest priority at any given time, while ensuring that some reasonable degree of investment is made in each area, within the Fund's budget constraints. Note that, in general, the first category, Universal Access to basic telephony, must always be given precedence over the others to a considerable degree, not only to establish a minimum threshold of social equity, but also as a practical technological foundation for supporting the other service categories in most areas. Beyond this foundation, the proposed standards and methodology for determining Fund allocations across the different categories in relation to national needs and degree of development are described in Section III.

1. Provide universal access to basic telephone communication

The concept of Universal Access to basic telephone service implies that every citizen should have the ability to make voice telephone calls when necessary. This is different from the more broad, long-term objective of "Universal Service", which implies that every home should eventually have its own individual telephone service. Universal Access is a comparatively achievable, short-term goal that should be the highest priority of the model Fund. Access to telephone service, in this respect, must be defined in terms that create a practical opportunity to make service available throughout the country as quickly as possible.

The first steps in this direction should focus upon expanding basic telephone network backbone and access line infrastructure to all rural and unserved locations, such as installing at least a minimum standard level of public telephone service in all such locations. This public telephone service must be reasonably accessible to all citizens, in terms of location, technology, quality of service, reliability, and price. It must also form at least a minimum technical foundation upon which further service expansion and improvements may be built.

Part II of this Report provides an in-depth discussion of this objective for the Fund, including a detailed description of a proposed mechanism for utilising USF funds to support expansion of basic telephone network access by national or regional telecommunications operators.

2. Provide access to advanced communications capabilities

The installation of basic telephone network access lines is a first step toward supporting both traditional voice telephone services and more advanced Information Society opportunities in less developed countries and regions. It is thus important to expand the range of the Fund's objectives for providing fundamental communications access network to support the introduction of more advanced capabilities and technologies and services for end users of that network . These especially include access to the Internet, including both the World Wide Web and Electronic Mail. However, these more advanced technologies are not as easily or affordably deployed as basic public voice telephone service; Internet access and all data-related services depend upon a higher degree of technical sophistication in both the underlying network and end-user facilities. Even where the required network technology may be installed, users must have access to computer hardware and software, with adequate processing power to take advantage of Internet-type services. And even where these facilities are available, citizens must have the training necessary to understand how to use them. It will thus be necessary to consider carefully the trade-offs and benefits associated with selected advanced infrastructure deployment projects, as compared with other Fund uses.

Ultimately, the objectives of Universal Access include providing both basic telephony and advanced capabilities as widely as possible, and ideally Fund-supported projects should be aimed toward these combined purposes. Where projects focusing upon basic telephone service infrastructure are implemented, they should include provisions for adequate transmission quality and capacity, and other terms to indicate how other services that use the Internet as a platform can eventually be incorporated. A key option for promoting this objective should be support for establishment of Multipurpose Community Telecentres (MCTs) in geographically dispersed rural (and urban) areas, which can offer a full range of telephone, computer, Internet, data, fax, and other technical services to local populations. Part III of this report provides detailed recommendations on the options and objectives for supporting a telecentre development program with the support of USF funds.

Of particular importance, the training and outreach elements of advanced services projects must be among their most prominent features. It will never be sufficient merely to establish physical facilities, whether computers or data communications networks, without ensuring that these facilities will be utilised by the public to the greatest extent possible. Providing access to advanced information technology services specifically implies fostering widespread education and awareness of their availability, strong emphasis on the knowledge and skills necessary to use the services, and also the understanding of how such technologies can be applied to improve individual and community social and economic welfare.

3. Provide support for economic development and opportunity

The Fund should also be able to utilise some of its resources in direct support of national economic development objectives that are intricately tied to ICT infrastructure. This implies providing financial assistance to selected projects that tend to deploy needed communications infrastructure in locations where existing and emerging business activities will be most reinforced by access to these technologies. In practice, this can mean a variety of technologies, services, and operating arrangements. In some cases, it may mean contributing to the development of concentrated high technology "enterprise zones" or industrial parks, where telecommunications-intensive businesses can locate offices and obtain maximum service for reasonable prices due to scale economies. But in many areas, such support will more likely be smaller in scale, such as the Multipurpose Community Telecentres mentioned above, and elaborated in Part III of this Report. These telecentres not only can provide telephone and Internet access, but also can offer training and related business support functions, to local entrepreneurs in smaller villages and towns.

As discussed in Part III, the concept of the community telecentre as a business "incubator" can be self-reinforcing in many respects. A well-organised and independently run local telecentre can itself represent an important business opportunity within many localities, and can thus serve as a training ground for other new, technology-based local businesses. In this sense, the Fund should focus upon supporting telecentre projects that are based upon legitimate, profit-making business models to the greatest extent possible. This objective differs somewhat from the more basic Universal Access goals, which might require a more continuing form of subsidy, and will more likely be provided by larger telephone carriers on a national basis. In the case of projects designed to promote community-based economic development, the starting point should be initial support for viable, trend-setting local businesses such as telecentres.

4. Provide direct support to public and community service institutions

The final category of Fund objectives involves supporting access by important major public services institutions to needed ICT services. The types of institutions that should be supported under this program include:

- Educational facilities, from primary schools through universities, as well as libraries, and public training institutions of all kinds;
- Health care facilities, including clinics, hospitals, doctors' offices, and similar health service locations;
- Government offices and service centres, both existing locations and new public information centres and kiosks; also public post offices, particularly for e-mail access.

The Fund should consider financing projects that offer to install appropriate communications infrastructure to such public facilities, as well as projects focusing upon creating and customising relevant information content, such as school course curriculum, health care training, and public service information, to be made available through such institutions. Funding support for these projects, however, should ideally be augmented with other public, private, and donor funds that would normally be allocated to support the underlying services of these institutions; the USF's contribution may be a minor element of a separate project initiative to add particular features, or in some cases the USF may take the lead in specifying certain projects, and solicit other participants.

Examples of projects that might be funded under this objective could include Tele-education projects that allow students in rural areas to take classes at universities or schools in other locations; and Tele-medecine projects that connect patients or nurses with doctors in other locations, and allow for consultation or training in specific medical cases.

The Fund may also be utilised to support providing telephone and e-mail access to rural post offices, and the provision of telegram services, or equivalent text messaging services, as well as more advanced public voice messaging services.

2.5 Competitive neutrality and transparency principles

The USF's implementation and activities must be closely in line with the broader liberalisation and regulatory objectives of national telecommunications policy. These principles must be reflected in the designation and administration of Fund contributions, as well as in the criteria and processes for Fund distributions. It should be a fundamental requirement that competing operators in the same market may not be subject to different levels of obligations to support Universal Access, if these differences would result in discriminatory treatment of one operator versus another. Similarly, decisions regarding uses of Fund money for development projects should not be based upon considerations of helping new competitors to gain a foothold in the market, if these operators' proposals would otherwise not be optimal for achieving the stated development objectives. These and similar

market conditions will tend to change rapidly as liberalisation advances, and it will be important for the Fund Administrator to monitor constantly the conditions in the market and the neutral impacts of its activities.

Another key factor in competitive neutrality involves interconnection. All operators should be obligated to interconnect their networks with any service provider that constructs facilities and offers service utilising USF funds, and those operators, in turn, must interconnect their networks with any other carrier seeking access to their customers. Interconnection terms and conditions, including tariffs, should be reviewed by the regulator as part of the approval and evaluation of Fund supported projects. They may potentially differ from interconnection requirements for non-Fund operations, for example to help offset costs and encourage faster investment. (See discussion of tariff related issues in Part II of this Report.)

To ensure that all USF procedures and decisions are equitable and honest, these procedures must be as public and transparent as possible. Every Fund disbursement decision must be based upon an open, public process, in which the opportunity and criteria for obtaining Fund support are equally available to all qualified applicants. Section III below provides further details on the general procedures for soliciting project bids and evaluating competing proposals. Part II of this Report offers detailed procedures for the specific case of obtaining least-cost bids for basic access network franchises.

Finally, as mentioned previously, the Fund's records must be open to public inspection, and subject to annual independent audit. Its decisions must be subject to review when legitimately challenged, initially by the senior Regulatory authority, and ultimately by the Government and/or the Courts in cases of extreme controversy.

2.6 Review and revisions of Fund activities

The operation and objectives of the Fund should be subject to periodic review and revision, both from within the agency itself, and through a process of public and government consultation. Internally, the Fund administrator should issue an Annual Report, containing at least the following information:

- Financial reports: collections, expenditures, reserves, etc.
- Descriptions of projects funded, goals, tasks, budgets
- Review of previously funded projects, accomplishments, problems
- Revisions to target objectives, estimates of progress
- Intended Operational Plan goals and budgets for coming year

After a pre-determined period of operation, for example 3 years, the Fund and related Universal Service Policy should be subject to a full public review and renewal process, comparable to the consultations that should have preceded its initial creation. The review should focus upon the overall Fund mission, its priorities and activities during the preceding period, financial questions and concerns, and especially the evolving conditions of the ICT sector in the country. Coming out of this review there should be a consensus renewal and/or revision of the Fund's mandate, adjusting to changed conditions. Ideally, the Fund's role

should diminish over time, as the market picks up from the incentives and initiatives and takes over the role of serving previously ignored customer groups and locations.

III. Model Fund prototype rules of procedure and operation

This section describes a set of proposed operating procedures and standards for the Model Universal Service Fund. While it is not intended as a comprehensive "manual" of operations, the provisions of this section can form the basis for a Fund administrator to establish its own procedures, consistent with the policy parameters described in the previous section.

3.1 Fund management and organisation

According to the recommended criteria for the Universal Service Fund to operate as an autonomous division or branch of the national telecommunications regulator, it is necessary to create a management and organisational structure for the Fund administration that fits within the framework of the regulator, while maintaining that autonomy. A proposed structure is illustrated in the diagram below, with the following general roles and responsibilities. Note that this is a relatively idealised structure, which might be beyond the resources of smaller countries and limited budgets. In principle, many of the identified positions could be combined (e.g., Director, Assistant Director, Project Managers), with the caveat that such multiple responsibilities would necessarily limit the range and timing of Fund implementation and functioning.

Regulator Board of Directors (Commissioners). The Governing Board of the Regulator, however it may be constituted, should be responsible for setting the overall Policy for implementation of the Universal Service Fund (e.g., most of the provisions of this model). It approves annual Operational Plans and budgets, as well as Annual Reports and audits. It appoints the Fund Director and Assistant Director, and members of the Advisory Committee. When necessary, the Board is the arbiter of disputes and appeals that cannot be resolved by the Fund administration itself.

Advisory Committee. Provides input, suggestions, and ideas to Fund management concerning project priorities, Operational Plans, target objectives, and other key issues. Should consist of appointed representatives from the industry, user groups including consumers, the Government, and public institutions, with emphasis on those most affected by the Fund's activities. Membership should be voluntary, not paid by the Fund, and should be clearly advisory, not controlling, in nature.

USF Director. Oversees all Fund activities, reports directly to Regulatory Board of Directors. Prepares and authorises annual Operating Plan, budget, and project plans.

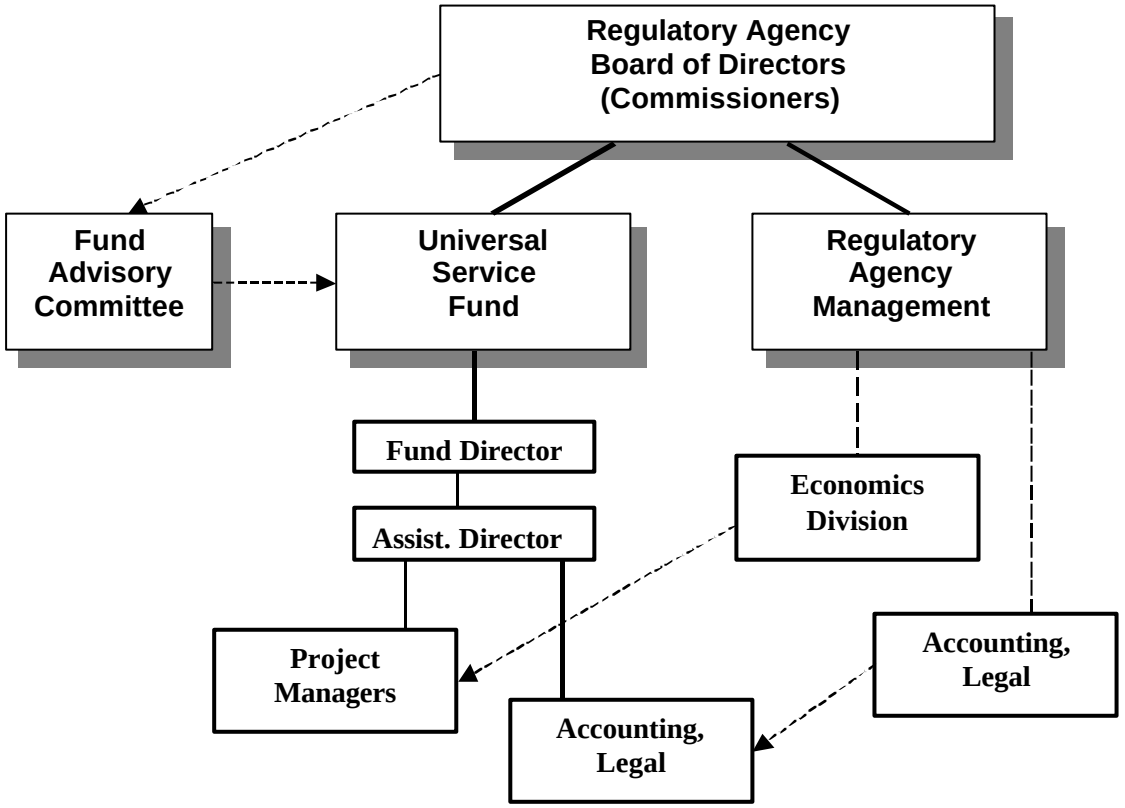
USF Assistant Director. Reports to Director, assists with day-to-day Fund management, project evaluations and decisions, public communication, and report preparation.

Project Managers. A group of several (depending on the size of the Fund) specialists responsible for analysing market conditions, developing proposed project plans, and acting as liaison with Fund recipients in the implementation and evaluation of approved projects.

Accounting and Legal Departments. Personnel in these positions, especially accountants, are responsible for ensuring the proper operation of the Fund, maintaining the books, and executing necessary contracts and other legal documents.

Liaisons with Regulatory Functions. The economics, legal, and accounting departments of the main section of the Regulatory agency should be available to assist the Fund's personnel with their expertise and resources, as necessary.

Figure 1: Proposed USF Organisational Structure



3.2 Accounting standards and procedures

Successful operation of the Fund depends heavily upon accurate and efficient accounting procedures. With potentially very large sums of money transiting the Funds accounts on a regular basis, there is a need for clearly established standards at each stage of the process of collecting, tabulating, and distributing funds. The USF's accountant(s) and Director must establish these standards at the outset, consistent with national public accounting practices and the Fund's mandates. Key features recommended for the model USF are described below.

Contributions

There are four main stages to the process of collecting Fund contributions from industry operators:

1. Payments	Should be made on a **semi-annual** basis, with a 3-month lag (i.e., reflecting revenues for the 6-month period ending three months prior.)
2. Documentation	Payments must be accompanied by a standardised filing form, showing revenues earned and the calculation of the required contribution.
3. Certification	Each contribution and filing must be reviewed and certified by USF accountants before it is officially accepted; irregularities or questions must be promptly addressed.
4. Audit	Contributors must submit an annual independent audit report on their revenue performance and Fund contributions; previous filings must be reconciled with this report, and any discrepancies should be repaired.

"**Pass-through**": Often telecommunications operators prefer to identify their required USF contributions as a separate line item on customers' bills, in effect passing on this cost through their tariffs (although tariffs may not always be increased to cover USF payments). This practice should generally be acceptable as a public relations measure, although it has proven controversial in a number of settings.

Special contributions: In some cases, outside donors and benefactors might be inclined to contribute money to the Universal Service Fund. Such donations may be tied to specific projects that the donor wishes to support, or may contribute to the general Fund. They should not have the effect of reducing required payments by industry operators, however.

Fund Accounts and Budgets

Fund income should generally be collected into a single bank account, separate and independent from the operating accounts of the Regulator, and accessible only by the Fund's management. The total Fund amounts should be divided among three primary budget categories, which can be accomplished either through accounting allocations and/or additional subsidiary bank accounts. These budget categories are:

Project Fund	The bulk of the Fund, to be allocated to development projects according to the Fund's mandate and procedures
Operating Budget	Funds necessary to pay the costs of operating the USF administration: Salaries, benefits, rent, equipment, services, etc. Should typically be in the range of 10% of total Fund income.
Reserve Fund	A contingency amount to cover cost overruns and unexpected needs. Can also include a Special Projects allocation, available as appropriate.

Project Budgets

Projects funded by the USF must maintain their own accounts, which must be available for review by Fund management at any time. Information to be included in these records should include:

- Total project budget estimates (annual and life cycle)
- Fund distributions and uses
- Detailed expenditure records
- Any revenues earned from the project
- Forecasts of future needs and anticipated resources

3.3 Procedures for determining funding allocations

Given that there will always be a severely limited amount of money available to the Fund in comparison with any idealised set of development goals, one of the crucial decisions that the Fund Administrator must make on an ongoing basis is how to allocate those funds among competing worthy investments. In theory, there could be quantitative methods to analyse such choices, by comparing long-term net present value of alternative projects, incorporating social benefits and externalities and multiplier effects. It is worthwhile for the Fund Administrator to pursue such analysis, particularly to help estimate the magnitude of these types of factors and to illuminate the choices it confronts; however, in reality such calculations are impossible to specify with much precision, and Fund allocation decisions (as with all public resource expenditures) must ultimately be made on qualitative – and political – grounds. The discussion that follows presumes that the Fund Administrator will make allocation decisions based upon a combination of quantitative and qualitative analysis, subject to its legal mandate.

Operating Plan, Projects, Concessions

Prior to each annual (or biannual) funding cycle, the Fund Director must establish its intended **Operating Plan** for the upcoming period. This Plan consists of approximate Fund allocations to various types of Projects (primary objectives) that will be supported during the next funding period. A **Project** is defined as any specific Fund-supported activity for which one or more organisations receive financing subject to the rules and requirements of the USF. A Project can be aimed at promoting one or a combination of several of the main objectives listed previously:

- Universal access to basic telephone service
- Public access to advanced info-communications
- Economic development support projects
- Public service institution support projects

In its initial planning stages, the Fund management, Board, and Advisory Committee should establish specific **targets**, in terms of numerical and geographic coverage, as well as ranges of technological facilities and infrastructure, to be pursued under each of these categories. In principle, these should consist of long-run goals that collectively contribute to building an integrated vision and strategy for the country's technological, economic, and social development; they should, however, be realistic enough in each area of investment that meaningful progress can be expected toward each target over a five to ten year time frame. The selection of priorities for funded projects under any given period's Operating Plan should be based upon the current state of progress toward the expansion targets for each category, and the combined national strategic objectives. In general, there is a presumption that Universal Access (network buildout) projects should receive the highest priority and the largest allocation of funds in most countries. The specific emphasis and approach is likely to vary depending upon the geographic and economic conditions of each country, as well as the

present and emerging market structure.[1] However, some amount of funds should in principle always be allocated to each of the other categories, in rough proportion to the degree of achievement of the stated objectives. This approach will help support broader economic and social development opportunities while still emphasising basic needs. As mentioned, the ultimate decision for each Operating Plan's budget allocations must involve an informed judgment on the part of the Administrator, taking into account all of these considerations.

Each specific Project to be funded under the Operating Plan can consist of one or more **Concessions** (or franchises or licenses), depending upon the nature of the project and available funds. A Concession is a specific set of tasks assigned to a particular vendor/operator, for a fixed budget distribution. The specific objectives and tasks, and the scope and number of possible concessions, should be defined initially by the Fund's Project Managers, subject to approval of the Director and the Board, at the outset of the planning period. Upon approval of the Project priorities and objectives, the Project Managers must then describe each project in greater detail, in terms of the specific approach and expectations for concession proposals to be considered under that project. In the case of basic public telephone access projects, the procedures and criteria for awarding these concessions should be clearly defined, and based upon a least-cost bidding methodology. See Part II for full discussion of this element of the Fund's operation. The second major category of projects is likely to be Multipurpose Community Telecentres, whose options and implementation procedures are described in Part III.

As for all other projects that come under Categories 2, 3, and 4 above, these may be defined and implemented according to more flexible and interactive procedures, which will encourage potential concession bidders to offer creative technical and business approaches to meeting those different types of needs. The Fund Operating Plan and Project Managers should specify both general objectives and particular ideas for use of funds in these areas, and should then invite bidders to submit proposals that would meet the objectives in any reasonable and appropriate way. Some examples could include projects aimed at providing high-tech training services, school-based curriculum and technology, small business incubation in ICT services, E-commerce trial projects, and regional networking and collaboration initiatives. The Fund Director should have the flexibility to modify the original project scope and definitions, based upon ideas or concerns presented by bidders.

In some cases, the Fund's managers may define new projects based upon requests brought to the Fund from within various communities. Existing institutions, organisations, and even companies may approach the Fund proposing to obtain financial support for specific activities which are within the scope of the Fund's objectives. The Fund Administrator should have the flexibility and authority to approve certain limited expenditures, even on a non-competitive basis, for these types of worthwhile projects. Such activities should generally not consume more than 5% of the total Fund budget, however, and should be subject to strict transparency and audit regulations.

1 See Navas-Sabater, Juan, Andrew Dymond, and Niina Juntunen, "Telecommunications and Information Services for the Poor," World Bank Discussion Paper No. 432, 2002, pp.25-40.

Determining priority target populations

In order to maximise the benefits of the USF, it is necessary to determine which geographic locations and target populations should receive priority treatment in the allocation of funds and identification of Projects. These should be the areas and population groups that are most at risk of "market failure," where the private market will not readily meet the demand for telecommunications services. The Fund's management should conduct a socioeconomic and statistical analysis of candidate locations, based upon a range of telephone operator and other cost and demand estimates, as well as macroeconomic and key demographic factors, which should result in a ranking of locations and groups according to greatest need. If available, a geographic information system (GIS), showing demographic detail by region can be a powerful tool to map out specific areas by need. The following guidelines should be incorporated in the analysis:

Socioeconomic priority criteria

Locations where economic conditions inhibit pure market-based solutions. In principle, the Fund should only contribute support in locations where the market is incapable of providing needed services on an economic basis. The Fund Administrator must take the lead in identifying such areas, through consultations with existing operators, and review of relevant cost and demand assumptions.

Population with low relative income. Indicators of the level of poverty in a Province, town, or neighborhood, should be among the most significant factors determining high priority for USF funding.

Population not integrated with a centre of development. Communications projects should emphasise areas with the least opportunity for economic development, based upon existing economic activities. The exception would be projects specifically associated with short-term economic development opportunities (Category 3).

Scarce and dispersed population. Populations in the most rural, dispersed geographic areas should generally receive priority over more urban populations. However, some funding should also support needs in more densely populated areas.

Population with low access to infrastructure and communications. A low degree of existing infrastructure and access to communications should also be a criterion, especially for projects that will directly build new infrastructure. For this purpose, however, "low access to communication" can also include barriers to access due to low education and training, so that training-oriented projects for low income and illiterate urban populations can also receive funding.

Historically disadvantaged groups. Particular emphasis should be placed upon promoting access for women, youth, and those with physical disabilities, as well as indigenous peoples who may have been excluded from past development opportunities for political or cultural reasons.

In establishing its Operating Plans and Project priorities, the Fund's managers must weigh these different factors according to the status of development in different areas, the available funds, and the capabilities of the market to respond to needs in different locations.

3.4 Project definitions and criteria

In designing and evaluating specific project proposals, the Fund must establish specific criteria or options for components of each project. Upon the announcement of each cycle's Operating Plan and Project bid solicitations, the Fund must identify for potential bidders the types of components that it will require (or encourage as optional) for project proposals. Project components can include such elements as service scope, technical features, quality and availability, cost, and training and management plans. Note that in all cases only projects that do not directly duplicate activities already underway in the private sector should

be funded. The following sections provide general definitions of the categories of project criteria that may be considered.

Universal access to essential basic telephone services

To attain universal access, projects should be defined so as to include technical requirements or options that will best help achieve this goal . See Part II for detailed discussion of the factors that should be taken into account in specifying universal access development projects.

Advanced telecommunications and information services

There are likely to be a number of different projects designed to promote greater access to advanced technologies and services. The following categories identify some of the service component options to be considered in evaluating such projects. These options also apply to the subsequent sections, on economic development and public institution support.

Bandwidth and transmission quality: All projects promoting access to data and Internet services require facilities capable of transmitting adequate bandwidth (for example, at least 28.8 Kbps per circuit), and of sufficient noise-free quality to ensure services will be functional and practical to use. Ideally, high speed, dedicated data lines should be provided for those projects that can develop wide use access, such as community telecentres.

Access to computers and other devices: Internet related projects also require access to appropriate computers and similar devices that enable use of all Internet-based features. These should be of sufficient quality and technology to allow use of all current on-line service features, and should also be designed for ease of use by the widest possible population.

Electronic mail service: As part of the progress toward expanding access to advanced services, the Fund will consider supporting development of universal access to e-mail service throughout the country. This implies that any citizen may obtain an e-mail address and account for a minimum charge, and may access e-mail through any available means, especially public telecentres, post offices, and Internet terminals, also to be promoted via the Fund. Universal e-mail would not replace commercial options for this type of service, but instead would be available to those without full service Internet access.

Internet (Web) access: Projects promoting Internet access (primarily access to the World Wide Web and HTTP protocols) should include deployment of access sites within reach of the maximum possible percentage of the population. This can be accomplished through multipurpose community telecentres, public Internet kiosks, schools and libraries (see below), and also expansion of commercial Internet services to a wider population, potentially on a subsidised basis.

Voice Message services: Projects that will promote universal access to voice message services, in addition to traditional outbound public telephone services. Such projects would make available voice mail boxes for any citizen, which can be accessed via public telephones, for nominal payment.

Information content: Projects that include the development of relevant information content, in addition to physical infrastructure and facilities. Such content should be targeted to the needs and interests of the communities to be served, as well as of the country as a whole in terms of its strategic integration in international markets. Examples may include information of an educational, cultural, political, or economic nature, and this information should ideally be available in formats (e.g., interactive, multi-media, Web-based, computer software, and hard-copy forms) that will be most useful to the broadest user groups. Information content platforms that can be adapted to customised local needs would be especially valuable.

Training support: Training of both users and providers of advanced services will be a critical factor in many projects, possibly as important as the technology deployment itself. Access to advanced information services will only be valuable if the public is able to take advantage of those services. Projects involving access to computers, Internet, e-mail, and so forth, must therefore include explicit plans for allocating resources to training classes, with special attention for women, youth and other disadvantaged groups or those with special needs. Training should include use of the technologies and services, as well as support for applications that would benefit the community, such as employment, research, business planning, and health and education uses (see below). In some projects, the training component should be combined with community outreach, to ensure that the public is aware of the available new services, and is encouraged to learn and utilise them. Training oriented projects may be especially important in certain urban locations, where facilities may be more readily available, but the public may be less aware of the opportunities from access to information technologies.

Wireless, cellular, and paging services: Projects that offer to provide wireless and mobile services to areas where they are not available; for this purpose the Fund should also consider subsidising the cost of these services for lower income customers who would benefit from them. Such projects may include experiments with introducing new types of wireless technologies that are targeted toward rural and low income populations. Mobile services may be offered in combination with other projects, such as public telephone networks, telecentres, and universal basic services. Wireless access to Internet and e-mail constitute possible options to be considered for future projects.

Cable TV and broadcasting: Advanced technology and infrastructure projects may consider incorporating broadcasting and cable TV components, either through joint ventures or competitive investments. Where the cost of deploying broadband facilities might be shared across multiple services – e.g., cable TV plus high speed Internet access – these projects may be cost-effective, by offering the widest array of services

for the lowest overall subsidy. Projects of this nature must take into account the value of services to the community, as well as competitive options already available.

Economic development and small business support

Projects designed to support the growth of businesses and economic development in specific areas, as well as long-term economic development throughout a country, should include deployment of both basic and advanced telecommunications technologies and services, according to the criteria outlined above. In addition to these minimum standards, however, these projects should go further to include specialised services of particular value to businesses, particularly small and independent businesses. Economic development projects must also be evaluated according to cost and sustainability criteria, and according to the employment, training, growth, and related benefits for the subject communities.

The criteria to consider for these projects include the following:

Full featured telephone services: Beyond basic telephone service access, business-oriented services should include advanced features, such as the capability to place conference calls, to place calls on hold and transfer calls, possible Caller ID service, and more advanced voice mail and message functions.

Access to advanced business data and network services: The Fund should also consider projects that will deploy advanced data services, and voice and data networking, for those locations where growing businesses would benefit from such capabilities. These services should support integrated networks for larger businesses, options for high speed data transmission, and for linking with international partners via the highest quality network services.

Business-oriented Internet services: Enhancements to Internet services available to businesses should include greater bandwidth options, multiple e-mail and Web access accounts, as well as full support for Web site hosting and design, including advanced interactive features.

Community Telecentre and other local telecom business development projects: Of particular interest in this group of projects should be the idea of establishing new telecommunications-related businesses within local communities, which will both serve the public need (as in the previous two categories), and create employment and income opportunities for the local population. A main example of this concept will be the community telecentre, which can be established as a self-sustaining business (with initial Fund support), and can offer public telephone and Internet services, while growing as a profitable business itself. The Fund will support both broad-scale projects intended to develop various telecentres under one organisation, as well as small, individual projects requiring assistance for a single community. It will also support experimental pilot projects in specific locations, designed to evaluate and promote the benefits of ICTs to community development. Note that training must be a key component of any project in this area, as mentioned in the previous section.

Public service institution information and communications support

The types of criteria that should apply to projects supporting public schools, libraries, health clinics, and government offices are similar to those involved with advanced services generally, as well as business support services. In addition, these projects should focus upon the particular needs of each type of institution, in terms of technology, service, assistance, special capabilities, and particularly information content. Some of the project criteria that should be considered are identified below:

Interactive multimedia services and capabilities: For education and training, as well as health care applications, the most useful advanced services should include video-grade transmission, and full interactive functions, to allow for distance learning, remote diagnosis, and similar activities. Projects that introduce innovative technologies and services in these areas should be integrated with projects providing underlying communications and information infrastructure.

Specialised content development: The value of institutional information services will be highly dependent upon the nature and quality of information content available through such services. As with community telecentre services generally, projects focusing upon educational, health, and government services should also incorporate development of targeted information resources in these subject areas. These can include curriculum for education and training, interactive services and databases, and programs to assist users in understanding the services available to them from the government. The Fund will consider supporting such content development projects, including those that may be coordinated with other projects in these fields to provide more broad-based information resources.

3.5 Proposal evaluation and approval

The Fund administrator must establish the criteria that will be used to evaluate proposals that will be submitted in connection with each Project. Those bidders submitting proposals should be aware of these criteria before preparing them (see below). The Fund administration must then undertake a formal proposal solicitation and evaluation process to approve selected bids and distribute funds.

In the case of Universal Access projects to build basic telephone network facilities, the proposed procedures are described in Part II of this Report, and the primary criterion is a least-subsidy requirement. In the case of Multipurpose Telecentres, the dimensions of an integrated program for developing such centres are described in Part III. The following procedures should apply to the evaluation of projects that do not fit into these categories, including stand-alone telecentre projects, and add-ons to access network rollout projects.

Proposal evaluation process for general Fund-supported Projects (Categories 2, 3, 4)

Stage 1. Pre-qualification.

This stage involves the pre-qualification of bids, based upon minimum standards related to the technical and social objectives of the Fund and the project in question. These minimum standards will be set prior to the invitation for proposals, and can be as stringent as necessary to ensure that projects meet the objectives of the Fund. The purpose of this stage is to eliminate proposals that do not merit further consideration, to allow the Project Manager to examine more viable proposals in further detail.

In some cases, the minimum pre-qualification standards may involve specific requirements that all proposals must meet: for example, the location(s) in which services are to be provided might be specified precisely by the project definition. In other cases, the bidders may be allowed to suggest which locations they are prepared to serve. In the first case, the required locations will serve as minimum standards for pre-qualification, and bidders who are not able to serve those locations will be disqualified. In the second case, the proposed locations may not be a standard for pre-qualification, but could be a factor in later proposal evaluation.

The same can be true of other standards, such as maximum cost (subsidy) and minimum quantity or quality of service. The Project Manager will specify in each instance what minimum standards must be met by each proposal. Proposals when submitted must clearly and simply describe how they meet these minimum pre-qualification standards.

Stage 2. Requests for clarification, expansion, or modification of pre-qualified proposals.

For proposals that have been pre-qualified, this stage will allow the Project Manager to request further information from the potential concessionaires, to clarify the information submitted in the original proposals. This will allow the Fund officials to improve their understanding of the proposals before final evaluations.

In some cases, the manager may also request that bidders expand or modify their proposals in some manner. Such a request must be provided to all potential bidders, and can involve including additional services or locations, new technological or facility options, or expansion of project implementation or management plans. Any potential modifications must be aimed at ensuring that all projects provide the country with the best possible services for the most reasonable cost.

Stage 3. Evaluation of revised proposals and award of concessions.

The Fund Director and designated officials shall review final revised proposals for purposes of awarding Fund-subsidised project grants, based upon the criteria discussed in the following section. This review shall involve in-depth evaluation of pre-qualified proposals according to all relevant criteria. Each proposal shall be ranked within each of the six criteria

categories. Thus, one proposal may be ranked highest on the Quality of Service criteria, while another may be ranked first under the Implementation Plan, and so forth.

The Project Manager must indicate in advance which criteria are most important for any particular project. In some cases, for example, location or quality may be more important than benefits or quantity (although all criteria may still be relevant). After ranking all proposals under each of the criteria categories, the managers must evaluate the results, to determine which proposal may be clearly superior to others according to the most important criteria, and the overall ranking. If two or more proposals are essentially equal based upon this qualitative ranking and evaluation, the concession should will be awarded to the bidder requesting the least subsidy.

Evaluation Criteria

The final evaluation and award of a concession requires examination of the detailed elements of concession proposals according to six possible types of criteria:

1. Location: geographic locations to be served
2. Quality of service: technology and services to be provided
3. Quantity of service: population served by project
4. Community benefits: economic and social impact of project
5. Implementation plan: feasibility and sustainability of proposed plan
6. Cost: amount of subsidy required
7. Bidder qualifications: the bidder's to delivering on its proposals

The Fund Director and Project Manager must establish both the minimum required standards (for pre-qualification), and the relative importance (for final evaluation) of these criteria for each solicitation, and must inform the bidders of these requirements and priorities before bids are submitted. The winning bidder should be the proposal that best meets the criteria that are the most important for that Project, following the approach described above.

The following sections describe in greater detail the types of information to be included in the proposals and considered in the evaluation, under each of the criteria categories.

Location

As discussed in Section 3.3, for some projects the locations where services are to be provided will be defined as part of the main project criteria. This can be true, for example, of projects that require offering service to all villages of a certain size, or to specific geographic regions. In other cases, however, it will be possible for projects to be implemented in several different potential locations, either by national companies or by local bidders from within the communities themselves. In these cases, the exact locations proposed to be served can be a decisive factor in determining the winning proposal(s).

The Project Manager must determine which kind of location criterion to emphasise for each project solicitation, and must inform the bidders of its priorities. Location criteria can be established in terms of any of the categories identified in Section 3.3. In other words, for each solicitation, Fund officials must duly inform bidders as to the priority geographic criteria for each project, e.g.:

(a) rural or low density locations,
(b) economically disadvantaged locations, or
(c) locations with short-term economic growth potential

In part, the choice of location criterion will depend upon the nature of the project; e.g., economic development projects may specifically target areas with the best growth potential, and universal access projects may target the lowest density locations. Some other projects, however, may be provided in any such locations, and the Project Manager must determine in advance which type of area it most seeks to serve from a particular solicitation.

Quality of service

The quality of the services to be offered under a given project can be defined in a variety of different ways. Among these are the nature of the technology to be deployed, the extent of service features and functions, and other qualitative aspects of the project definition. Section 3.4 above identifies numerous types of service quality criteria that can be established for project solicitations according to the type of project. For each project, the Project Manager must identify any specific minimum requirements for quality of service, and may also suggest possible options that bidders can consider proposing in addition to these minimum standards. The project definition will also describe the degree of importance (priority) that it will place upon quality of service factors in evaluating project proposals for the adjudication of the project.

Quantity of service

This criterion measures the scope of the proposed services, in terms of the number of persons, households, businesses, or other targeted users who will gain access to the service if the project is implemented. Evaluation of this factor may involve a strict counting of the quantity of facilities to be installed, or it may require a more in-depth assessment of the realistic availability of services to specific groups. For example, merely installing telephone or information technology equipment in a location may not mean that all residents realistically have access to the services provided by that equipment; the evaluation may need to consider how many people will be trained and encouraged to use the services, under the proposed project plan.

Community benefits

This criterion estimates the value of the proposed services to the communities that they will serve, in terms of both social and economic benefits. It does not imply a strict quantitative measure of such benefits, which will usually be impractical, but rather a qualitative comparison of different project proposals according to their expected community impact. Factors to be considered in evaluating community benefits can include the role that services will play in enhancing the life of the community, in fostering economic growth, job opportunities, education and training, and social welfare. Plans that specifically reach out to the community, to include them in the operation and development of services, should generally be given higher ranking on this criterion. Proposals should also be encouraged to include gender-appropriate plans, to ensure that women as well as men are adequately represented and served.

Also, the tariffs to be charged for services can be a factor here, as lower tariffs imply greater value to users as well as greater use; however, tariffs must also be high enough to support a sustainable business plan, as discussed under the next criterion. Another factor is the installation of residential lines that could meet the potential demand of the area.

Finally, some "community" benefits may in fact be benefits that occur on a more broad, national scale as well. For example, the impact of the project on the overall telecommunications market in the country should be considered, as one important goal of the Fund is to promote development and competition in the market, which should lead to new opportunities and benefits for all communities. Projects that promote or reinforce such competitive opportunities may be considered more beneficial in the long run.

Implementation plan

Project proposals must also be evaluated according to the viability and completeness of their implementation plans, which in many cases may be a vital factor in determining the success or failure of a project. An implementation plan requires both a short-term process for installing facilities and services, and a longer term plan for operating and maintaining (and expanding) the services, to ensure that they will be sustainable after the USF subsidy has been exhausted.

Implementation plans to be included with project proposals should incorporate the following types of information:

- Business Plan: 3-to-5 year budget projections (costs, revenues, other financing), breakeven analysis, market demand analysis;
- Tariff and other pricing proposals, including interconnection agreements with other carriers;
- Management Plan: organisation of project, responsibilities of personnel, identity of key managers;
- Implementation schedule: specific dates and sequence of events, timing of equipment installation, operational start-up dates;
- Publicity and Community Inclusion Programs: plans for inviting participation in the project from affected communities; gender awareness considerations; publicity and outreach to promote use and benefits of services;
- Monitoring and reporting: plans for informing USF managers of progress in implementation, public response to services, lessons learned, identified obstacles and their possible solutions.

Cost

The cost of a project will be defined in terms of the proposed amount subsidy requested from the USF to support its implementation. Additional costs beyond the subsidy should not be directly considered, but should be a factor in the evaluation of community benefits and the implementation plan, as discussed above. For projects that are otherwise considered to be equivalent according to the other evaluation criteria (or which are defined according to specific requirements and constraints, such as Universal Access projects as outlined in Part II), the proposal requesting the smallest amount of USF subsidy should be awarded the concession.

Where it is not possible to compare projects according to exactly equivalent characteristics, the amount of subsidy requested must still be a criterion in the selection process, but must be included with the other factors in the evaluation, to ensure that the winning proposal is that which provides the greatest net social and economic value.