

This chapter addresses issues related to the financing of universal access and service (UAS) and of related ICT infrastructure and service development.

As explained in [Chapter 3](#), prior to the onset of market liberalization, the traditional or administrative approach to meeting UAS objectives was to place certain universal service obligations (USOs) onto the dominant incumbent operator. If losses were incurred from the USOs, it was expected that the operator would finance them through cross-subsidization from profitable network services (e.g., long distance and international), through access deficit charges applied to other operators, or through complicated universal service compensation schemes. Donors and multilateral international financial institutions were often prepared to finance investments into rural areas which were assumed to have low or negative financial returns. Today, this approach is unlikely to be used; in most developing countries, no one expects incumbent operators to accept USOs any more. Furthermore, since the mobile revolution, rural service expansion has become more attractive commercially, while even the broadband capabilities of mobile and new wireless technologies offer new possibilities for extended service reach. But some form of funding has to be found to finance gaps which still exist between the market's commercial boundaries and the targets UAS policymakers may wish to reach.

This chapter commences, in [Section 5.1](#), with an introduction to the *general trends in ICT development and UAS financing*, showing the breadth of policies and measures which are either financial in nature or have a bearing on financing and investment for extension of ICT services. The model of a mainly industry-financed Universal Access and Service Fund (UASF) using the principles of Output Based Aid (OBA) to finance investments targeted under UAS policy has become a well-known financial instrument for developing countries.

As noted in [Section 3.2.3](#), there are some legitimate and understandable concerns regarding UASFs, fuelled mostly by a few unfortunate examples. Some operators have expressed preference for alternatives, such as accepting reasonable rural build-out targets in their licence, or negotiating ex-ante specific rural universal access and service (UAS) targets with the regulator in exchange for relief from UASF levies or taxes (this is discussed in [Sections 2.4.1](#), [Section 2.4.2](#) and [Section 2.4.3](#)). Also, there have been concerns raised over the complexity of establishing and managing a UASF. However, negotiating fair UAS contributions for all operators, which are equitable between them and accepted as fair, is not necessarily an easy feat either. Most of this chapter deals with the issues related to UASF mechanisms:

- *Sources and market capacity* in [Section 5.2](#) considers the limits of the market place to afford and support subsidized UAS investments; and
- *Institutional aspects* in [Section 5.3](#) surveys the range of issues surrounding the constitution and management of UASFs, their staffing, accountability and transparency.

[Section 5.4](#) then discusses *other (non-UASF) approaches* to funding and the strategic collaborative and complementary role that other players can have in the expansion of UAS infrastructure and services.

#### Reference Documents

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- [Universal Access & Service \(UAS\) and Broadband Development](#)

### 4.5.1 GENERAL TRENDS IN ICT DEVELOPMENT AND UAS FINANCE

Over the last decade, the telecommunications sector has experienced a period of unprecedented growth at almost every level, from mobile telephony to broadband Internet, e-commerce, e-government, tele-education and medicine. At the same time, the style and sources of finance made available for ICT development have shifted radically. Traditionally, ICT infrastructure financing came either from government budgets and revenues generated by the state post and telecommunications authorities, or from donor and international financial institution (IFI) programmes supporting major capital infrastructure investments. Now, donor community financing plays a relatively small role in infrastructure development, except in some categories such as Output-based Aid (OBA) finance (see [Section 5.2.2](#)). Donor strategies focus at the government level, mainly on policy and regulatory support with almost total reliance on private capital for infrastructure and service development. Beyond policy and regulatory support, donor, non- government and other

institutional initiatives focus mainly on fuelling ICT service application and capacity development. Private investment depends heavily on the regulatory climate, with government and donor activities playing an enabling role. However, since the market cannot achieve everything policymakers desire without additional inputs, a number of complementary activities now work together to bring about effective investment in ICT services and successful take-up beyond the urban markets. In a 2004 report of the World Summit on the Information Society (WSIS), in the context of infrastructure development and improved access to ICT services, it was noted that national governments and other stakeholders now have “many tools and opportunities available to them to enhance the attractiveness of their ICT markets for investors and financiers” [1]. The mix of key tools and measures for enhancing ICT markets can be summarized as follows:

- Regulatory reform – in particular, promotion of a level playing field, open access and fair competition for ICT investments and service provision, policies that entice new entrepreneurial investment in under-served areas;
- Universal Access and Service Funds (UASFs) and other public finance mechanisms such as loan guarantees and public private partnerships (PPPs) to enhance and target investments into priority areas in need of special finance;
- Fiscal measures – enabling tax, tariff, import, and business regulation policies designed to reduce risks and financial burdens and provide incentives to ICT investors and financiers;
- Demand support and capacity building – initiatives in e-governance, education and training, budget allocations within the public sector for ICT networking and service applications, as well as government pre-purchase of capacity through open tenders (i.e., the government commits to a medium-term contract with one or more providers to purchase capacity in bulk and hence becomes an anchor tenant, which lowers the risk to the private operator in building the infrastructure). Another measure of demand support and capacity building is open procurement plans that leverage ICT industry competition and private sector development; and
- Regional investment – support and promotion of domestic, regional and other South-South investments (e.g., mobile communications, software and systems houses emanating from emerging markets), and increased sub-regional and regional cooperation to address infrastructure and last mile gaps.

This trend and balance of activities is underlined by a 2005 report of the OECD’s Development Assistance Committee (DAC) countries. The report shows that official government-to-government aid commitments amongst its 22 DAC members for ICT infrastructure declined strongly from USD 1.2 billion in 1990 to USD 194 million in 2002. The rationale for most donors to withdraw from providing ICT infrastructure finance was linked to the correct assumption that the private sector would play an increasingly strong role in the provision of services [2]. Declining donor assistance to ICT infrastructure is only part of the picture for the role of Official Development Assistance (ODA); many donors, while still engaged in some bilateral ICT-specific programmes, are contributing to public private partnerships (PPPs) and international multi-donor initiatives for ICTs, while also integrating ICT components into their development programmes for other sectors. The Practice Note Donor ICT for Development Programmes and Expenditures documents this trend for all 22 DAC members of the OECD and the European Union and lists many of the contributions to multilateral and multi-donor initiatives supported [3]. When the additional role of non-government organizations (NGO’s) and other private sector organizations, including technology investment trusts, philanthropic agencies, corporate social responsibility (CSR) programmes, and community groups are considered, the spread of activities in the ICT realm is seen to be large. With some notable exceptions, the role of these organizations is generally more related to applications, IT human resource training and capacity building than to infrastructure and service development. They are introduced in [Section 5.4](#).

## Practice Notes

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- [Donor ICT for Development Programmes and Expenditures](#)

### 4.5.2 UNIVERSAL ACCESS AND SERVICE FUNDS

Since many Universal Access and Service Funds (UASFs) have recently been legally established and put into operation, there is a wide array of experience available that can be used to identify precedent and best practices in terms of financial sourcing and the role of the market. In addition, there is a growing body of experience with Output-based Aid (OBA), which relates to the performance-based disbursements of subsidies typically used by UASFs, after their competitive subsidy allocation.

[Section 5.2.1](#) reviews the different sources which can provide finance for a UASF; it outlines most common practice and discusses the case of a more balanced funding for UASFs from different sources, looking at advantages and disadvantages of each funding source.

In [Section 5.2.2](#) the question is answered who should contribute to a UASF if an industry-levy is part of the financing

source for it, and also on what revenue base the contribution should be levied.

[Section 5.2.3](#) explains how the size of UASF programme and the appropriate level of contribution from industry players is determined.

#### 4.5.2.1 SOURCES OF FUNDS

Universal Access and Service Funds (UASFs) are generally financed from one or more of the following sources:

- Government general budget (in a small minority of cases, including one of the first funds, Chile's Fondo de Desarrollo de las Telecomunicaciones);
- Industry levy, as a percentage of annual revenue, on certain classes of licensed operators;
- Various other regulatory sources such as the proceeds of license competitions, frequency spectrum auctions and fees; and
- Once-only contributions from government, financed by loans or grants from international donors such as the World Bank, contributing seed finance to assist UASF start-up in the early years.

Most UASFs are financed mainly through annual operator levies although the legal instruments (e.g., the communications law) establishing the fund might typically name all potential sources, or be worded in an open fashion to include all possible sources. However, a stronger case could be made that the funding should, if possible, be more balanced between the first three financing sources. The perceived advantage of a UASF financed mainly by operator levies typically is that it is independent of available government funding, and therefore particularly attractive for low-income countries with limited resources and more pressing funding priorities. However, countries with more resources could consider contributing some amount from the government budget to the UASF. After all, the UASF implements government policy. It is important though that the UASF remains independent from day to day politics to fulfil its long-term UAS objectives, and that it continues to focus on sustainable solutions with effective and cost-efficient private sector participation. In some cases, partial government funding of a UASF might create some administrative complications, as the UASF then has to comply with government procurement rules. Another option is that the government finances the administrative overhead of a UASF, e.g. the cost of the special department of the regulator. A strong argument can also be made that at least part of the proceeds of radio frequency auctions and licence competitions should be used to source a UASF [1]; Guatemala's FONDETEL used this financing approach. Auction proceeds are paid by various industry players for a national resource. It typically is simply added to the government budget, but it might be more appropriate to use this money particularly for ICT development, such as to fund UAS or special measures for broadband development (e.g. increasing PC ownership or equipping schools with computer labs and broadband access). Other sources are accumulated surpluses of regulatory fees: in 2007 the regulator in Botswana, BTA, pledged USD 1.6 million (BWP 10 million) of its surplus in regulatory fees for the use of the future UASF. Important in all cases is the predictability, timing and the frequency of the funding to allow proper planning and constancy for the UAS implementation. Also, regardless of the financing sources, a special fund like the UASF, administered often by a department of the regulator, with stringent transparency and other requirements, appears to be a helpful instrument to implement UAS policy efficiently. In conclusion, each country can evaluate which mix of financing might be available and appropriate for the UAS policy implementation. The contribution of multilateral and bilateral donors towards the UASF financial base is significant in the early years in some cases [2]. This is because some institutions and donors – notably the World Bank and the UK's Department for International Development (DFID) – are strong supporters of the transparency provided by Output-based Aid (OBA) and subsidy tendering mechanisms which are favoured by many UASFs. An introduction to the OBA mechanism is provided in the Practice Note Output-based Aid (OBA) explained. As described in [Section 5.4](#), a large number of other sources, including international donors, non-government and corporate organizations are also involved in financing and supporting telecommunications public access, and ICT projects and applications, individually or through multi-donor initiatives. These often encompass applications across several sectors of the economy, from education to commerce, health and governance. The investments are sometimes associated with a UASF programme, but often independent of it. These other sources are thus complementary to UASF programmes, but also have the ability to leverage themselves through inter-agency collaborations and partnerships. This can perform a most vital role in creating the capacity for ICT user development and market emergence in otherwise very weak and non-commercial stages of development.

#### Practice Notes

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- [Output-Based Aid \(OBA\) explained](#)

#### Reference Documents

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- [Output-Based Aid in Mongolia](#)

- **Output-Based Aid in Telecommunications**
- **Output-based aid in Uganda: Bringing Communication Services to Rural Areas**

#### 4.5.2.2 INDUSTRY LEVY – WHO SHOULD CONTRIBUTE?

Given that operator levies are generally the most common source of funding for Universal Access and Service Funds (UASFs), typically, all major operators, fixed and mobile, are required to contribute. In some cases (e.g., Uganda), ISPs and even post and courier companies have been required to contribute, even though many ISPs are still only marginally profitable and smaller ISPs often state to be unable to afford a contribution. On balance, it is probably best to require all telecommunications and Internet service providers (including VoIP service providers) to contribute to the UASF. The matter of affordability can be addressed in a number of ways; the most practical approach may be to set a minimum size limit (e.g., annual revenue or market share [1]) above which a company becomes required to contribute to the fund.

Regulators and governments need to be careful to ensure equity both in the contributions levied and in the eligibility for subsidy allocations. These have at times been controversial issues, especially where mobile operators have been major contributors, while the rules of the UASF have stipulated that recipients should be fixed service providers or the technical specifications of the bidding rules were clearly geared to fixed-only solutions (see [Chapter 3](#)).

Two countries with large UASFs, India and Malaysia, are examples of this type of situation, caused by UASF rules that were created before mobile telecommunications became prominent and accepted as providing basic services. UASF rules lagged behind developments in the market place and made no provision for the key role that mobile operators can and should be playing in universal access (UA) and even in universal service (US). Best practice is now pointing to the inclusion of mobile operators in UASF competitions; India, for example, now has a major universal access and service (UAS) programme of financing towers for mobile and other wireless operators in rural areas. Whereas the best solution is to ensure that UASF regulation is flexible from the outset, the issue of change and adjustment is also discussed further in [Section 5.3.8](#) that deals with fund evaluation and adjustment of rules and targets.

For example, the European Union's 1998 Universal Service Directive allowed for small players (e.g. under 5% market share) to be exempt from contributing to any Fund. This is not mentioned anymore in the 2002 EU Directive, mainly because the wording has become more generic.

#### 4.5.2.3 APPROPRIATE INDUSTRY CONTRIBUTION

As noted in [Section 3.2.2](#), operator levies typically range from less than 1 per cent of operator revenues in South Africa to 5 per cent in India and Colombia and 6 per cent on certain qualifying revenues in Malaysia. How is the level of Universal Access and Service Fund (UASF) contribution established?

There are two ways to estimate what is an appropriate funding level for each country. These are as follows:

1.
  - Policy-driven approach – Determine what scale of subsidy programme would be required to meet the country's policy objectives and time-bound universal access and service (US) targets. The total cost and subsidy estimates are compared to the total sector revenues. The percentage of total sector gross or net revenues calculated by this method becomes the high level estimate; or
  - Market-driven approach – Determine from a survey or assessment of operator and other stakeholder opinions, as well as from international benchmarks, what operators would accept or could afford as a reasonable contribution. Then develop the UASF programme to match this.

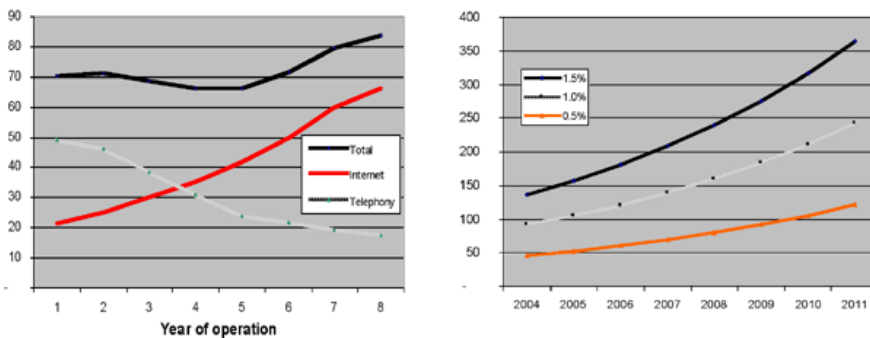
For many reasons, a hybrid iterative use of these methods is recommended. The main reasons for this are:

- - Levies based on a policy-driven approach may be a political wish list and too costly which is not rooted in the reality of what can be achieved, or should be attempted, in a given time frame;
  - The policy-driven approach subsidy programme could also require a larger than practical bureaucracy, in the form of UASF staff and programme management, than is realistic or sustainable by the industry in a liberalized market; and
  - In some cases, the initial estimate of programme cost quickly becomes out of date due to the sector's rapid development (i.e., its expansion growth which in turn reduces the need for intervention and its financial growth which provides more finance than thought to the UASF), resulting in far less UASF subsidy

requirement than first thought, and consequently less operator levy.

International experience indicates that no developing countries appear to have been able to disburse more than 2 per cent of sector revenues in their UASF programme. As discussed in [Section 3.2.4](#), in the major countries that levied 5 or 6 per cent, despite having established sophisticated UASF organizations, less than half of the amount collected has been allocated back to the sector in subsidies. Matching programme cost (maximum subsidy) with the available resources Universal access and service (UAS) strategists must match the size of programme to the amount available annually in the UASF. In some cases, government or an international donor seeds the fund in the early years to assist with programme start-up. The following diagrams show the expected expenditures on the UAS programme initiated in Russia in 2004/5 compared with the options available for resources from operator levies. Three alternative percentage levy rates were based on a projection of market size over the planning years in question. The analysis indicated that Russia's fund would need to levy 0.5 – 1.0 per cent of annual revenues from the operators in the sector to meet the goals of the UAS programme. This analysis indicated that the goals and targets for telephony and Internet/ICT roll-out were realistic both in the context of total expenditure and expected balance in the early years and could realistically be scaled back to a lower level of collection after the third year.

Figure: Financial analysis of UAS programme plans, Russia, 2004/5



◀ Figure: Financial Analysis of UAS Programme Plans. Russia, 2004/5

Source: INTELECON analysis

Changing requirements over time Some existing UASFs have already seen an unexpected rapid increase in financial resources during the recent period of unprecedented market growth. As noted previously in this section, some have built up resources well in excess of their capacity to organize competitions and allocate subsidies. They may even be beyond all reasonable levels of investment requirement. Thus it is important for UASF statutes to provide for evaluation, re-assessment of the levy required and (by implication) reduction of levies over time to ensure that the supply of financial resources does not run ahead of needs and capacity. This is covered in [Section 5.3.7](#). Should levies be from gross or net revenues? Arguments in favour of collecting levies based on net or after-tax revenues, or at least based on revenue minus required interconnection payments to other operators, are as follows:

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- Avoids potential objections to what some operators would consider to be double taxation; and
- Avoids the appearance of imposing a heavy burden on new entrants, who are often taxed more heavily than early-entry operators who often have received a tax holiday. New entrants also typically face a heavier net interconnection outflow (as a percentage of total revenues) than well-established operators.

The pre-tax versus after-tax argument depends to a great extent on each country's tax regime, and whether UASF levies are classed or allowable as tax-deductible and whether subsidy receipts are also taxable in the period they are received. In general, UASF levies should be tax deductible as they represent a real cost, and subsidies received should not be taxed, as that is counter-productive to making finance available for the implementation of governments UAS policy. For the sake of simplicity and ease (low cost) of administration, levies are best calculated on gross revenues from telecommunications services, excluding certain items easily identified (e.g., equipment terminal sales, real estate or investment income) and value added taxes. However, some funds calculate their contributions on various formulations of net revenues, qualifying revenues, weighted revenues from various services, etc. [1]. The main objective should be to achieve the greatest transparency and efficiency in the levying process. As discussed in detail in [Section 5.3.8](#), the level of contribution should be re-evaluated and adjusted from time to time, as UAS objectives are met or as targets are changed or the growth and revenues available in the sector change over time. The evaluation process, which includes determining levels of contribution, should be enshrined as a periodic activity under the policy in order to reflect both the achievements and performance of the UASF strategy as well as stakeholder interests.



### 4.5.3 INSTITUTIONAL ISSUES: MANAGING AND ORGANIZING A UASF

As noted in the introduction of this [Chapter 5](#) as well as in [Section 3.2.3](#), there are some legitimate and understandable concerns regarding Universal Access and Service Funds (UASFs), as some have not performed as well as intended; however, closer scrutiny reveals that in most cases this is due to a lack of proper implementation and adherence to key principles of UASF management. This section therefore surveys the range of options available when developing UASFs, their management and staffing, accountability and transparency. This is a fundamental and critical step, one which can have political as well as practical and operational impacts; it influences whether industry ultimately responds and collaborates with the government and the regulator or holds back its support. A range of specific approaches are possible, so long as fundamental requirements are respected, such as the principles of efficiency, management capacity, accountability, fairness and transparency.

[Section 5.3.1](#) to [Section 5.3.3](#) review areas of best practice that need to be considered and carefully adhered to, within the specific context of each individual country.

[Section 5.3.4](#) to [Section 5.3.6](#) ponder some questions, concerns, risks or apparent shortcomings that can occur in the administration of UASFs. No survey of UASF finance can possibly be complete without a critical look at the experience gained around the world and the possible pitfalls and limitations that have been observed.

In [Chapter 3](#), [Section 3.2.4](#) Performance of funds to date, it was seen that in the period 1998-2006, only 26 per cent of UASF funds collected had been distributed to the sector on universal access (UA) projects. These sections seek to put this apparent lack of efficiency into perspective.

[Section 5.3.7](#) places both the best practice and the shortcomings of UASF operations into the context of the process of periodic evaluation and re-appraisal of UASF experience which should be enshrined in the implementation plan of a UAS policy and funding programme.

Finally, [Section 5.3.8](#) deals with the question of how UASF strategy and programming could evolve in the future as next-generation networks (NGNs) and enhanced ICT services evolve. These issues should be incorporated into forward planning under the periodic evaluation of the UASF in order to ensure that the strategy remains relevant into the future.

#### 4.5.3.1 TARGETING COMMERCIAL VIABILITY AFTER SUBSIDY

The mechanism of smart subsidy competition geared to the achievement of realistic universal access and service (UAS) objectives also generally conforms to the Output-based Aid (OBA) principle introduced in [Section 5.2.1](#) and described in the Practice Note *Output-based Aid explained*. It is crucial that UAS targets are realistic and feasible for the market so that commercial operators, with some smart subsidy support, will be able to and will want to achieve them. The objective of a smart subsidy calculation is to enable operators to bring a potentially loss-making or marginal project into a normal commercial rate of return after the one-time subsidy has been received. The subsidy thus represents an amount that bridges the operator's financing gap. It could be viewed as support to offset capital investments, capitalized operating losses for the first few years, or a combination of both. The important concept here, is that the subsidy is a once-only allocation which may be disbursed in tranches over a stipulated period of time (e.g., one to three years) corresponding to various output milestones, but is not open for re-negotiation or longer term continuation. For an explanation of the smart subsidy principle, see [Section 1.3.3](#) Market gaps and UAS policy. If UAS targets are unrealistic and could result in chronic and ongoing losses for the operators, then the concept of a once-only smart subsidy is not achievable and the Universal Access and Service Fund (UASF) would have to consider ongoing support to operators to cover annual operating costs. Successful funds have used independent demand studies to provide adequate data on which to base their UAS targets and subsidy estimates (see [Section 7.3](#)). These can also be shared with the operators who, it is hoped, will bid for the UAS projects. In fact, issues regarding what targets are reasonable and sustainable after subsidization also require industry consultation. All efforts should be made to involve the fund's key contributors in decision-making with respect to the uses of the fund, the size of levies and the subsidy strategy. This increases the chances of achieving credibility for the UASF and its management, and that operators will buy-in to the programme and willingly contribute the finances required to support it. This important part of the broader process of consultation, which is an inherent component of UAS policy development, is described more fully in [Section 4.2.6](#).

#### 4.5.3.2 UASF MANAGEMENT

This section, as well as the following [Section 5.3.3](#) describes the practices typically outlined in the Universal Access and Service Fund's (UASF's) administrative rules or manual of operating procedures. A sample outline for this kind of document is provided in Practice Note Outline Manual of Operating Procedures attached to [Section 4.3.2](#) Detailed regulations. Often the national regulatory authority manages the UASF on a day-to-day basis. The two main reasons for this are as follows:

1.

- The regulator will have a degree of independence from government and industry; and
- The regulator will have technical and regulatory expertise.

A UASF programme will have a greater chance of success if the regulator has a strong reputation for independence and industry trust. This is even more important if the government still has an ownership stake in any of the operators. However, it is best practice that the regulator provides the Secretariat expertise and everyday management, under a special Management or Advisory Board, which provides high-level strategic direction, approves major projects and fund disbursements, and monitors proper execution and financial integrity.

### **Board**

All UASF's have a Board functioning above the level of the senior executive. However the Board's role differs from country to country, depending on specific local factors. The options are as follows:

- - Direction or management – making executive decisions on a wide range of issues from hiring of senior managers to budgetary approval, approval of UAS programme and projects, and the final award of subsidy contracts;
  - Monitoring and oversight – ensuring that the decisions of the executive (whether named director, manager or administrator) and his/her management team are scrutinized on behalf of stakeholder interests; or
  - Consultative or advisory – requested to review proposed UAS programmes and projects, executive decisions, provide expertise and advice.

Whichever model is chosen as most appropriate, the Board typically comprises members providing a combination of stakeholder interests, and typically includes:

- - The Ministry responsible for Communications;
  - The Regulator;
  - Other ministry or agency with special interest in the Internet / ICT aspects of the programme (e.g., Education, Science & Technology, etc.);
  - Consumer associations (if existent);
  - Industry association; and
  - Special expert(s) in the fields of telecommunications and ICT without any direct affiliation to an operator.

Because of the spectrum of possible functions, there is a wide difference of opinion regarding the make-up of the board. For example, if the Board is actually responsible for the final decisions (as in the case of Peru or Nigeria), operators and service providers cannot have direct representation as this would constitute a conflict of interest. In such cases, it is still wise to have independent telecommunications experts who have experience of the commercial sector. On the other hand, if as in the case of Mongolia, the Board's role is purely one of monitor or watchdog, there could be a rationale for having several direct representatives of industry on the Board, to ensure openness, fairness and industry satisfaction that the money it contributed is being used properly. In cases where the regulator would not have the capacity to manage the technical, administrative or financial aspects of the fund, outsourcing to an independent private sector agency is recommended [1].

### **Staffing**

In addition to a full-time Manager or Director (sometimes called the Administrator), who does the overall programme and implementation planning, the UASF should have at minimum, the following staff:

- - Projects manager / Senior project manager(s);
  - Technical manager & staff for field inspections;
  - Research manager and data specialist(s);
  - Contracts & administrative manager; and

- Finance & accounts manager (full or part-time).

The number of staff will vary depending on the size of the fund. For example, a small fund managing a programme of less than USD 15 million in the first five years, such as Uganda's or Mongolia's, will only need four to five dedicated staff, whereas others with annual potential of over USD 50 million could need two or three times the number of staff members. Some of the staff may be semi-permanently seconded from the regulator's other departments, or used on a time-share basis (e.g., the accountant's position may only require a few hours per week except during major reporting periods).

#### 4.5.3.3 ENSURING ACCOUNTABILITY, TRANSPARENCY AND EFFICIENCY

This section discusses several different measures that are required to ensure the financial integrity of Universal Access and Service Funds (UASFs) [1]. These include:

- Accounting transparency;
- Independent auditing, publication and annual reporting;
- Keeping administrative costs to a minimum; and
- Efficient use of funds.

**Accounting transparency**The UASF has its own separate account in a reputable bank, which is exclusively used for its purpose and not mixed with any other regulatory activities, if the regulator is the UASF administrator. The UASF therefore has also a distinct accounting system that is not linked in any way with other institutions, with government or even the regulatory body which may manage the day-to-day UASF operations. In a system that maintains separate accounting practices for the UASF, balances can be monitored, expenditures can be tracked and thus the public's trust in the UASF can be upheld. In some countries, UASFs without proper accounting separation and standards, or where the funds are paid into a government account, have been appropriated and used for purposes other than initially intended. Independent auditing, publication and annual reportingThe finances of the UASF should be audited annually by an independent accounting firm and the report should be presented to the requisite government authority and be published for the general public. Also, an annual report of all the UASF's activities, its programmes, projects and plans, progress and set-backs, receipts and disbursements should be prepared, and made public. Keeping administrative costs to a minimum Dedicated staff should be competent but kept to a minimum. While the actual percentage of administrative overhead cost may vary from country to country, based on the size of the funds and in-country costs, it is important that this number is monitored and a ceiling is set, for example not to exceed 2-3 per cent of the total amount held by the fund per annum. However, in the first year the UASF is established, these costs may need to be slightly higher. Non-administrative costs related to project preparation, management and monitoring may also be higher, though it is wise to set a guideline for them in the rules (for example, 5 per cent of each projects' total cost). Maximum ceilings can be established by financial analysis that projects UASF fund receipts and staff and other costs.

An evaluation of Peru's Telecommunications Investment Fund (FITEL) was conducted in September 2003 after the Fund had undertaken several major projects. While in the early years, administrative overhead expenditure rose to as high as 2 per cent of the funds under management, this category stabilized to around 1 per cent of FITEL's cash balance (and maximum of 2 per cent of total annual levies) from 1998 to 2003.

#### ◀ BOX 1 Keeping Costs Manageable in Peru

Typically, a UASF's legitimate administrative and operational expenses should be spelled out in the operating manual, administrative rules or regulatory procedure describing the administration of the fund. The following are examples of legitimate costs and expenses:

- Salaries, emoluments, remunerative packages and allowances for:
  - UASF departmental staff;
  - Regulatory staff seconded temporarily explicitly to the UASF operation; and
  - Board members (in accordance with the provisions of the appropriate regulation);
- Office equipment, administrative and operational costs specifically and directly related to requirements of the UASF operation;
- Operational and travel expenses for the activities of the UASF Board, the UASF management and staff;
- Administrative fees associated with outsourcing contracts as allowed in the operating manual of regulation;



- Annual financial auditing by an independent accounting firm;
- Non-administrative special costs:
  - the carrying out of technical, socio-economic or demand studies directly pertinent to the development of the UASF programme and tender competitions;
  - consultancy or advisory contracts directly associated with the UASF's tender competitions;
  - the hiring an independent technical auditor or the auditing process undertaken by the UASF departmental staff to certify milestone completion before disbursement of certain subsidy tranches as per contract; and
  - the carrying out of monitoring and evaluation activities.

Additional items not covered in the agreed list should be added only with the express approval of the UASF Board. All finances should be governed in strict accordance with the rules and operating guidelines established by the Operating Manual or regulation and established budgeting practice. If the fund is managed as a department of the regulator, the finances, including all payments, withdrawals or other financial transactions relating to the UASF, should also satisfy the regulator's requisite financial policies and regulations. Efficient use of funds Careful management as well as effective subsidy estimation and market mechanisms in the distribution of funds can combine to ensure that the required levy is kept to a minimum and funds are not wasted, either through inefficient administration and management or in the market place. Uganda's 2005/06 competitively tendered subsidy process saw an average of only 61 per cent of the maximum subsidies available (in three separate competitions) used for the universal access (UA) awards. The use of a competitive tender process, after the fund manager had estimated the maximum allowable subsidy, led to efficient use of resources. The unused 39 per cent of the money allocated to this tender could be used for other universal access and service (UAS) projects. By comparison, Chile's FDT programme used 54 per cent of its allocated subsidies in its main rural telecommunications subsidy competitions (1995-2000) and Peru's FITEL programme used just 36 per cent from 1999 to 2003, thus all three subsidy programmes have been efficient and have also leveraged private investment equal to or greater than the level of subsidies granted. Holding of investment funds The investment and management of funds that are being held prior to distribution as subsidies, should be done in accordance with rules that govern safe and low-risk investment practices as determined by the government or laid out in the operating manual. Typically, the assets of the fund may be invested in fixed bank deposits with an approved bank, in government treasury bills and securities, or in other vehicles only in accordance with guidelines approved by its Board and openly reported in the UASF's annual report.

As noted in [Section 5.3.3](#), one possibility for proper management and disbursement of UASF funds is to outsource these functions to a respected financial trust company. This role should be openly tendered in accordance with very specific rules and regulations.

#### 4.5.3.4 RISKS OF HIGH CHARGES AND HIGH COST UAS ORIENTATION

A few Universal Access and Service Funds (UASFs) struggled with the following two problems:

- Some UASFs were limited, by law or lack of appreciation for wireless developments, to provide financing for fixed-line universal access and service (UAS) only; fixed line expansion into remote, high costs areas has been very expensive compared to more economic wireless options (see also [Section 3.2.3](#));
- A few UASFs set the operator levy quite high in the early days before regulatory reform and the mobile expansion led to unexpected and unprecedented growth in the sector; as a consequence, these UASFs accumulated more financial resources than needed and that they were able to efficiently distribute.

#### Country cases

As noted in [Section 5.2.3](#), international experience has shown that there are no developing countries that have been able to distribute more than 2 per cent of sector revenues in their UASF programme. [Section 3.2.4](#) shows that funds such as those in India, Malaysia and Colombia, that have levied 5 or 6 per cent and established relatively large UASF organizations, have managed to distribute back to the sector less than half of the amount collected. In the case of India and Malaysia, there has been only a limited universal access and service (UAS) role to date for mobile operators, even though mobile operators are often now best placed to be the carrier of UAS services. The original high levies designed to cover the cost of implementing high cost fixed line solutions, without making financial adjustments as the commercial market expanded and changed, have yielded far more financial resources than the fund managers need to meet an objective that may in fact have shrinking costs. In the case of India, the programme of the Universal Serviced Obligation Fund has been expanded and diversified considerably in order to spend more of the resources available to it. Measures have included the financing of mobile infrastructure and it is understood that Malaysia's policy is also under review.

In 2001, Brazil established the National Telecommunications Fund (FUST), financed through a one percent operator levy.

Because of Brazil's large market size, the government has been able to accumulate a large amount (USD 1.7 billion as at June 2005). The fund was created to finance telecommunications service access to low-income groups, schools, hospitals, libraries and remote locations. However, the money cannot be disbursed due to conflicting legal interpretations, largely relating to its restriction to the funding of fixed services and inability to facilitate any role by mobile services, and a lack of political will and consensus, as policymakers are the decision-makers on the use of FUST. As a result of FUST's inability to operate, the unused funds support the federal government's efforts to increase the public sector surplus or stabilize its currency through important foreign reserves, though negatively affecting the general credibility of the UASF mechanism internationally. However, Anatel managed to further UAS goals through issuing new licenses which included UAS requirements and innovative pairing of frequency spectrum tendering with UAS targets, as discussed in [Section 2.4.2](#).

A further example is South Africa's fund, which even though the levy has been only a small percentage, experienced problems in the early years. The Universal Service Agency of South Africa started with a telecentre programme in poor communities, but the majority was considered ineffective due to a combination of insufficient connectivity, management issues and sustainability problems. Also, the later approach of licensing small rural operators and providing them with grants in underserved areas is considered controversial: it under-estimated the rapid progress of mobile operators in rural areas and only a handful of the rural operators are operational, struggling against the competition from mobile operators as well as dealing with lack of regulatory support. However, it is probably too early to decide whether they are successful or not, as there are some that have become Mobile Virtual Network Operators (MVNOs) for the leading mobile operators and others that provide VoIP. South Africa's UASF has large unspent reserves; while the government is now pressing the re-organized Universal Service and Access Agency of South Africa (USAASA) to distribute available funds, it is also placing UAS obligations on new licensees in the sector as well as attaching them to new frequency holders.

In all of these cases, unspent levies represent an opportunity cost to the sector, which lowers overall economic efficiency and, ultimately, network reach. To balance these negative experiences, as already noted, the Ugandan model became the first of several new-breed, smaller sized, less bureaucratic and technology neutral UASFs in Africa and elsewhere. These exist mostly in lower income and/or geographically challenging markets that do, in fact, need some level of intervention.

The Ugandan fund, in addition to telephony tenders, also successfully held competitions for Internet POPs in every district centre in the country. Up to 2007, it has attracted more seed finance from the World Bank than it has spent from the one per cent levy on operators and, in reality, has contributed more to development of the sector and to UAS, in a challenging economic climate, than it has cost the operators.

#### **4.5.3.5 FASTER COMMERCIAL EXPANSION THAN UASF IMPLEMENTATION PACE**

In Uganda, as well as in Nigeria, Mozambique, South Africa and many other countries, mobile network development has outpaced the regulator's ability to promote universal access and service (UAS). For example, due to funding and tender delays, half of the communities slated for subsidy in Uganda under the first Rural Communications Development Fund (RCDF) tender had already been reached by the leading GSM operators before tender award had been made. As well, the highly successful Village Phone model of public access had already been rolled out to more than 4,000 villages. Happily, this actually enabled the leading operator to bid the lowest subsidy and saved the World Bank (and ultimately the RCDF) almost 40 per cent of the predicted subsidy. However, because of political instability and insurgency in the north of the country, the RCDF programme had an important and relevant role to play in areas not yet served commercially. Thus there are lessons to be learned which have shown that in many cases, the administration of a Universal Access and Service Fund (UASF) may not be sufficiently agile to actually keep ahead of the market and distribute subsidies to the most appropriate areas. This emphasizes the need for regulators and fund administrators to work closer with operators and include their roll-out plans more strongly into UAS programme planning, make special efforts to avoid areas that will be served commercially through normal market forces, and focus on the removal of hurdles to market efficiency. Prioritise the enabling of commercial solutions. Because of the pace of development of the telecommunications and ICT industry, commercial solutions are often better, more sustainable and arrive faster than policy makers are able to anticipate and design for. Therefore policy makers, regulators and UASF managers need to be careful not to waste time and resources planning interventions for areas and basic services that would be better served without intervention. Policy makers, regulators and UASF managers should focus attention on the following market efficiency gap measures (See [Section 1.3.3](#)):

- Regulatory measures that create an environment more conducive to competitive network expansion;
- Fiscal measures that will make services and communications hardware more affordable to low-income users; and
- Enabling activities, such as promotion and advertisement that highlight the opportunities available to people, communities and organizations to take advantage of the services offered in the competitive market.

This places the policymaker and the regulator in the leadership role in the investment environment aspect of the general

trends, sector developments and tools described in [Section 5.1](#). At the same time, the UASF manager's identification of projects for funding under the UAS programme should probably favour the less attractive, more marginal side of the smart subsidy zone than the more obvious areas that are likely to be reached soon, in recognition of the capacity of the market players to outstrip the UASF process (see [Section 5.3.6](#) following).

#### 4.5.3.6 THE SMART SUBSIDY ZONE IS HARD TO PREDICT

As indicated by the Ugandan example in [Section 5.3.5](#), there is some uncertainty associated with the nature and size of the smart subsidy zone (see [Section 1.3.3](#) Market gaps and universal access policy for a discussion of this concept). The question of whether there is even a need for financial intervention could be one of timing. Some areas will receive commercial service, though government would prefer that to take place ahead of the market. On the other hand, commercial service could arrive before the UAS funding programme can be implemented. Considerations include asking how long a marginal area might remain unserved in today's dynamic and competitive mobile growth market or how likely it is that some very remote access-gap areas are to remain unreachable by conventional mobile networks. In some cases, networks deemed unviable or less interesting today and that apparently justify intervention, could become commercially viable sooner than policy makers (or even operators) had previously expected. This could be due to several factors, such as the following:

- Some areas are strategically important to an operator for the purpose of achieving competitive advantage and brand recognition e.g., along lightly populated highways or leading into tourist or agricultural growth areas;
- The application of new and more advanced technical strategies that lower the cost of the network, e.g. extended range transmission or low power consumption (both essentially lowering Opex costs), could change the fundamental economics of an area; or
- Operators may simply reach lower priority areas before a Universal Access and Service Fund (UASF) can actually tender the subsidy, due to better than expected operator performance, competitive pressure or UASF procedural delay.

Focus interventions on areas definitely needing assistance Because of this, UASF outlays need to be focused on genuinely under-served and commercially unviable areas which would still flourish with a smart subsidy. Otherwise intervention could undermine commercial activity by subsidising one operator in an area that should be left to the market. The fund manager's task is a challenging one. First of all, it is best to avoid subsidizing areas that could be served by one or more operators in the next two to three years. However, this information is often difficult to secure. On the other hand, the most remote areas, which are definitely in need of support, may be chronically beyond the smart subsidy zone. These areas would need ongoing subsidy; this would also require more complex administration and management. These are the areas referred to as residing in the true access gap as discussed in [Section 1.3.3](#). Alternatively, as incorporated into Botswana's Draft UASF policy, some areas may justify temporary operational support, such as power supply subsidization or fuel subsidization, until such time as national grid electrical power supply becomes available. It is very difficult to predict which areas will need financial support when a market is still in its rapid expansion and growth phase. UASF managers are better able to predict the areas requiring support once a market reaches some level of maturity and shows early signs of saturation or clear signs of where the financial barriers lie.

#### 4.5.3.7 EVALUATION AND RE-APPRAISAL OF UASF OPERATION

Considering the issues outlined in [Section 5.3.4](#) to [Section 5.3.6](#) – namely the risk of unused revenue from levies, the pace of commercial developments, the challenge presented in identifying the smart subsidy zone, and the questions about Universal Access and Service Fund (UASF) continuing relevance – there will always be the need and opportunity for evaluation and re-appraisal. As communications markets develop and grow and as policy targets are met, adjusted or freshly crafted missions and targets are required. The amount of money needed to maintain a universal access and service (UAS) programme may not remain at the same level for very long. The Universal Access and Service Fund (UASF) programme, its orientation, and even the structure of the fund itself, should be subject to a regular strategic policy and management review, e.g., every three years. The evaluation should consider such issues as:

- The achievements of the fund against its objectives and targets;
- The development of the telecommunications market, and the role, relevance and usefulness of the UASF in meeting UAS objectives in the country;
- The collections and disbursements of the fund against projections, and investigation of reasons for departure from plans and targets;
- The costs and effectiveness of the fund's management and management structure;

- The strategic options for future development of the fund to further meet its own objectives and the fundamental ongoing UAS policy objectives for the sector; and
- The financial requirements of the fund to meet the new objectives, and recommendations with respect to future levies.

There could be a strong possibility that as the market grows and UAS targets are met, the percentage levied on operators could be reduced, unless the fund's mission and objectives (and staff size) expand considerably. The questions related to how UAS policy and UASF strategy and programming could evolve in the future, as next-generation networks (NGNs) and enhanced ICT services evolve, are also discussed in [Section 5.3.8](#). These issues should be incorporated into the forward analysis under the periodic evaluation of the UASF, in order to ensure that the strategy remains relevant into the future. Also, considering these required adjustments identified in evaluation and re-appraisal, it is evident that legislation on UASFs needs to be flexible – more principle-based and less prescriptive – to allow for required changes in the UASF operation to adapt to changing market and technological advances.

#### 4.5.3.8 NGN, ICTS AND FUTURE ROLE OF UNIVERSAL SERVICE AND ACCESS FUNDS

There are several developments and considerations influencing the thinking about the future of Universal Access and Service Funds (UASFs), asking the questions:

- If universal access and service (UAS) to telephony will be achieved in the near future, how relevant is the UASF model for ICT and broadband?; and
- How will the move to Next-Generation Networks (NGNs) influence the funding model of UASFs?

Changing focus to ICTA 2006 study undertaken for the Latin American association of regulators (Regulatel), concluded that Latin American UASFs funds had played an important role in network development, and identified some of the challenges as discussed in [Section 5.3.4](#), [Section 5.3.5](#), and [Section 5.3.6](#). While the study made many specific recommendations for improving, streamlining, or realigning the activities of Latin American UAS policies and UASF programmes, it also recommended consideration of a new mandate altogether for their role in the future of the telecommunications sector in the years ahead. Since universal access (UA) to telephony is, in the opinion of the study's authors, close to being achieved in Latin America, a main feature of the study's recommendations was to consider re-orienting UASFs towards supporting "ubiquitous deployment of advanced technologies and services". The study advised that as the communications technology revolution continues, the new generation of UASFs could be envisaged to become leaders, not delayed followers, in ensuring that populations have access to the most modern and effective networks, services, and applications available on the market. This would include broadband, wireless, multi-service platforms permitting full access to all functions and features of telephony, Internet, data transmission, e-commerce, e-government, multimedia entertainment and interactive communications.

These new UASFs role in promoting broadband would be through support to intermediary facilities, such as backbones (including POPs), towers and other passive infrastructure. The full account of this study and its interesting conclusions is available in the reference document *New Models for Universal Access in Latin America*. A new generation of funds, managed by public sector administrators, is still unlikely to have the capacity to lead developments in the field of advanced technologies and services, especially since the Latin American UASFs have faced similar challenges as referred to in [Sections 5.3.5](#) and [Section 5.3.6](#); instead, the commercial private sector is likely to continue to be the leader in technology and service innovation and service expansion, and that is in line with market-driven developments. Therefore, new UASFs may not lead but by putting emphasis on broadband can at least mirror in rural areas what the market is achieving on its own in urban areas. New UASFs, once government has agreed on an aggressive broadband promotion policy, would not wait until a large portion of the population has access to broadband to start filling in the gaps, but rather act in parallel to the market while taking care not to subsidize areas that the market would serve on its own. Enabling and supporting ICT development UASFs' greatest outstanding value for the medium term could be in support of Internet POPs, points of public access to the Internet, and ICT user development, as many funds are already doing. The latter will include short-term subsidization of access for vanguard institutions, such as schools, libraries, community groups and other agencies with limited resources, until the costs reduce and value to these organizations is sufficiently demonstrated for them to pay cost based prices. Such activity should also be well measured, focused on areas and communities with potential for sustainability in the medium term, and designed to be responsive to market forces, with several types of financial instrument that respond to entrepreneurial need, while not distorting or misdirecting embryonic and still emerging markets. NGNs, funding UASFs, and broadband.

There are questions as to how UAS policy, operator responsibilities and funding might evolve in the competitive technological and service environment giving rise to the emergence of next-generation networks (NGNs). This discussion is today most prevalent in the advanced OECD countries and is seen in a major Reference Document produced in 2006

◀ Box 1 Re-thinking Roles

As noted in the referenced OECD report *Rethinking Universal Service for a Next Generation Network environment*, "in rethinking 'universal' access to the range of NGN services, a core issue is whether broadband should be part of universal service obligations (USOs)". Of course, the level of access or service considered universal in the OECD or EU will be totally different from that in developing countries. Nevertheless, the same principle will hold that: "Universal service is an evolving concept .....In an NGN environment, current funding arrangements for USOs may be unsustainable. A variety of alternative arrangements can be envisaged ranging from a tax on each telephone number to financing through general taxation revenue. They should be thoroughly assessed against a number of criteria, such as economic efficiency, equity and competitive entry as well as against current practice where the infrastructure and service providers directly fund universal service."

While the discussion in developing countries is different, some of the impacts of current developments are already being felt, or soon will be. Thus, increasingly developing countries are turning their attention to broadband Internet and ICT services, including applications, usage and capacity development in addition to pure access. The roles and responsibilities for access to advanced ICT services include a wider range of players and financiers. In the broadband Internet and ICT realm, donors and non-government organizations (NGOs) whose roles shifted due to the rapid expansion of mobile telephony networks, focus more on applications and capacity building than on network reach. For this reason, the importance of a UASF, whose role has been mostly the provision of infrastructure and access to services, could possibly be thought of as diminishing once near-ubiquitous telephony service is achieved. That is not necessarily the case. Globally, the IP-based broadband networks needed as platforms for ICT services may not be simple upgrades of the networks dominating the telephony market, but may be disruptive new technologies that by-pass existing networks. These could be based on optical fibre or new wireless technologies. While in OECD countries, the competition will be intense and new services may roll out relatively painlessly through a number of alternatives, this may not necessarily be so in developing countries. New broadband networks may only arrive into rural areas at a cost that is much less recoverable from the service demand than was the case for the steamrolling expansion of mobile telephony. Thus UASF models and smart subsidy concepts developed for the telephony generation may need to be adjusted to this different reality. In summary, UASFs in the next generation could move in two main directions, namely:

- An increase in importance and role as a stimulating force for the market, piloting innovative rural service and application concepts, creating demand for advanced ICT connectivity and services (e.g. through financing broadband access for schools, more direct support of users and applications) and an enabling environment; and
- A funding mechanism for broadband networks into rural and unviable areas through support both at the retail end (e.g. shared access), as well as at the wholesale end (e.g. through intermediary network facilities such as backbones, wireless towers and other passive infrastructure).

Such re-thinking of options will be common to both developed and developing countries. For a multiplicity of reasons, therefore, a periodic evaluation and re-appraisal of the UASF, as described in [Section 5.3.7](#), is necessary to ensure that both best practice and best role of UAS policy and funding are maintained.

#### Reference Documents

- [New Models for Universal Access in Latin America, Summary of Main Report, Regulatel / World Bank](#)
- [Rethinking Universal Service for a Next Generation Network environment](#)

#### 4.5.4 OTHER APPROACHES TO UAS FUNDING

This section discusses the financial contribution to universal access and service (UAS) of Public-Private Partnerships (PPPs), international funding institutions (IFIs), non-government organizations (NGOs), corporate social responsibility (CSR) and philanthropic trusts, and municipal governments, amongst others.

[Section 5.1](#) General Trends in ICT development and UAS financing provided an overview of the spectrum of financiers active in the sector. It was noted that many OECD country donors, while still engaged in some bilateral ICT-specific programmes, are contributing to international multi-donor initiatives and public private partnerships (PPPs), and are also integrating ICT components into their development programmes for other sectors. Practice Note *Donor ICT for Development Programmes and Expenditures* provides a detailed summary of the activities in ICT of the 22 OECD's



Development Assistance Committee (DAC) members and of the European Union and lists many of the contributions to multilateral and multi-donor initiatives supported. NGOs and other public and private sector organizations, including technology investment trusts, philanthropic agencies, CSR programmes are also involved. It must be stressed that in the field of telephony, these agencies' roles are usually additional to the role of Universal Access and Service Fund (UASF) funding, and are typically not an alternative to them in remote and otherwise non-commercial areas. Also, whereas voice telephony often tends to require little more than to have service coverage in place for the benefits to spread even to the poorest, additional investments in developing shared and public access vehicles prove to be very important in many situations.

In the field of Internet and ICT development, the additional activities and investments become even more critical. For instance, investments in local promotion and awareness, applications development and capacity building are vital. Without the activity of international donors, NGOs and corporate organizations, UAS to ICT services would be largely ineffective in the first instance at least. Donor and NGO involvement in ICT development is more effective if adequately leveraged into partnerships and collaborative arrangements, which can have a broad impact on the users, communities, social groups, and on economic activities that can benefit from ICTs. In these situations, a UASF mainly plays the role of funding initial network access, e.g., an Internet POP, or access for a school or other vanguard institution, Internet café or telecentre. However, without the broader donor involvement in supporting ICT for development activities that leverage the use of these facilities, pure access may produce few benefits.

## Reference Documents

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- **Broadband infrastructure investment in stimulus packages: Relevance for developing countries**

### 4.5.4.1 PUBLIC-PRIVATE PARTNERSHIPS (PPPS)

Governments in both advanced and developing countries are turning to the private sector for the delivery of infrastructure services. This is additional to the cases of full-scale privatization. The reasons for new kinds of public-private partnership are driven equally from two different directions, which are:

- Recognition that private sector organizations often have superior management skills, understand the market and marketing forces, are motivated and financially efficient, even though they are driven by financial profit and may have a limited tolerance for risk in challenging situations; and
- Government has a mission and responsibility to meet social and developmental needs and service objectives which are in the public interest; it has financial resources it can invest in order to secure those objectives, and thus reduce the risk of financial failure as compared to a purely private venture.

The rationale for harmonizing these principles into projects that have a bearing on universal access and service (UAS) is not hard to see. For example, the government is keen to take steps in the development of broadband, enhanced Internet service provision and e-governance which need both private sector skills and government direction or vision and financial resources. [Section 4.1.3](#) provides relevant background to this discussion. Definition and degree of Public-Private Partnership Within this concept of combining the two forces into a partnership for common goals, there is a wide range of types of PPP. However, as a general concept, the following can be used as a broad definition: A cooperative venture between the public and private sectors, built on the expertise of each partner, which best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards [1]. The label of PPP could be applied to any project where both government and private organizations have a financial stake and the private sector is providing infrastructure or public services. A list of possible PPP models and the financial relationships involved is provided in the Practice Note Models of Public-Private Partnership. PPPs in telecommunications and ICT PPPs are coming into focus for a range of ICT activities, from some forms of network development (e.g., broadband), e-government and e-commerce initiatives, to some forms of application development. As discussed in [Section 1.3.3](#) and elsewhere in this module, purely private sector led development, or even Universal Access and Service Fund-style (UASF) subsidy funding may not be sufficient to reach certain areas or provide certain services, even with 'smart subsidies'. This may be especially the case where the government should take a lead in order to catalyze or enable a style of development that is not driven by commercial demand (e.g., health, education) and requires ongoing public funding. This could also include broadband backbones and the supply of transmission bandwidth sufficient to catalyze advanced ICT applications, for which demand is not yet proven. This could be a case for public-private partnership. There are a range of potential means by which government or international public sector participation could be used to catalyze the development of broadband networks. Some of these are listed in the World Bank's "Global Public-Private Partnership in Infrastructure" web portal's section on telecommunications [2]. The government of Singapore, often a leader in government initiated ICT schemes, has recently announced a competitive tender for such a scheme, offering up to USD 500 million funding for a national broadband network infrastructure to carry next generation services. The network of optical fibre cables will be operated in



a structurally separate manner from the operating service companies' switches and routers. The Practice Note Public-Private Partnerships in the telecommunications and ICT sector provides brief descriptions of a limited number of PPPs from Canada, India, Estonia, Malaysia, Egypt, the East African Region and the World Bank's Africa Regional Communications Infrastructure Program (RCIP), where various PPP models are used to promote the development of national backbones. Potential concerns around PPPsA natural concern with PPPs is whether the government by entering into an agreement with an industry player, is distorting the market by backing a certain player or technology, and that PPPs are anti-competitive. The same concern applies to multi-lateral donors, and to bilateral donors who may sometimes be seen as favouring their own industry in providing development assistance. Ways to avoid distorting the market are similar to the mechanisms universal access and services funds (UASF) often use: competitive tenders. The Singapore initiative described above is a good example for a best practice PPP, as they use a competitive tender to determine the private sector partner for their PPP. Another principle is to have, as far as possible, technology-neutral competitive tenders, or in general, focus on specifying the results and outcomes of a PPP initiative, its requirements, and provide flexibility for the private sector to develop their own proposed solution, model or approach. This avoids pre-determining the best technology, software or solution in the tender, allowing fair competition. A final concern relates to the period after the private sector player has been selected: is the government and are customers locked in? This concern needs to be addressed at the outset, in the design of a PPP project, and has to be weighed against the desire of the private sector party to have certainty and continuity. Possible approaches to reconcile these diverging interests are the following:

- Separate various parts of the PPP project where appropriate, e.g., have one company build a backbone and another manage and operate it; this might make it easier to replace a management company later;
- Consult industry beforehand on their particular interests, and on issues of ownership, divestiture and replacement rules, and include those rules, if appropriate, into the PPP contract;
- Limit the service contract, e.g., for three, five or ten years, after which it is open whether the chosen company will continue or a new tender is conducted.

Universal access and service funds (UASFs) and PPPsThe provision of UASF funding support on infrastructure projects is, arguably, a form of PPP. Even though the funding is levied from the industry, it can be seen as a specific-purpose tax and as such becomes state property. The government, through the UASF, allocates it to sector players, which sign special contracts with detailed obligations that they would not otherwise have. The retention of even partial ownership by the government is less important than its ability to play a role in directing the behaviour of the operator. In the case of most UASF programmes, the primary role for the host government (and/or regulator) is the analysis and setting of direction as to which targets for infrastructure development shall constitute the minimum acceptable level of coverage in telephony and ICT access and service provision, and which areas will need financial assistance to meet targets. Hence, UASF can be considered one form of PPP, possibly a "light PPP", as opposed to other forms where government has major ownership and is involved in management. In the case of UASF developments where the government, through loans or grants from the World Bank, has provided seed finance for piloting (e.g., Mongolia and Mozambique), or to support the first round of universal access (UA) project tenders (e.g., Uganda and Mongolia), there is clearly a form of PPP taking place.

## Practice Notes

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- [Models of Public-Private Partnerships](#)
- [Public-Private Partnerships in the telecommunications and ICT sector](#)

### 4.5.4.2 MUNICIPAL NETWORK ALTERNATIVES AND FUNDING APPROACHES

The emergence of municipal broadband networks provides an additional source of financing - from the municipal government - for ICT service development. There are encouraging and discouraging examples, which are described briefly below. The Reference Document Diversifying Network Development: Microtelcos in Latin America and the Caribbean identifies a number of small-scale network initiatives in Latin America. Among these, the Pirai municipal network in Brazil is a successful case that commenced from the demands of the municipal authority but spread to become the cornerstone of a broader and visionary plan to diversify the local economy and attract new investments through ICT and network development. The project included e-government, education and public access, with a range of application support and development activities. Many broadband access nodes have been established connecting all local government offices and most of the public schools, libraries, and general public access points. Broader commercialized services to households and businesses were also established through a public-private company. It appears that all financing flowed first of all from the municipal government and even though a commercial enterprise was later established, it was funded and supported by the municipality. The Practice Note Pirai municipal network describes this case. [1]On the other hand, several municipal Wi-Fi networks have been initiated in the USA, some with very limited success. Most of these are proving themselves to be operational failures because the cost and technical complexity of building the networks for reliable operation is high, the

revenue base had been largely unproven before the plans were laid, and effective commercial relationships were either not established or, in the liberalized environment of the USA, tend to create conflicts between public and private interests. Financial support for networks that are not built on the basis of solid demand and commercial feasibility will usually prove unviable, unless one player (such as the municipality) has limitless resources. Generally speaking, such networks should not be considered unless the municipal government is willing to pay for its development and to become the anchor tenant and thus to under-write operating costs at the start, as well as to form alliances to create vision and collaboration. This clearly took place in the Pirai case in Brazil, but has been lacking in most of the USA cases. On balance, this model is difficult to use for building a strategy for the developing world unless central or local government has both the vision and resources to under-write the initial installation and first few years of operation. But even then, the relationship with private sector interests (e.g., ISPs) must be clarified and it must be proven that the establishment of municipal networks does not run counter to general market development, which must eventually take place, and the health of private sector operators.

#### Practice Notes

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- [FTTH Projects](#)
- [Models for Infrastructure Sharing: Ireland](#)
- [Models for Infrastructure Sharing: Sweden's Stokab](#)
- [Models for Infrastructure Sharing: United States](#)
- [Pirai municipal network](#)
- [Public \(Municipal\) Initiatives](#)

#### Reference Documents

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- [Diversifying Network Development: Microtelcos in Latin America and the Caribbean](#)

### 4.5.4.3 VILLAGE PHONE, OPERATOR OUTREACH AND PARTNERSHIP PROGRAMMES

A number of mobile operators have promoted public access to telephony and ICT as a commercial outreach to rural areas, or as non-commercial investments to develop future markets, or even under their corporate social responsibility (CSR) programmes as economic empowerment projects. From the financing perspective, it is important to note two features, namely:

- This kind of initiative effectively participates financially in covering the costs of universal access and is sometimes directly complementary to UASF disbursements (as in the case of Uganda), while contributing to wider economic impacts; and
- In most cases, the projects involve the provision of finance, expertise and technical assistance from international partners and donors, effectively creating public private partnerships (PPPs) to reach beyond the purely commercial market gap boundaries.

A few examples of the financial approaches and partnerships being implemented in these styles of initiative are listed below, only as representatives of a wide range of projects taking place worldwide:

- Micro-finance bank led – Village Phone is the generic name attached to micro-finance led public access programmes originated either through the financial involvement of Grameen Bank (i.e., the original Village Phone programme through Grameen Telecom in Bangladesh) or replicated and financed through the Grameen Foundation and its partners [1]. The World Bank Group, through the IFC and its infoDev programme, have actively supported the programme, and Africa's leading mobile operator, MTN, has been the primary investment partner for three Village Phone replication programmes, in Uganda, Rwanda and Cameroon. The programme also offers a Replication Manual – see the reference document in Section 3.3.1 or see endnote [2].
- Corporate Social Responsibility led – MTN Nigeria has implemented a Rural Telephone Project (RTP) under a micro-finance scheme similar to but distinct from Village Phone, where rural and urban women, referred to as phone ladies are loaned money through Micro Finance Institutions (MFIs). Importantly, this programme has been supported financially through the company's CSR Programme, the MTN Foundation [3]. The objectives of the project are to provide GSM services in rural communities, and to alleviate poverty and empower women. The World Bank contributed to a pilot phase of this project that helped to expand the concepts from its initial start to a full-scale economic empowerment programme married to rural service outreach. Finally, the IFC, an investor in MTN Nigeria, also contributed to the planning of the final scale-up, by funding a performance assessment and feasibility study.

- Operator led – Telenor Pakistan has launched two programmes fitting the category of public telephony and information centres. One is called apnaPCO, which aims at bringing telephone access to the most disadvantaged rural communities in the country, and the other is a programme of community information centres, named Rabta Centres, to offer high speed Internet access to people in rural areas of Pakistan. The apnaPCO project has been set up with support from the Development Fund of the GSM Association (GSMA), the global trade association for GSM mobile phone operators. Telenor Pakistan has also entered into an alliance with the National Rural Support Programme (NRSP) for the roll-out of the project in the most impoverished rural areas of southern Punjab. The project works on the principle of shared access to voice, a term which refers to the sharing of a mobile phone, in the form of a supervised public payphone. The Rabta Centres offer all modern communications facilities, using high-speed EDGE technology to help bridge the digital divide. The role of both these programmes from the universal access (UA) perspective is obvious, but equally important is the partnership that this provides to Pakistan's Universal Service Fund (USF). While Telenor Pakistan might be investing in future markets irrespective of USF funding, Telenor is also using its programmes, alongside subsidized network expansion, in part to fulfill obligations accepted under the USF's pilot project in the north of Pakistan. For the Rabta Centres, Telenor Pakistan is also collaborating with the GSMA Development Fund, Nokia Siemens Networks and the ILO (International Labour Organisation) [4].
- Private development trusts and funds – The GSMA Development Fund, which has contributed to the above example, provides a significant model where investment has been put into collaborative projects with the objectives of providing scalable examples of shared or public access to telephone and ICT services and increasing awareness of governments, regulators and policymakers to potential commercially driven approaches to UA. Projects similar to the above are being supported in South Africa, Kenya, Nigeria as well as several other African and Asian countries [5].
- Corporate programmes and foundations – A number of major corporate programmes can be identified that can play (or have played) significant roles in ICT development alongside UAS programmes. These include, but are by no means limited to, the Intel World Ahead Programme, which assists with building of WiMAX networks [6], and HP's e-Inclusion program, which assisted individuals and communities in education and micro enterprise business development, among others, and ended in 2005.

#### 4.5.4.4 COLLABORATIVE INITIATIVES FINANCED BY OECD GOVERNMENTS

The following is a sampling of major multi-participant initiatives in ICT development which are financed or sponsored in whole or in part by OECD governments. Some of these activities, including activities of bilateral donors, are listed in the Practice note attached to [Section 5.1](#), entitled Donor ICT for Development Programmes and Expenditures. Most of the initiatives listed in this section promote institutional collaboration that reaches down to the community level. DOT-COM Alliance ([www.dot-com-alliance.org](http://www.dot-com-alliance.org)) Funding is provided by the United States Agency for International Development's (USAID) Bureau for Economic Growth, Agriculture, and Trade (Office of Energy and Information Technology and Office of Women in Development), regional bureaus, and missions. "Digital Opportunity through Technology and Communication" (DOT-COM) is an alliance of three organizations to promote ICTs for development. These organizations are:

- dot-GOV provides assessments, training and technical assistance on telecommunications and e-commerce policy and regulatory reform;
- dot-ORG provides pilots, technical assistance and institutional support to increase access and use of communication technology in under-served areas; and
- dot-EDU provides pilots, technical assistance and institutional support for the use of ICTs in education.

The DOT-COM programme provides USAID access to 15 grantee institutions and over 75 resource partners who work on ICT-for-development issues. Each of the DOT COM groups has a prime grantee with sub grantees and resource partners. The expected value of the awards is USD 75 million over five years. USAID Last Mile Initiative (<http://ict.usaid.gov>) As of 2007, USAID had Last Mile Initiatives (LMI) in more than 25 countries, including Ethiopia, Ghana, Guinea-Bissau, Kenya, Madagascar, Malawi, Mali, Mozambique, Nigeria, Rwanda, Sao Tome e Principe, Sudan, Tanzania, Uganda and Zambia. USAID's Last Mile Initiative is a global programme to expand communications access for the rural poor in USAID presence countries. The initiative was launched in April 2004 to help increase productivity and improve the prospects of rural organizations in areas underserved by telecommunications networks. The programme is administered by the Economic Growth, Agriculture, and Trade (EGAT) Bureau and supported by budget resources from all the regional bureaus. The Last Mile Initiative provides technical assistance of private telecom service providers (where possible) working with wireless and other information technologies to provide telecommunications, Internet, and ICT services in underserved rural communities. International Development Research Centre (IDRC) ([www.idrc.ca](http://www.idrc.ca)) The IDRC is a crown corporation created by the Parliament of Canada to help developing countries use science and technology to find practical,

long-term solutions to the social, economic, and environmental problems they face. The support programme, which supplements that of the Canadian International Development Agency (CIDA), is directed toward creating a local research community whose work will build healthier, more equitable, and more prosperous societies. Among the many projects in the telecommunications and ICT field financed by CIDA, was the original baseline research and consultancy that assisted the government of Uganda to establish its universal access and service (UAS) policy and to operationalize the Rural Communications Development Fund (RCDF). IDRC's Acacia initiative ([www.idrc.ca/acacia/](http://www.idrc.ca/acacia/)) supports Canada's contribution to the African Information Society Initiative (AIS). Acacia works with African partners to help countries apply ICTs that improve livelihoods, enhance social service delivery and empower citizens while building the capacity of African researchers. Acacia funds research and pilot projects that focuses on appropriate applications and technologies, infrastructure, policy, and governance. The funding is not typically used to finance the construction of ICT networks or facilities. Acacia provided USD 23.7 million in funding for the period 2006-2007.

International Institute for Communication and Development (IICD) ([www.iicd.org](http://www.iicd.org)) The IICD is an independent non-profit foundation, established by the Netherlands Minister for Development Cooperation in 1996. Its funding sources are the Dutch Directorate-General for Development Cooperation (DGIS), DFID and the Swiss Agency for Development Cooperation. IICD specialises in ICTs for development. IICD creates solutions using both modern media (such as computers, Internet, email and multimedia) and traditional media (such as radio and television) to connect people and enable them to benefit from ICT. IICD is active in Bolivia, Burkina Faso, Ecuador, Ghana, Jamaica, Mali, Tanzania, Uganda and Zambia in education, environment, governance, health and agriculture. In 2006, organizations and NGOs working at the community level accounted for 51 per cent of IICD's partners. In the private sector, IICD partners include small enterprises, such as farming cooperatives or small ICT training centres. Within governments, the national sector ministries are often local partners. By the end of 2006, IICD supported more than 130 project and policy processes, of which 30 per cent became self-supporting, while 60% continue with IICD support. Only 10 per cent could not be sustained. IICD's country programmes are currently reaching over 250,000 end-users. End users are people who now have access to the Internet or a computer.

The European Development Fund (<http://europa.eu/scadplus/leg/en/lvb/r12102.htm>) The European Development Fund (EDF) is a EUR 13.5 billion fund for African, Caribbean and Pacific (ACP) countries and for overseas countries and territories (OCTs) associated with EU member states. The fund began operations in 1959. Each EDF programme is designed for five years. The tenth EDF covers the period from 2008-2013 and provides an overall budget of EUR 22.7 billion. Of this amount, EUR 21.9 billion is allocated to the ACP countries, EUR 286 million to the OCT and EUR 430 million to the Commission as support expenditure for programming and implementation of the EDF. The amount for the ACP countries is divided accordingly: EUR 17.7 billion to the national and regional indicative programmes, EUR 2.7 billion to intra-ACP and intra-regional cooperation and EUR 1.5 billion to investment facilities. Approximately EUR 4.0 billion will be available on an annual basis for Sub-Saharan Africa under the 10th EDF. In December 2007, an agreement between the European Commission and the International Telecommunication Union (ITU) was signed with regard to implementation of an Action entitled "Support for the establishment of harmonized Policies for the ICT market in the ACP," a component of the ACP-Information and Communication Technologies (@CP-ICT) Programme financed by the European Commission (EUR 20 million from the 9th EDF). This Action will address the regulatory challenges facing the beneficiary countries in sub-Saharan Africa, the Caribbean and the Pacific Island States through three separate regional projects. The goal is to create a regulatory environment conducive to massive investments in ICT infrastructure and ICT-enabled applications which the countries will adopt for day-to-day use in their economic and social activities. It also fulfils the needs expressed by the beneficiaries concerned in the domain of capacity building on ICT policies and regulations and e-readiness. As part of the agreement, the European Commission has allocated EUR 8 million from its 9th EDF, to which the ITU has added USD 500,000 from its ICT Development Fund (ICT-DF). The Action will be managed and implemented by the ITU in close collaboration with relevant regional organizations. The three ACP projects build on an initial project funded by the European Commission and ITU to create a harmonized regulatory framework for 14 West African nations. In January 2007, 14 West African heads of State adopted as Supplementary Acts, a series of regulatory guidelines and decisions on key regulatory issues such as licensing, interconnection, numbering, spectrum management, universal access as well as model ICT legislation and policy. These decisions are now being transposed into national law in the region. (<http://www.itu.int/ITU-D/treg/projects/itu-ec/index.html>). The Commonwealth Development Corporation (CDC) ([www.cdcgroup.com](http://www.cdcgroup.com)) CDC's sole shareholder is the UK's Department for International Development (DFID). The CDC provides capital on a commercial basis in countries where businesses have difficulty accessing finance. All profits are re-invested in funds in emerging markets. CDC has received no government capital for a decade. In 2003, its investment in the telecommunications, media and technology sector was approximately 10 per cent of its portfolio, about GBP 111 million. Investments included mobile operators Celtel and Digicel. CDC has net assets of USD 2.8 billion. They aim to make at least 70 per cent of their investments in countries with per capita GNI less than USD 1,750, and the remaining 30 per cent in countries with per capita GNI less than USD 9,075. CDC targets at least 50 per cent of their investments in sub-Saharan Africa and South Asia. As of the end of 2007, the fund had GBP 53.3 million invested in the telecommunications sector in Africa. African investments included Moga Holdings of Algeria and mobile operator MTN Côte d'Ivoire. As of the end of 2007, the fund had GBP 6.2 million invested in the telecommunications sector in Asia.

Private Infrastructure Development Group (PIDG) ([www.pidg.org](http://www.pidg.org)) The Private Infrastructure Development Group (PIDG) is a multi-donor group founded in 2002. PIDG seeks to address the shortfall in

infrastructure provision in developing countries through encouraging private sector participation. PIDG members include: DFID, the Swiss State Secretariat for Economic Affairs (SECO), the Netherlands Ministry of Foreign Affairs (DGIS), the Swedish International Development Cooperation Agency (Sida), the World Bank, the Austrian Development Agency (ADA) and Irish Aid. The PIDG works through a number of facilities, such as:

- **InfraCo** - A privately managed infrastructure development company. It acts as an honest broker to create viable infrastructure investment opportunities which balance the interests of host governments, the national and international private sector and providers of finance. InfraCo aims to stimulate greater private investment in African and Asian infrastructure development by acting as a project developer, focusing on lower income countries. InfraCo funds early stage, high risk costs by taking an equity stake in the project. InfraCo will consider investments in the telecommunications sector, but has not yet invested in the sector;
- **Technical Assistance Facility (TAF)** - The overall objective of TAF is to enhance the ability of public and private sector clients to attract private capital to the financing of infrastructure and related services. TAF achieves this through assisting PIDG clients to evaluate, develop and/or implement risk mitigation, financial and regulatory mechanisms, standards, systems and procedures essential to raising funds in the capital markets. This will enable developing countries to make a strong and positive contribution to growth and poverty reduction. TAF grants are for studies, technical assistance, consultancy services and training to facilitate in country development and/or project implementation. TAF was established in 2004 and has USD 3 million per annum in funding; and
- **Emerging Africa Infrastructure Fund ([www.emergingafricafund.com](http://www.emergingafricafund.com))** - The Emerging Africa Infrastructure Fund (the Fund) is a public-private financing partnership initiated by the Private Infrastructure Development Group (PIDG). Following a competitive tender to the private sector, the Fund was launched in 2002. The Fund provides long-term debt or mezzanine finance on commercial terms to finance the construction and development of private infrastructure in 45 countries across sub-Saharan Africa. EAIF is able to provide between USD 10 million to USD 36 million to telecoms, transport, water and power sector projects, amongst others. Loans offer terms of up to 15 years. Loans are provided without the need for political risk cover. The fund has USD 365 million in resources. In the telecom sector, EAIF has funded a number of mobile operators (MTN Nigeria, Celtel Africa, Celtel Nigeria) and provided a total of USD 100 million in funding. The EAIF provided also USD 35 million debt financing to the USD 600 million Seacom project - an undersea fibre optic cable project along the east coast of Africa. The project closed in November 2007 and involves the construction of a 15,000 km cable connecting South Africa to India, via France, Egypt, Mozambique, Madagascar, Kenya and Tanzania.

#### 4.5.4.5 WORLD BANK AND OTHER INTERNATIONAL FINANCE INSTITUTIONS

This section highlights World Bank Group organizations or initiatives and International Finance Institutions (IFIs) particularly involved in the financing of telecommunications and ICT, and the complementary support of universal access and service (UAS) projects.

##### **World Bank ([www.worldbank.org](http://www.worldbank.org))**

The World Bank Group is the largest multi-lateral financier and provider of policy advice in the field of ICT in developing countries. Over the past five years, the World Bank Group has provided more than USD 3 billion of funding in over 80 countries through its three financing arms; the World Bank, the International Finance Corporation (IFC), and the Multilateral Investment Guarantee Agency (MIGA): The World Bank's mission is global poverty reduction and the improvement of living standards.

The World Bank is made up of two unique development institutions owned by 185 member countries—the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA). The IBRD focuses on middle income and creditworthy poor countries, while IDA focuses on the poorest countries in the world. Through IBRD and IDA low-interest loans, interest-free credit and grants are provided to developing countries for education, health, infrastructure, communications and many other purposes.

The Global Information and Communication Technologies Department (GICT) is a joint department of the World Bank and the International Finance Corporation (IFC), and promotes access to information and communication technologies in developing countries through policy and regulatory expertise and leveraging private sector finance. The World Bank has supported reforms in over 80 client governments and provided approximately USD 750 million in loans for ICT related projects. This support is in addition to lending projects in other sectors—such as health, education, trade, and finance— that have ICT components. Trust funds administered by the IBRD have contributed an additional USD 50 million to the ICT sector in the past five years.



MIGA, as an agency that provides political risk insurance to foreign investments in developing countries, has supplied an additional USD 700 million to the ICT sector through private investment guarantees. ICT is one of the best performing sectors in the World Bank Group's portfolio, both in terms of returns and development impact.

#### **International Finance Corporation (IFC) ([www.ifc.org](http://www.ifc.org))**

The IFC has been established to foster sustainable economic growth in developing countries by financing private sector investment, mobilizing capital and providing advisory services. In partnership with private investors, IFC provides loan and equity finance for business ventures in developing countries and helps expand their economies and create jobs. As a member of the World Bank Group, IFC coordinates its activities with the International Bank for Reconstruction and Development, the International Development Association and the Multilateral Investment Guarantee Agency, but it is legally and financially independent. Its 179 member countries provide its share capital and collectively determine its policies.

The Global Information and Communication Technologies Department (GICT) is the joint department of the World Bank and the International Finance Corporation (IFC). The total of IFC's commitments to telecommunications was USD 1.4 billion by the end of 2007, and includes mobile and fixed-line operators, broadband and cable TV infrastructure, satellite, and broadcasting. Investments typically range from USD 5 million to 150 million. IFC is able to finance from its own funds up to 25 per cent of total project cost for new projects and up to 50 per cent for expansion projects. Additionally, through its syndicated loan program, the IFC offers commercial banks and other financial institutions the opportunity to lend to IFC-financed projects that they might not otherwise consider. These loans have contributed another USD 1 billion toward the sector.

Starting in 2008, IFC expects that their new projects will enable an additional 12.2 million people to be connected, create 1,800 new skilled jobs in the IT and media sectors, and contribute a total of USD 2 billion in fiscal revenues and license, spectrum, and numbering fees over the next five years. IFC's portfolio, with outstanding commitments of USD 970 million, has seen no loan defaults and strong rates of return across the board in telecommunications, IT, and media. IFC has financed telecommunications projects in Afghanistan, Albania, Bangladesh, Cameroon, the Dominican Republic, Ghana, Haiti, India, Jamaica, Lao PDR, Maldives, Morocco, Nigeria, Pakistan, Paraguay, Peru, Romania, Russia, Sri Lanka, Thailand and Turkey.

#### **Public-Private Infrastructure Investment Facility (PPIAF) ([www.ppiaf.org](http://www.ppiaf.org))**

The Public Private Infrastructure Advisory Facility (PPIAF) is a multi-donor facility managed by the World Bank. It provides small technical assistance grants to developing country governments to help them improve their infrastructure services through public-private partnerships. PPIAF funds are grants provided on a demand-driven basis. About half the grants are under USD 75,000, while the average size of a PPIAF grant is USD 215,000. The Public Private Infrastructure Advisory Facility (PPIAF) advises developing countries on improving the enabling environment for private sector participation in infrastructure. Through its Sub-National Technical Assistance Program, PPIAF helps sub-national entities (government entities other than national governments) borrow to improve infrastructure. Telecommunications accounts for about 9 per cent of PPIAF's budget since its inception. From 1990 to 2006, PPIAF facilitated investments over 750 telecommunications projects. For 2007, activities funded in the telecommunications sector amounted to USD 2.4 billion, or 14 per cent of total funding. PPIAF financed telecom projects in Liberia, Sierra Leone, South Africa, Sudan, Pakistan, China, Indonesia, Sri Lanka, Armenia and Haiti.

#### **The Global Partnership for Output-Based Aid (GPOBA) ([www.gpoba.org/index.asp](http://www.gpoba.org/index.asp))**

GPOBA was established by the World Bank and the UK's Department of International Development (DFID) in 2003 to design pilot projects for OBA approaches, learn lessons, and disseminate best practice. DFID approved GBP 6.8m from 2003 to 2006. In 2005, DFID approved also a GBP 20 million Challenge Fund, to allow GPOBA to expand the scope of its activities to include funding of subsidy payments for pilot tests of OBA approaches in the infrastructure sectors. The IFC joined GPOBA as a donor, focussing their funds on projects in the infrastructure, health and education sectors that involve the private sector. The Netherlands government joined GPOBA with funding to support the provision of performance based grants for the delivery of basic services to the poor, particularly in the water and sanitation sector in Sub-Saharan Africa. The Australian Government Overseas Aid Agency (AusAID) and the Swedish International Development Cooperation (Sida) also joined as donors. GPOBA has funded telecommunications projects in Bolivia, Cambodia, Guatemala, Indonesia and Mongolia. As well, GPOBA funded a Regulatel study on UAS in Latin America, and a study of ICT development in the Asia Pacific region. The total funding provided by GPOBA for these projects was approximately USD 8.9 million. See also the practice note attached to [Section 5.2.1](#), entitled Output-Based Aid explained.

#### **infoDev ([www.infodev.org](http://www.infodev.org))**

infoDev is a global development financing program, coordinated and served by the Global ICT Department (GICT) of the



World Bank, one of its key donors and founders. infoDev's disbursements (typically less than USD 10 million per annum) is used mostly for commissioning studies, research and pilots. Its role is mostly as a neutral facilitator of dialogue, and as a coordinator of joint action among bilateral and multilateral donors—supporting global sharing of information on ICT for development (ICT4D), and helping to reduce duplication of efforts and investments. infoDev also forms partnerships with public and private-sector organizations who are innovators in the field of ICT4D. One focus area for infoDev is "Access to ICT – Broadening the reach and affordability of ICTs". Currently, infoDev's work in this area focuses on three interrelated challenges:

- Designing and implementing effective policies and regulations for ICT infrastructure and services;
- Developing new models of public/private partnership in financing the expansion of access to ICT infrastructure and services; and
- Exploring the contributions that technological innovation can make to developing new solutions to the access challenge.

#### **European Bank for Reconstruction and Development ([www.ebrd.com](http://www.ebrd.com))**

Established in 1991, the European Bank for Reconstruction and Development (EBRD) was initially aimed at helping communist countries in central and eastern Europe and ex-soviet countries in their transition to market economies, and supporting new private sectors in democratic environments. Today the EBRD extends its tools of investment to help countries from central Europe to central Asia similarly. The EBRD's main aims in the telecommunications sector are the following:

- Promote network expansion, thereby increasing access to telephone services and improve the quality of service;
- Encourage the emergence of innovative and advanced communication services;
- Accelerate the privatisation process; and
- Develop appropriate regulatory and legal frameworks.

The EBRD is the largest single investor in central and eastern Europe and the Commonwealth of Independent States (CIS). Direct investments generally range from EUR 5 million to EUR 230 million. Smaller projects are financed both directly by the EBRD and through financial intermediaries.

#### **European Investment Bank ([www.eib.org](http://www.eib.org))**

Created in 1958, the European Investment Bank (EIB) is the long-term lending bank of the European Union (EU). While the main task of the Bank is to contribute towards the integration, balanced development and economic and social cohesion of the EU Member States, it also makes telecommunications investments in developing countries and emerging markets such as Angola, Brazil, Colombia, Ecuador, Peru, Syria and Turkey. The EIB is expected to play an increasing role in the EU policy to reduce the "broadband gap" by encouraging private sector investment in broadband infrastructure. The investment requirements for next generation networks are potentially large, and the EIB is supporting the establishment of alternative broadband access platforms, including wireless technologies.

#### **Inter-American Development Bank ([www.iadb.org](http://www.iadb.org))**

Established in 1959, the Inter-American Development (IDB) Bank provides financing, policy advice, research, and technical assistance for development projects in 26 Latin American and Caribbean countries. In 2007, the bank made loans and guarantees of USD 2.1 billion in the transportation and communication sector. The IDB addresses telecommunications access through a number of activities, including the following:

- Project financing in the area of information and communication technology facilitated by the Information and Communication Technology for Development Division (ICT) of the IDB;
- Supporting universal broadband access through investment to expand local Internet access networks using the Multilateral Investment Fund; and
- Assisting public, private and mixed-capital entities in the identification, development and preparation of bankable infrastructure projects through the Infrastructure Fund (InfraFund) because the IDB identified the lack of funding for project preparation as a major bottleneck for the much-needed scaling up of infrastructure investment in the region.

#### **African Development Bank ([www.afdb.org](http://www.afdb.org))**

The African Development Bank (ADB) is a regional multilateral development finance institution engaged in mobilising

resources towards the economic and social progress of its regional member countries. Approvals for infrastructure projects in 2007 reached a record level of UA 1.9 billion, accounting for 75 per cent of the total loan and grant approvals for the year. 48.2 percent was allocated to power supply projects; 39.2 percent to transportation; 11.0 percent to water and sanitation; and 1.7 percent to information communication and technology (ICT) projects. The East African Submarine Cable System (EASSy) is of interest to the Bank's private sector operations. In 2007, the Bank's total cost for the EASSy project was USD 51.4 million, which included a USD 9.5 million loan. The Connect Africa Initiative is a global partnership launched in October 2007 to mobilize the human, financial, and technical resources needed to bridge major gaps in ICT infrastructure across the continent. A total of USD 55 billion (UA 34.08 billion) has so far been pledged for the development of infrastructure and services necessary to achieve both the ICT-related MDGs and the World Summit on Information Society Action Plan. The ADB will play a leading role in the coordination of this initiative.

#### **Asian Development Bank ([www.adb.org](http://www.adb.org))**

Established in 1966, the Asian Development Bank (ADB) is an international development finance institution, owned and financed by its 67 members, of which 48 are from the region and 19 are from other parts of the world. ADB's mission is to help its developing member countries reduce poverty and improve the quality of life of their people. ADB provides assistance in the form of equity, loans and guarantees, as well as complementary financing scheme for infrastructure projects. Examples of ADB involvement in ICT is its financing of the nationwide expansion and upgrading of Afghanistan's leading cellular network operator, Roshan, and its financial support to help prepare Assam (India) for e-governance.

#### **4.5.4.6 NON-GOVERNMENT & PHILANTHROPIC SOURCES**

Most of the focus of non-government assistance is on a specific sector of activity, e.g., e-health or e-education for rural and poor people. As noted in [Section 5.1](#), the role of most of these agencies in universal access and service (UAS) development is one of applications development and user and institutional capacity building. Without these complementary and supportive activities, the benefits of having access to the Internet and to ICT services, which UAS programmes provide, would go largely unrealized.

#### **Digital Freedom Initiative ([www.dfi.gov](http://www.dfi.gov))**

The Digital Freedom Initiative (DFI) is a partnership among US federal agencies, industry, NGOs and universities. It aims to expand connectivity around the world, particularly by helping developing nations utilize ICTs for economic development and to broaden social and economic benefits. Areas of focus include:

- Improved rural access to telecommunication services in rural and under-served areas;
- Policy and regulatory reform, and technical assistance to support infrastructure investment;
- The use of ICTs by small and medium-sized businesses;
- Expand use of technology in health care, education, and for secure financial transactions;
- More inter-regional commerce and export competitiveness through use of ICTs.

Recent DFI initiatives include a public-private partnership to bring telemedicine services to rural areas in Pakistan. Completed projects include: ICT skill training for private entities in Senegal; and, working with Intel, Cisco, Motorola, Voxiva and Hewlett Packard to supported Peru's effort to extend Internet access to over 1,000 rural areas.

#### **Grameen Foundation ([www.grameenfoundation.org](http://www.grameenfoundation.org))**

As described in [Section 5.4.3](#), Grameen Foundation is a non-profit organization that combines microfinance, technology, and innovation to empower the world's poorest people to escape poverty. The organization was founded in 1997 by a group inspired by Dr. Muhammad Yunus and Grameen Bank in Bangladesh. The Foundation's network of microfinance partners has impacted an estimated 16 million lives in 22 countries across Asia, Africa, the Americas, and the Middle East. Dr. Yunus is also a founding and current member of Grameen Foundation's board of directors. In terms of support for ICT programmes, Grameen Foundation's Technology Center is involved with ICT initiatives that are dedicated exclusively to advancing microfinance. The Foundation focuses on increasing the efficiency of microfinance institutions' operations, creating new microbusiness opportunities for the poor and providing telecommunications access for the world's rural poor. Building on the successful Grameen village phone programme in Bangladesh (see [Section 3.3.1](#) for details), the Uganda village phone programme was created in cooperation with mobile operator MTN Uganda in 2003. In 2006, after a yearlong pilot project with 50 entrepreneurs, village phone Rwanda was created as a joint venture between Grameen Foundation and MTN Rwanda. Grameen Foundation has also partnered with Nokia to make a village phone equipment kit available for purchase in developing countries.

#### **Bill & Melinda Gates Foundation ([www.gatesfoundation.org](http://www.gatesfoundation.org))**

The foundation partners with select countries to provide free access to computers and the Internet in public libraries. Their strategy has three elements:

- Identify country partners through extensive research—countries are invited to partner based on several criteria, including demonstrated need, the presence of a strong library system, necessary infrastructure (such as electricity and Internet capability), demonstrated commitment to public access to technology, and the potential for implementing and sustaining service.
- Provide resources—these include resources for planning, hardware, training, advocacy, evaluation, technical support, and project management. Microsoft donates software if the country requests it. Each country is asked to commit to the programme as a full partner, requiring them to make a significant investment for infrastructure, librarian salaries, and Internet connectivity; and
- Encourage sustainable programmes—the foundation works with grantees to develop library-based technology services that can be valued and supported for the long-term.

Grants include, but are not limited to, the following (examples only):

- BiblioRedes: Abre tu Mundo – USD 10 million to provide more than 2,150 computers, Internet access, and training to 368 public libraries in Chile (2000-2004); this grant brought the percentage of public libraries with computers from 10 to 100 per cent;
- Consejo Nacional para la Cultura y las Artes – USD 30 million to provide computers, Internet access, and training to approximately 2,400 libraries in Mexico (2002-2006); and
- Latvia – USD 16.2 million to connect 3,833 new computers in 874 public libraries to high-speed Internet, to expand access in rural Latvia, and for related training for 1,455 librarians.

#### **Aga Khan Fund for Economic Development (AKFED) ([www.akdn.org/agency/akfed\\_indpromo.html](http://www.akdn.org/agency/akfed_indpromo.html))**

AKFED is mainly an investment fund dedicated to promoting entrepreneurship and building economically sound enterprises in the developing world and works with governments, international corporations, international financial institutions and donors to create solutions to infrastructure needs, including power generation and telecommunications. AKFED has existed since 1960 and creates profitable companies in developing countries through long-term investments. Profits generated by the Fund are reinvested in other economic development initiatives under the AKFED umbrella. AKFED operates as a network of affiliates with more than 90 separate project companies employing over 30,000 people, with annual revenues in excess of US\$1.5 billion. The Fund is active in 16 countries in the developing world: Afghanistan, Bangladesh, Burkina Faso, the Democratic Republic of the Congo, India, Ivory Coast, Kenya, Kyrgyz Republic, Mali, Mozambique, Pakistan, Senegal, Syria, Tajikistan, Tanzania and Uganda. AKFED's initial involvement in building telecommunications infrastructure was in Indigo, a GSM operator in Tajikistan. In Afghanistan, AKFED determined that building communication infrastructure was critically important to the redevelopment of the country and formed the company Roshan, which was awarded the country's second GSM license. Roshan has invested over USD 338 million in expanding its coverage. Roshan directly employs over 900 people; indirectly, nearly 20,000 people are employed through distributors, contractors and suppliers.

#### **Dhan Foundation ([www.dhan.org](http://www.dhan.org))**

Development of Humane Action (DHAN) Foundation was initiated in India in 1997. The Trust has the objective of bringing highly motivated and educated young women and men to the development sector. The Foundation works towards bringing significant changes in the livelihoods of the poor. The DHAN Foundation has taken up information technology for the poor as a new theme with the following objectives:

- Making IT accessible to the poor by developing relevant programmes through research and pilot projects; and
- Collaborating with research institutions on e-governance and computer education at schools in rural areas.

As part of the programme, Village Information Centres (VICs) in rural areas as well as urban slums are set up through which services such as computer education, e-mail, ePost, agricultural market intelligence, etc. are rendered. Computer aided adult literacy centres for the Kalanjiam and Vayalagam members and computer training centres for the children of members of Kalanjiam and Vayalagam are also set up through the programme. By the end of 2006, the Foundation was involved in IT activities in 162 villages in 11 districts. One Lap-Top per Child (OLPC) initiative Started in 2005 by faculty and researchers at MIT's Media Lab, the One Lap-Top per Child (OLPC) initiative aims to provide children worldwide with new opportunities to explore, experiment and express themselves. The One Laptop Per Child Association is a non-profit organization set up to manage the creation of an affordable educational device for use in developing countries. OLPC is funded by a number of sponsor organizations, including AMD, Brightstar Corporation, eBay, Google, Marvell, News

Corporation, SES, Nortel Networks, and Red Hat. Each company has donated two million dollars. The OLPC Association's XO laptop was designed to be flexible, low-cost, power-efficient and durable. It uses free and open-source software. The XO, originally intended to cost USD 100, ended up costing USD 188, mainly because little or no large quality purchases were forthcoming from governments as expected. The first production units were delivered in December 2007. In May 2008, a new design concept was revealed that eliminates the computer's keyboard and is targeted to cost just USD 75 when it is released in 2010. Eleven countries have participated in OLPC pilot projects. Countries participating in the project (not pilots) include Afghanistan, Cambodia, Colombia, Ethiopia, Haiti, Mexico, Mongolia, Rwanda and the United States. Approximately 370,000 laptops had been shipped by July 2008. In total, there have been over one million XOs either shipped or ordered.

[Next: 4.6 UAS Programme Development and Prioritization →](#)

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The ICT Regulation Toolkit is a joint production of infoDev and the International Telecommunications Union (ITU).



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